

The Davidson

by Gurner™

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context



scale
NTS

dwg no.
2220-SD-3

revision
01

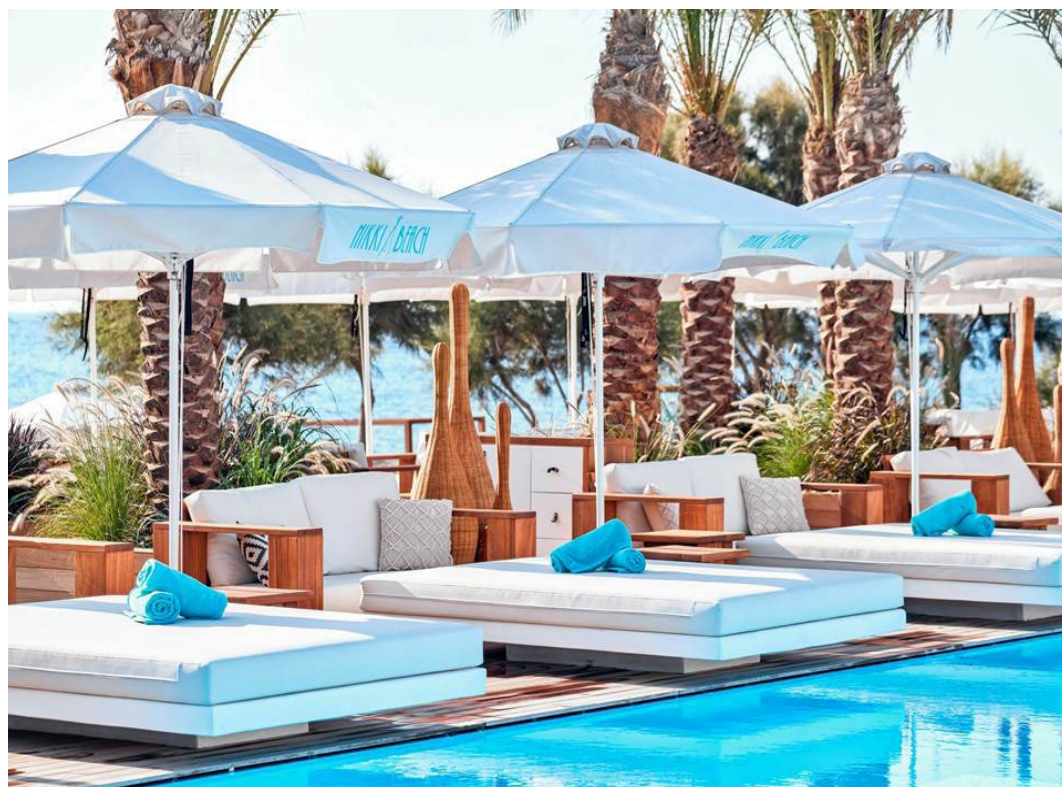
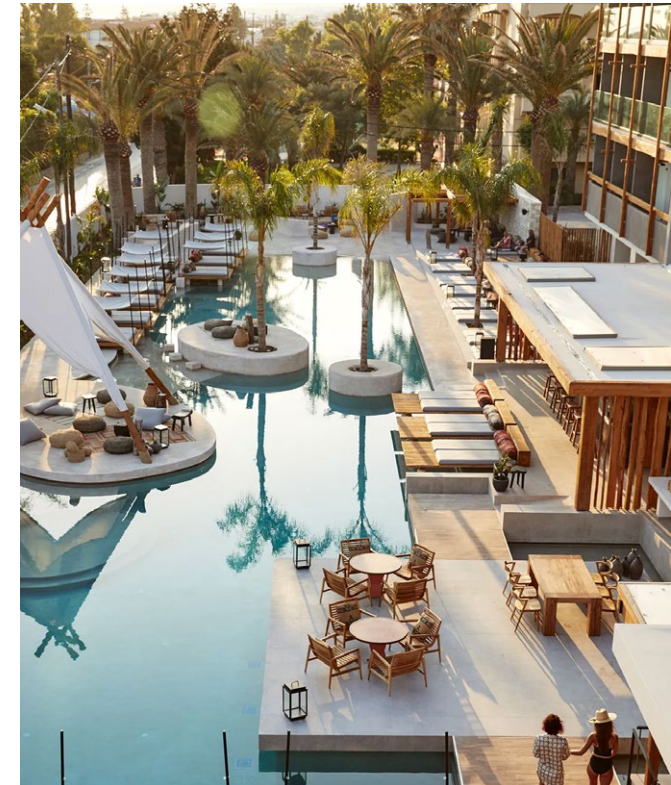


character

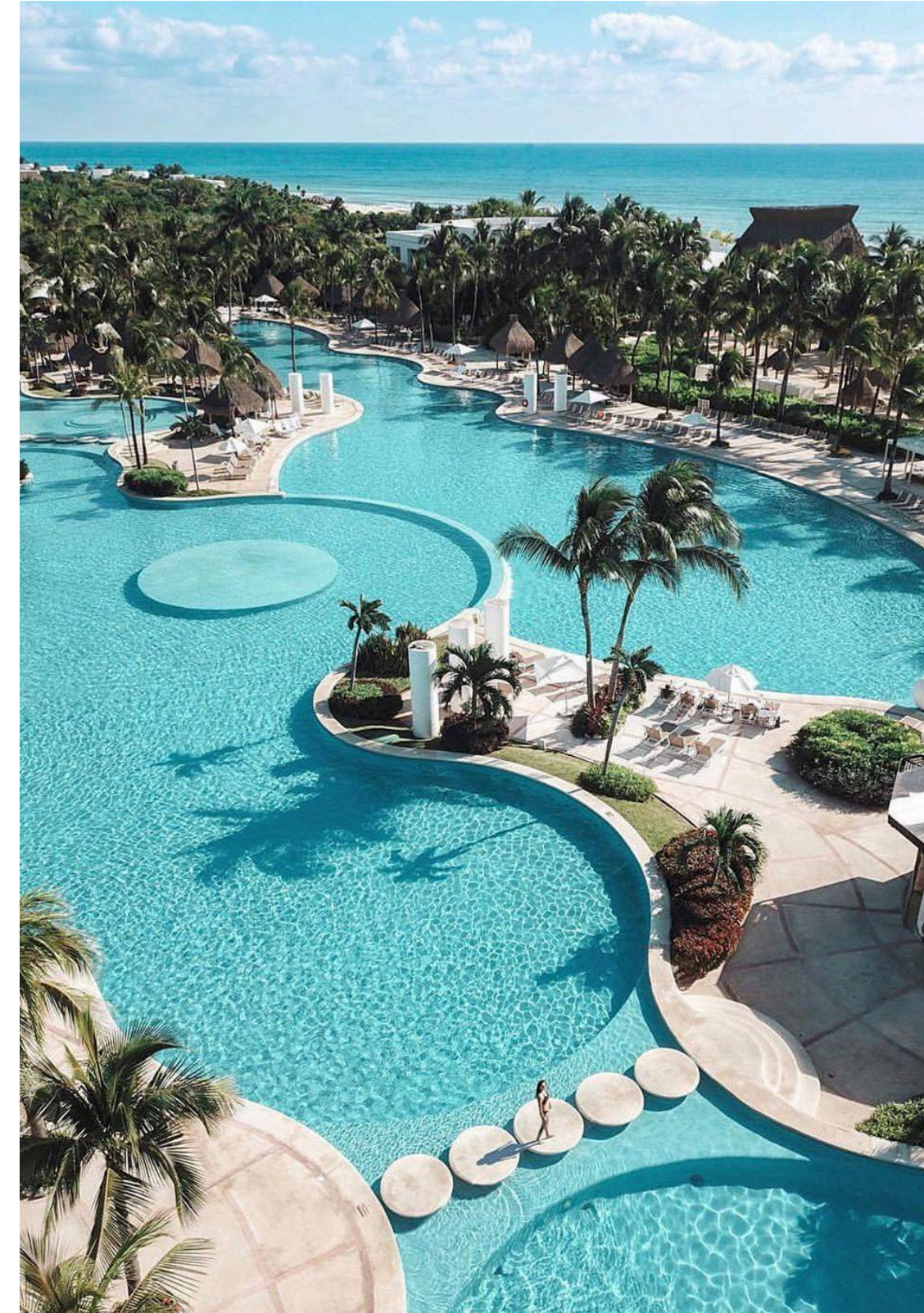
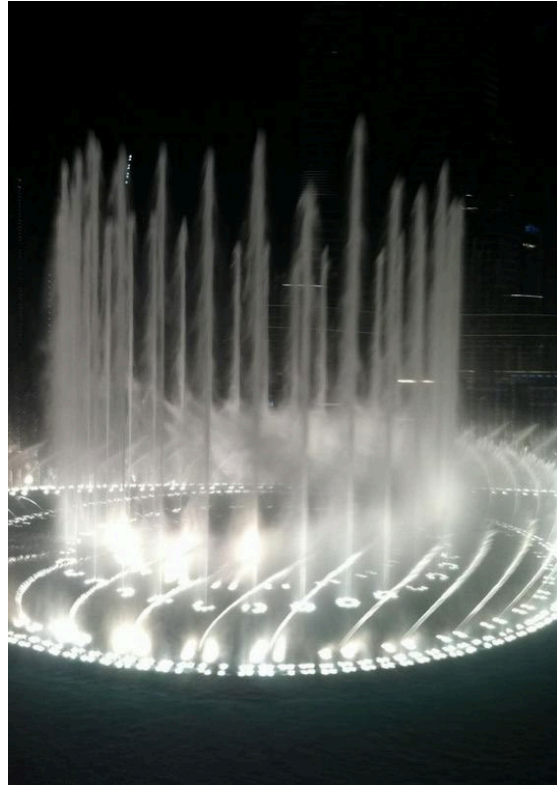
arrival/ port cochere



beach club



central lagoon



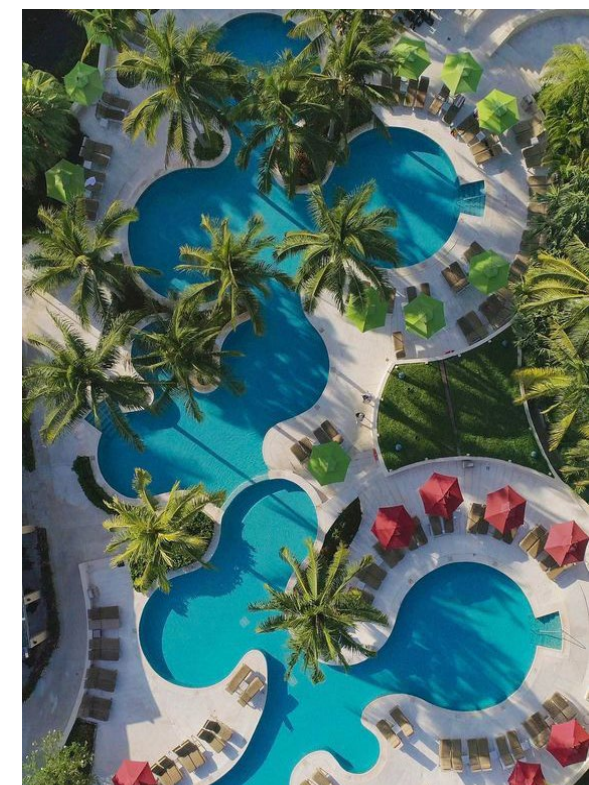
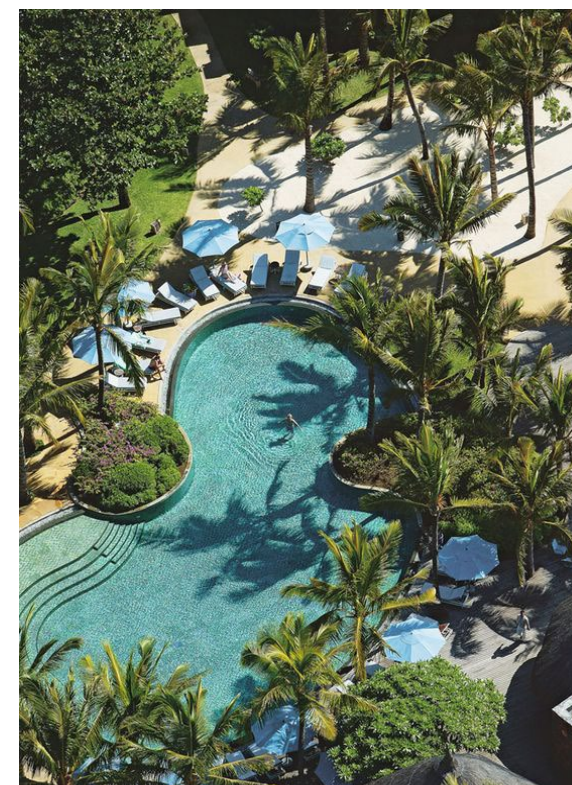
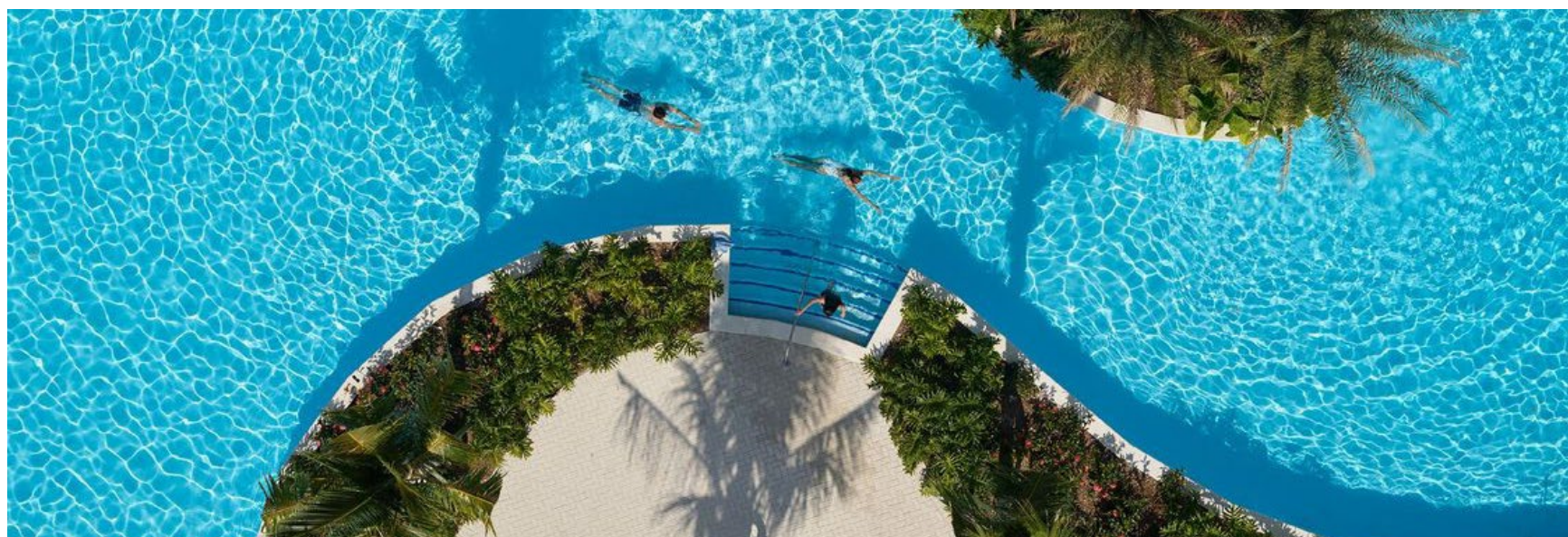
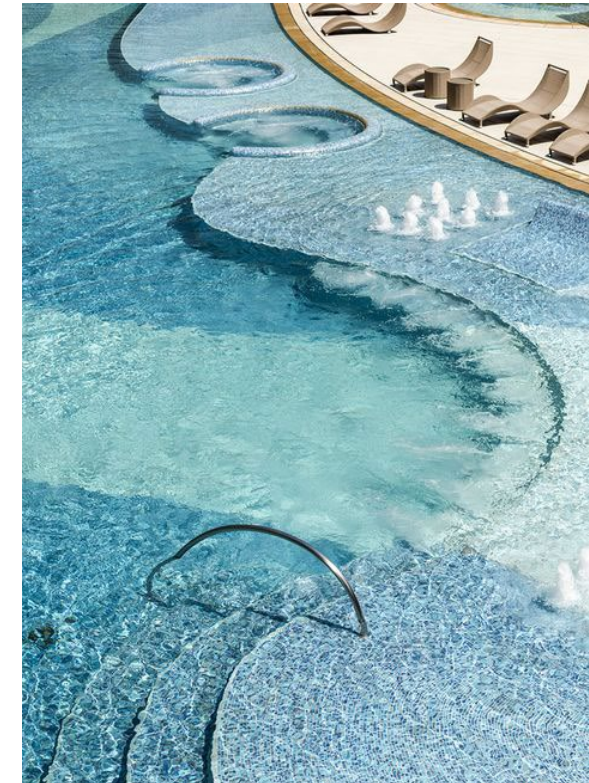
Proposed Character Images - Central Lagoon

central lagoon

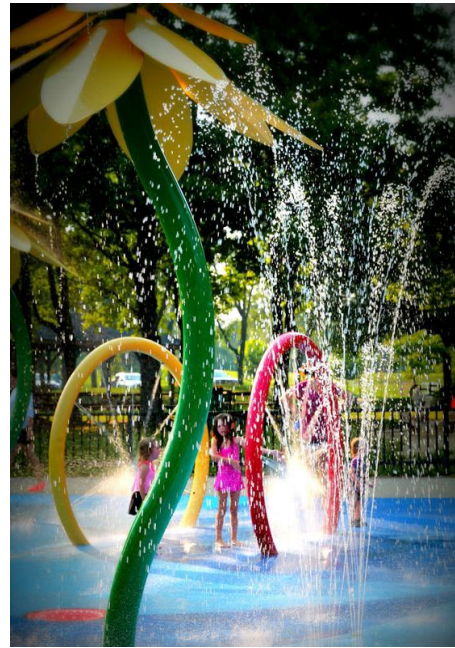


Proposed Character Images - Central Lagoon

kids pool



kids pool



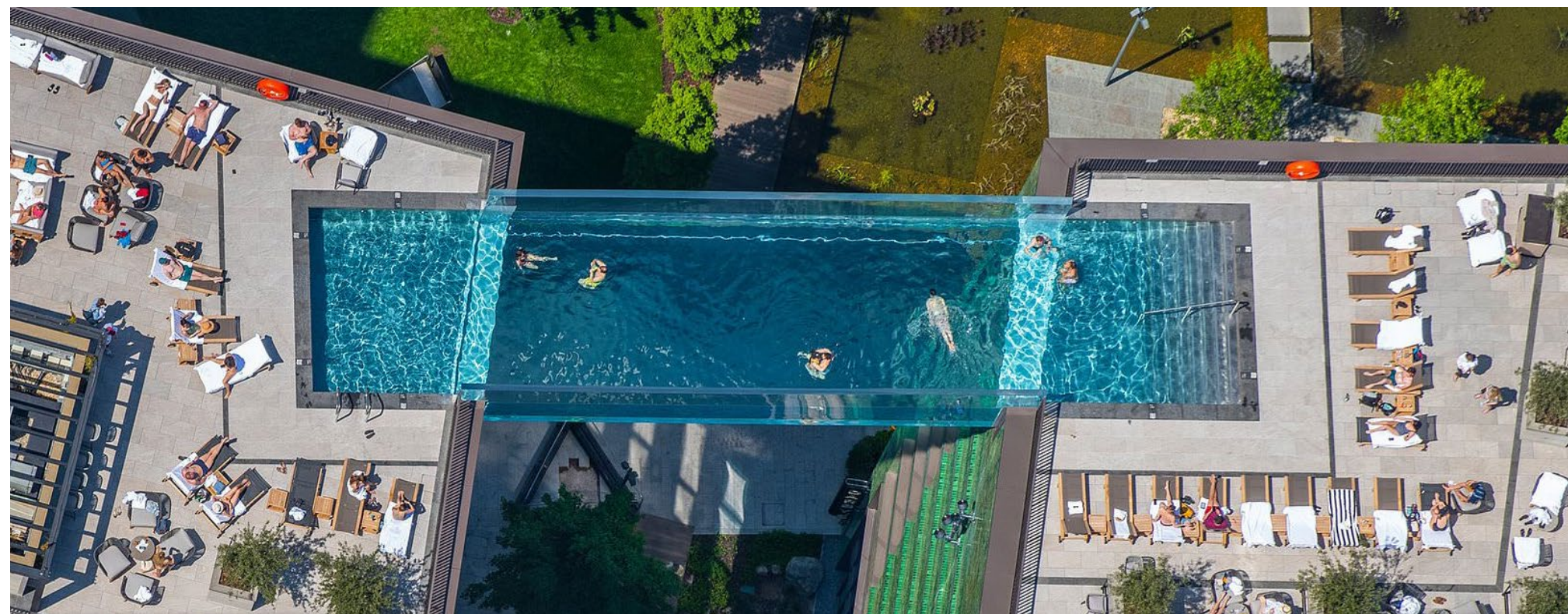
private homes



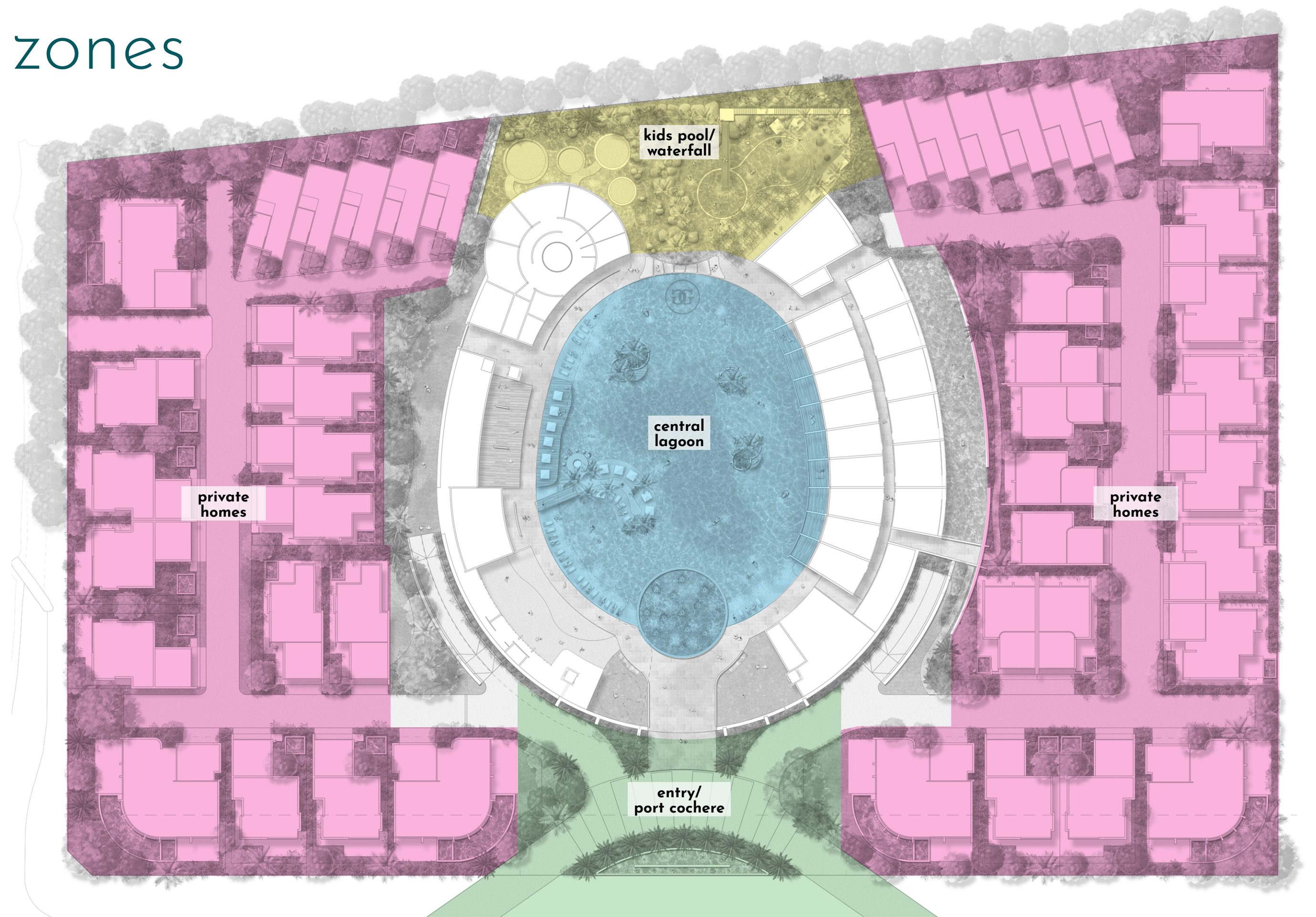
waterfall



level 2 pool



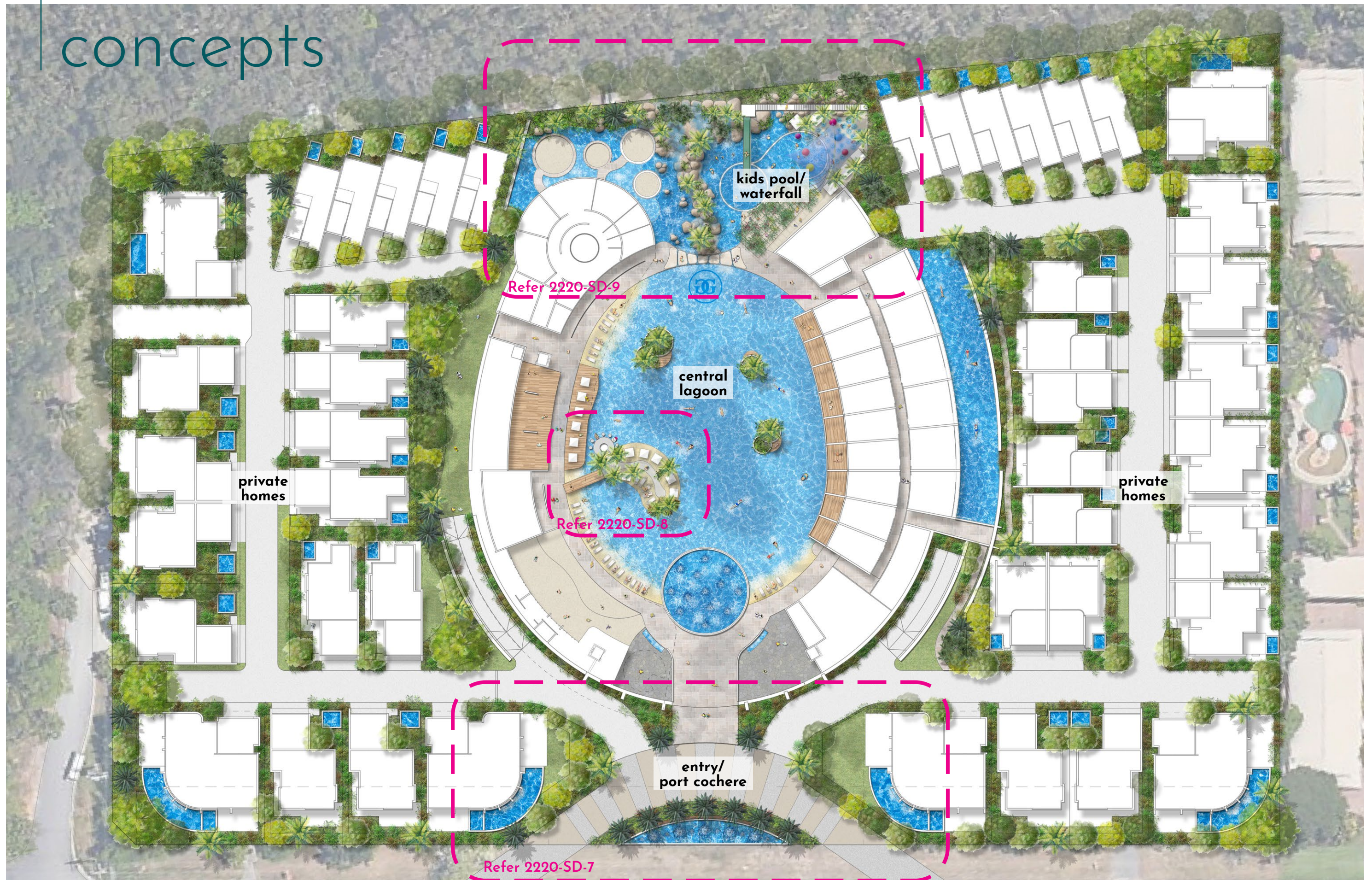
zones





concepts

concepts



concepts

LEGEND

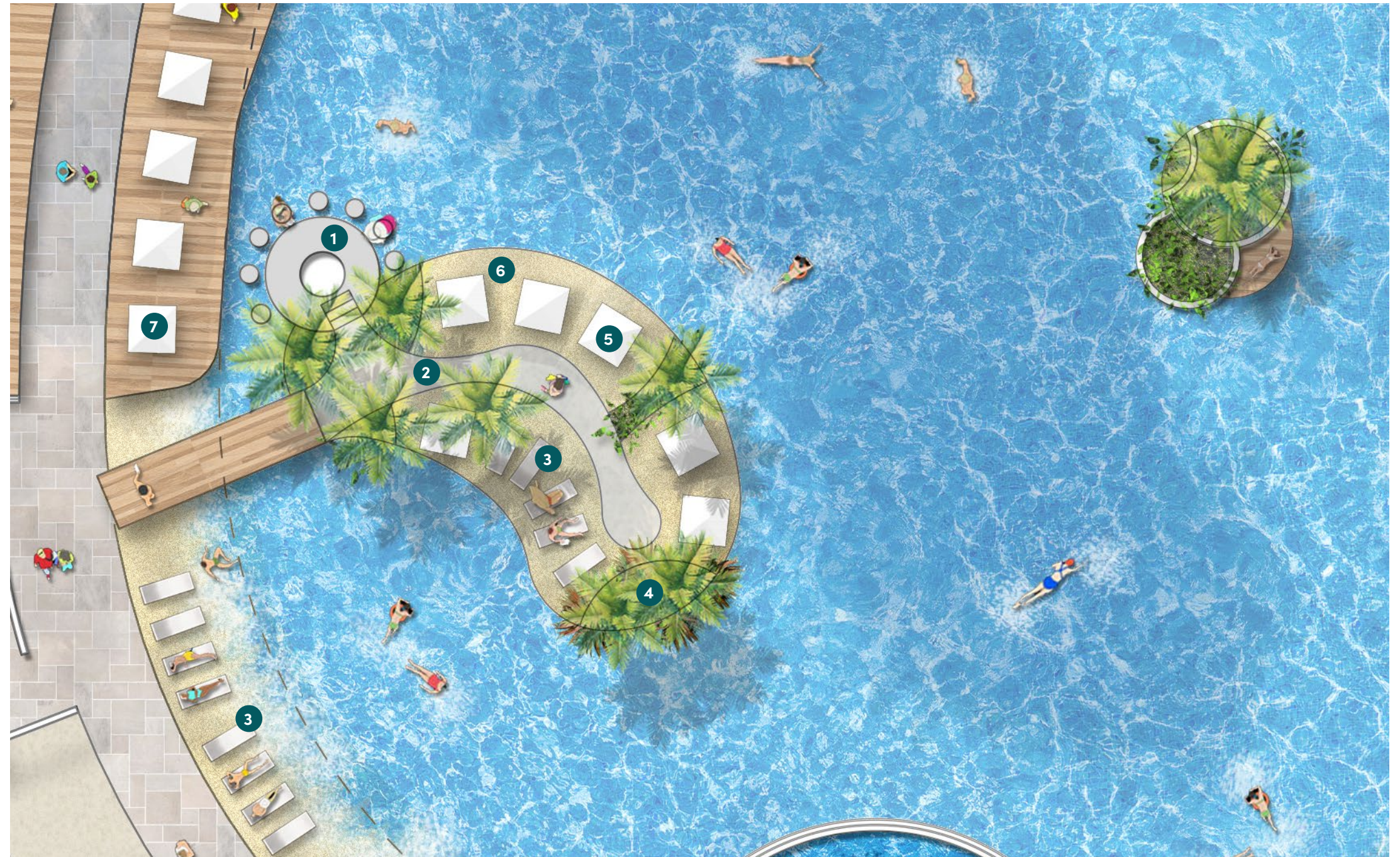
- 1 Feature stone paving to entry
- 2 Feature palms (with uplighting)
- 3 Dense shrubs and small trees screening fence
- 4 Stone faced entry feature to back of water feature (with uplighting)
- 5 Palms on banding over low colourful groundcovers (with uplighting)
- 6 Low bubblers (500mm high) with uplighting
- 7 Feature fountain (1.5-2m high) with uplighting
- 8 Feature banding



concepts

LEGEND

- 1 Pool bar with steps down
- 2 Access path
- 3 Sun lounges
- 4 Palms in understorey planting
- 5 Cabanas/ day beds
- 6 Sand
- 7 Shade structure with outdoor dining



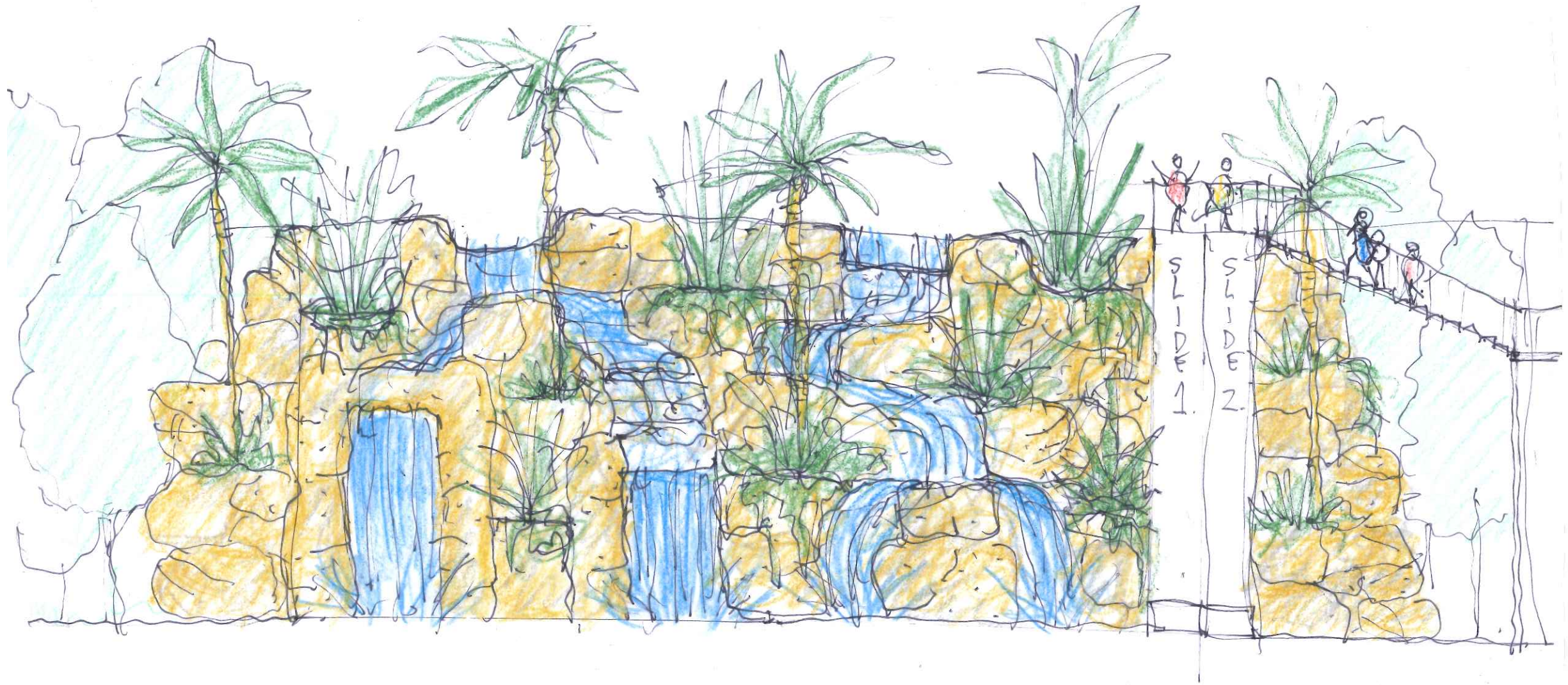
concepts

LEGEND

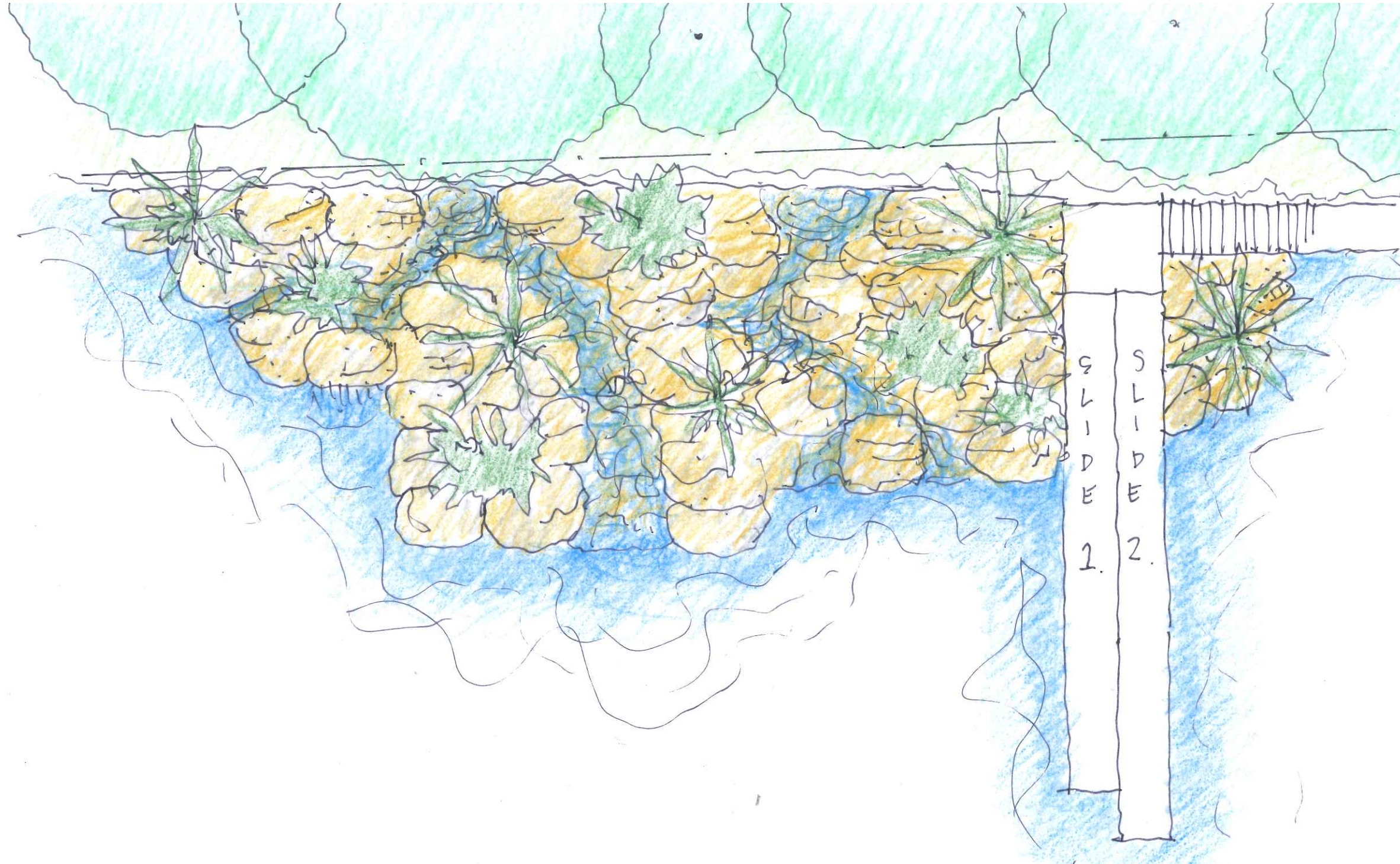
- 1 Existing vegetation to be retained
- 2 Waterfall/ rock feature with pockets of planting
- 3 Kids pool
- 4 Feature slide
- 5 Pop-jet plaza continuing into pool
- 6 Water play elements
- 7 Stairs up to slide
- 8 Shade sail
- 9 Planted arbour structure with tropical vine species
- 10 Shade structures/ cabanas
- 11 Dense lush vegetation



concepts



concepts



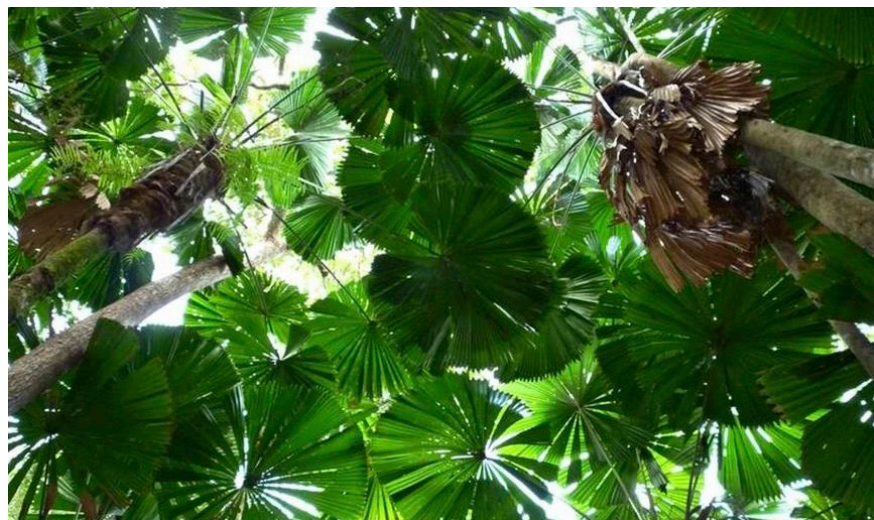
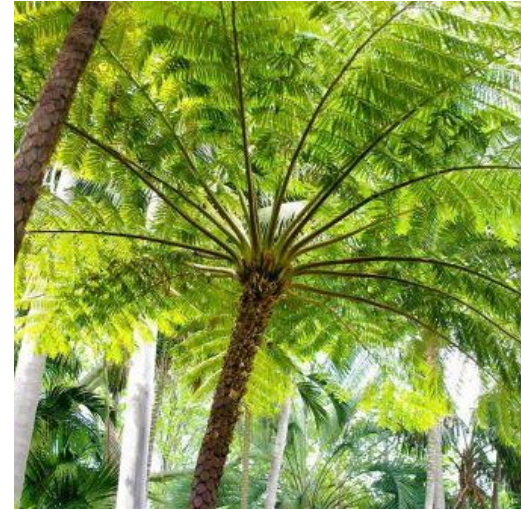


plant palette

trees



palms & ferns



shrubs



groundcovers & climbers



species

CODE	SPECIES	COMMON NAME
Street Trees		
ATR fit	ATRACTOCARPUS fitzalanii	Brown Gardenia
CUP ana	CUPANIOPSIS anacardioides	Tuckeroo
BAR cal	BARRINGTONIA calyprata	Mango Pine
CAL ino	CALLOPHYLLUM inophyllum	Beach Callophyllum
CAS equ	CASUARINA equisetifolia	Beach She Oak
DEP tet	DEPLANCHEA tetraphylla	Gold Bouquet Tree
DIL ala	DILLENIA alata	Red Beach
FIC ben	FICUS benjamina	Weeping Fig
HYM fla	HYMENOSPORUM flavum	Native Frangipani
MAN len	MANILTOA lenticellata	Cascading Bean
MEL dea	MELALEUCA dealbata	Red Tea Tree
MEL leu	MELALEUCA leucadendra	Tea Tree
NAU ori	NAUCLEA orientalis	Leichardt Tree
PEL pte	PELTOPHORUM pterocarpum	Yellow Poinciana
PLU obt	PLUMERIA obtusa	Evergreen Frangipani
PTE ind	PTEROCARPUS indicus	indian Padauk
STE sin	STENOCARPUS sinuatus	Wheel of Fire
SYZ lue	SYZYGIVM luehmannii	Cherry Satinash
XAN chr	XANTHOSTEMON chrysanthus	Golden Penda
Palms/ Ferns		
ARC ale	ARCHONTOPHOENIX alexandrae	Alexandra Palm
BEC fen	BECCARIOPHOENIX fenestralis	Windowpane Palm
CYA coo	CYATHEA cooperii	Tree Fern
CYC tho	CYCAS thourasii	Madagascar Sago
HYO lad	HYOPHORBE lagenicaulis	Bottle Palm
LEP hop	LEPIDOZAMIA hopei	Zamia Palm
LIC ram	LICUALA ramsayii	Fan Palm
LIV mue	LICVISTONA muelleri	Dwarf Fan Palm
PAN bap	PANDANUS baptistii	Gold Striped Screw Pine
PAN tec	PANDANUS tectorius	Screw Palm
PTY	PTYCOSPERMA macarthurii	Macarthur Palm

CODE	SPECIES	COMMON NAME
Shrubs		
ALO ama	ALOCASIA amazonica	Elephant's Ear Plant
ALO bri	ALOCASIA brisbenensis	Cunjevoi Lily
ALP cae	ALPINIA caerulea	Native Ginger
ALP cae	ALPINIA caerulea	Red Back Native Ginger
ALP pur	ALPINIA purpurea	Red Ginger
HEL kaw	HELICONIA kawauchi	
HEL psi	HELICONIA psittocorum	Parrot Heliconia
HEL ros	HELICONIA rostrata	Hanging Lobster Claw
MON del	MONSTERA deliciosa	Swiss Cheese Plant
PHI bur	PHILODENDRON 'burle marxii'	Burle Marx Philodendron
PHI glo	PHILODENDRON gloriosum	Gloriosum
PHI xan	PHILODENDRON xanadu	Xanadu
PHI sel	PHILODENDRON selloum	Hope
PHY mul	PHYLLANTHUS multiflorus	Waterfall Plant
RHA exc	RHAPIS excelsa	Bamboo Palm
STE nic	STRELITZIA nicolai	Natal Wild Banana
ZIN gol	ZINGIBER spectabile	Golden Beehive Ginger
ZIN red	ZINGIBER spectabile	Red Beehive Ginger
ZAM fur	ZAMIA furfuracea	Cardboard Palm
Groundcovers		
AGL var	AGLAONEMA various	Chinese Evergreen
BRO var	BROMELIAD various	Bromeliad
DAV fej	DAVALLIA fejeensis	Rabbit's Foot Fern
GEO ins	GOEPPERTIA insignis	Rattle Snake Plant
LIR mus	LIRIOPE muscari	Evergreen Giant
NEO gra	NEOMARICA gracilis	Walking Iris
HYM lit	HYMENOCALLIS littoralis	Spider lily
LOM lon	LOMANDRA longifolia	Spiny-headed Mat Rush
STR mac	STRONGYLODON macrobotrys	Jade Vine
TEC hil	TECOMANTHE hillii	Fraser Island Creeper
THU mys	THUNBERGIA mysorensis	Lady's Slipper Vine
ZAM zam	ZAMIOCULCUS zamiifolia	Zanzibar Gem

ASdesign

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Attachment 4

Planning Report



DEVELOPMENT & PROPERTY SERVICES

*KELLY REASTON DEVELOPMENT
& PROPERTY SERVICES*

PLANNING REPORT

SEPTEMBER 2023



Combined application Material Change of
Use for Resort Complex, Short Term
Accommodation, Multiple Dwellings, and
Reconfiguring a Lot

97- 113 Davidson Street, Port Douglas

PREPARED FOR

*DAVIDSON STREET PORT
DOUGLAS DEVELOPMENTS
PTY LTD*

Contact

Kelly Reaston

Director

kelly@kellyreaston.com.au

This document has been prepared and reviewed by:



Kelly Reaston



Bruce Gardiner

This report has been prepared relying on information that was current at the time of preparation. The material within this report has been prepared for our client and is for the purpose of statutory assessment by the relevant Local Authority.

The material should not be relied upon by any third parties or for any other purpose outside the intended scope without consulting the authors.

VERSION NO.	DATE:	REVIEWED BY:	APPROVED BY:
1	May 2023	Kelly Reaston	
2	August 2023	Kelly Reaston	
3	14 September 2023	Kelly Reaston	



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1. EXECUTIVE SUMMARY

The Port Douglas Daintree Destination Tourism Plan 2025 recently identified a lack of 4 and 5 star accommodation options as being a key constraint to the growth of tourism in the Shire. The plan further highlights that COVID-era consumers have an acute awareness of all things health and wellbeing and have come to expect experiences that respond in kind. The Davidson by GURNER™ represents a timely response to these issues from a collective of the best minds in design, delivery and operation, who aim to be the world's leading aspirational lifestyle and design brand, creating world-class spaces where people can live their best lives.

Inspired by global cities and beautiful places, GURNER™ delivers intuitive design, unrivalled amenity and curated communities. Every step is meticulously considered, from site acquisition to concept and space design, and from construction to delivery. GURNER™ demonstrates superior attention to detail and distinctive style, always efficient and timeless. From considered layouts to quality materials, fixtures and finishes, GURNER™ properties exude warmth and elegance in equal measure and create true comfort in enviable locations.

The application seeks approval for the following over land situated at 97, 107, 109-111 and 113 Davidson Street, described as Lots 1 and 2 on RP723702 and Lots 3 and 4 on RP909815 (the site):

1. Development Permit for a Material Change of Use for “Resort Complex” (112 rooms, restaurants and bars, and guest facilities);
2. Development Permit for a Material Change of Use for “Multiple dwellings” and “Short-term Accommodation” (44 villas); and
3. Development Permit for Reconfiguring a Lot (4 Lots into 45 Community Title Lots + Common Property).

The titles comprising the development site currently host backpacker accommodation (Dougie's Backpackers) and a caravan park (Pandanus Tourist Park) and under the Douglas Shire Planning Scheme 2018 (V1) the site is located in the Tourist Accommodation Zone. The site has a combined area of 2.59 ha and is located approximately 1.4km from Macrossan Street and approximately 4km from the Captain Cook Highway on the western side of Port Douglas Road. The site was selected as it was large enough to support the scale of development required for a premium tourism offering whilst being highly visible from Port Douglas Road and conveniently located with respect to Macrossan Street, the iconic Four Mile Beach and the Crystalbrook Superyacht Marina.

In compiling this application package, Davidson Street Port Douglas Developments Pty Ltd (the Applicant) engaged a specialist team of engineers, architects, and environmental scientists to prepare the following plans and reports:

- Architectural and Landscaping Plans (Hunt Design / AS Design – **Attachment 3**)
- Engineering Assessment Report (Applin Consulting – **Attachment 5**)
- Traffic Impact Assessment (GHD – **Attachment 6**)
- Geotechnical Report (GEO Design – **Attachment 7**)
- Flood Study (JBP Engineers and Scientists - **Attachment 8**)
- Hydraulic Design Report (H2O Consultants – **Attachment 9**)
- Electrical Report (Hopkins Consulting Engineers – **Attachment 10**)

Whilst some of the issues addressed by the reporting may be subject to further investigation and detailed design at the operational works phase of the project, the application package substantially demonstrates that the development can be efficiently serviced by the existing network of trunk infrastructure without compromising Council's desired standards of service and without impacting upon local amenity or environmental values.

As the proposal is impact assessable and supported by relevant assessment benchmarks of the Douglas Shire Planning Scheme 2018 (V1), Council is able to readily approve the proposal, subject to reasonable and relevant conditions.

2. APPLICATION DETAILS

2.1 Application Summary

Table 1: Application Summary

Approval Sought	<ol style="list-style-type: none"> 1. Development Permit for a Material Change of Use for "Resort Complex" (112 rooms, restaurants and bars, and guest facilities); 2. Development Permit for a Material Change of Use for "Multiple dwellings" and "Short-term Accommodation" (44 villas); and 3. Development Permit for Reconfiguring a Lot (4 Lots into 45 Community Title Lots + Common Property).
Applicant	Davidson Street Port Douglas Developments Pty Ltd
Assessment Details	
Assessment Manager	Douglas Shire Council
Development Category	Assessable development
Assessment level	Impact assessable
Public Notification	N/A
Relevant State Planning Instruments	
Legislation	<i>Planning Act 2016</i> (Qld)
Planning Policy	State Planning Policy (July 2017)
Relevant Local Planning Instruments	
Planning Scheme	Douglas Shire Planning Scheme 2018 (V1)
Local Plan	Port Douglas/Craigie (Port Douglas/Craigie Local Plan Code)
Local Plan Precinct	N/A
Zone	Tourist Accommodation
Zone Precinct	N/A
Overlays	8.2.1 - Acid sulfate soils overlay code 8.2.3 - Coastal environment overlay code 8.2.4 - Flood and storm tide hazard overlay code 8.2.6 - Landscape values overlay code 8.2.10 - Transport network overlay code
Development Codes	6.2.1.4 - Tourist accommodation zone code 7.2.4 - Port Douglas/Craigie local plan code 9.3.3 - Centre activities code 9.3.13 - Multiple dwelling, short term accommodation code & retirement facility code

	9.4.1 - Access, parking and servicing code 9.4.3 - Environmental performance code 9.4.4 - Filling and excavation code 9.4.5 - Infrastructure works code 9.4.6 - Landscaping code 9.4.7 - Reconfiguration of a lot code 9.4.9 - Vegetation management code
Referral Triggers	<ol style="list-style-type: none"> 1. <i>Planning Regulation 2017</i>, Schedule 10, Part 9, Division 2, Table 1 - Reconfiguring a lot subject to an easement or near a substation site. 2. <i>Planning Regulation 2017</i>, Schedule 10, Part 9, Division 2, Table 2 - Material change of use of premises near a substation site or subject to an easement. 3. <i>Planning Regulation 2017</i>, Schedule 10, Part 9, Division 4, Subdivision 1, Table 1 – Aspect of development stated in schedule 20. 4. <i>Planning Regulation 2017</i>, Schedule 10, Part 9, Division 4, Subdivision 2, Table 1 – Reconfiguring a lot near a State transport corridor. 5. <i>Planning Regulation 2017</i>, Schedule 10, Part 9, Division 4, Subdivision 2, Table 3 – Reconfiguring a lot near a State-controlled road intersection. 6. <i>Planning Regulation 2017</i>, Schedule 10, Part 9, Division 4, Subdivision 2, Table 4 – Material change of use of a premises near a State transport corridor or that is a future State transport corridor.

2.2 Supporting Documentation

Table 2: Supporting Documentation

Document	Company	Reference	Issue	Date
Planning Report	KRDPS	Gurner	2	August 2023
Architectural Report	Hunt Design	HD ARCH REPORT_GURNER PD02	2	13 September 2023
Engineering Assessment Report	Applin Consulting	23001 PORT DOUGLAS BY GURNER	-	16 August 2023
Traffic Impact Assessment	GHD	12601184	-	15 August 2023
Geotechnical Investigation	GEO Design	23003AA-D-R01	01	27 April 2023
Hydraulic Report (Flood Study)	JBP Scientists and Engineers	2023S0094-JBAP- 00-00-RP-C-0001- S0-P01.03	-	24 April 2023

Hydraulic Design Report	H2O Consultants	23008	B	20 April 2023
Electrical DA Report	Hopkins Consulting Engineers	J000144-ME-DA-RPT-DAVIDSON	C	24 April 2023

2.3 Plans of Development

Table 3: Plans of Development

Drawing	Company	Drawing No.	Issue	Date
Context	Hunt Design	DA2.1-DA2.4	01	13 September 2023
DA Plans	Hunt Design	DA3.1-3.11	01	13 September 2023
Elevations	Hunt Design	DA4.1 -4.2	01	13 September 2023
DA Site Sections	Hunt Design	DA5.1	01	13 September 2023
Residences	Hunt Design	DA6.1-DA6.7	01	13 September 2023
Schedules	Hunt Design	DA7.1-DA7.3	01	13 September 2023
Landscape Plans	AS Design	2220-SD-0 - 2220-SD-26	01	17 April 2023

Plans of Development are provided as **Attachment 3**.

3. SITE AND SURROUNDS

3.1 Site Description

Table 4: Site Description

Registered Landowners	Pandanus Port Douglas Pty Ltd ACN 656 796 342
Site Location	97, 107, 109-111 and 113 Davidson Street Port Douglas QLD
Real Property Description	Lots 1 and 2 on RP723702 Lots 3 and 4 on RP909815
Site Area	Lot 1 on RP723702 – 9,131m ² Lot 2 on RP723702 – 8,650m ² Lot 3 on RP909815 – 6,703m ² Lot 4 on RP909815 – 1,470m ² Total combined – 2.59 Ha
Street Frontage (Approx.)	Lot 1 on RP723702 – 66m to Davidson Street, 66m to Railway Service Lane. Lot 2 on RP723702 – 67m to Davidson Street, 66m to Railway Service Lane. Lot 3 on RP909815 – 39m to Davidson Street, 63m to Crimmins Street, 67m to Railway Service Lane. Lot 4 on RP909815 – 52m to Crimmins Street, 30m to Davidson Street.

Tenure	Freehold
Easements/Encumbrances	Easement A on RP860992 – 18m ² (Ergon pad-mounted transformer)
Local Government Authority	Douglas Shire Council

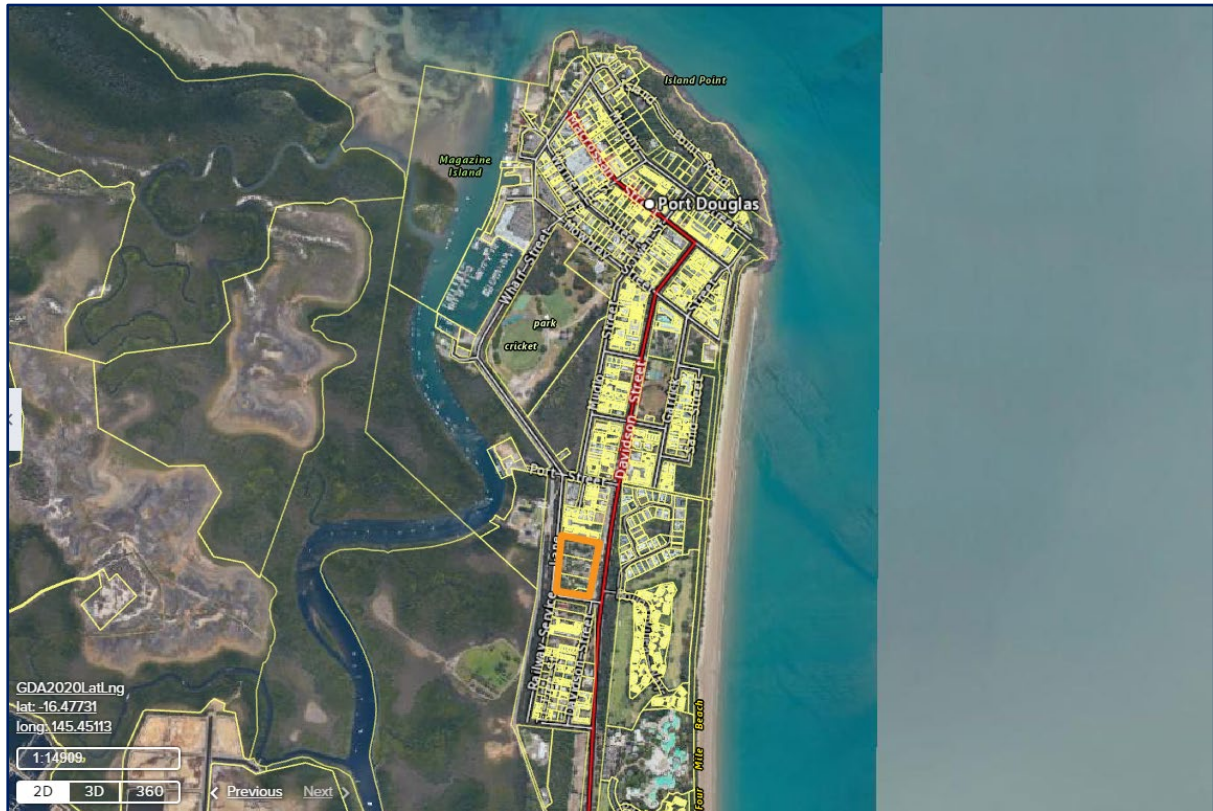


Figure 1a - Site Location (Source: Queensland Globe 2022)



Figure 1b - Site Location (Source: Queensland Globe 2022)

3.2 Site Analysis

Table 5: Site Analysis

Current Uses	Caravan Park / Tourist Accommodation (Backpackers)
Topography	The site is relatively flat, sloping gradually from east to west at less than 15% grade.
Waterways	There are no waterways traversing the site.
Vegetation	The site is clear of regulated native vegetation, only landscape plantings are present.
Landslip	The site is not subject to the Potential landslide hazard overlay code.
EMR/CLR	The site is not registered on either the EMR or CLR
Heritage Places	The site is not on, or adjacent to, a local or State heritage place.

3.3 Site Photos



Figure 2 – Davidson Street (Service Road) Crimmins Street intersection



Figure 3 – Shared cycle/pedestrian path between Davidson Street (Service Road) and Davidson Street



Figure 4 –Davidson Street (Service Road) Frontage



Figure 5 –Crimmins Street – formed road



Figure6 –Crimmins Street – unsealed section

3.4 Infrastructure and Services

Table 6: Infrastructure and Services

Access	<p>The site has frontage to Davidson Street (east), Crimmins Street (south) and a Railway Service Lane (west). Davidson and Crimmins Streets are sealed, Council-controlled, roads albeit that Davidson Street falls within the boundaries of the State-controlled corridor. Crimmins Street is only partially constructed for approximately 60m from the Davidson Street intersection. The Railway Service Lane is an unformed road and is not captured by Council's road hierarchy. A one-way ingress/egress driveway is proposed to service the hotel's reception porte cochere with internal driveways facilitating access to the hotel carpark and villas. The ingress crossover would be located approximately 65m north of the Davidson Street-Crimmins Street intersection and the egress crossover approximately 130m from the intersection. The Crimmins Street seal is proposed to be extended by approximately 25m to facilitate a separate service vehicle access, to be located approximately 85m east of the Davidson Street intersection. No direct vehicle access is proposed from the Railway Service Lane, nor would the proposed CTS lots have direct access to the external road network. Please refer to the Traffic Impact Assessment provided as Attachment 6 for further details.</p>
Water Supply	<p>Council water supply infrastructure is available in the Davidson Street road reserve, including 150dia and 450dia trunk</p>

	mains. Water supply will be achieved via a single connection point, which will be appropriately sized by the hydraulic consultant at the detailed design phase of the project. Please refer to the Engineering Assessment Report and Hydraulic Design Report provided as Attachment 5 and Attachment 9 for further details.
Wastewater	Council sewerage infrastructure is available. A 150dia gravity main is located within the boundaries of the site running on non-standard alignment roughly parallel to the western site frontage. It is proposed that the relevant section of gravity main be abandoned and relocated to the adjacent road reserve as shown by the civil designs provided. Sewerage infrastructure would discharge to the existing manhole and pump station located adjacent to the south-western corner of the site in the Crimmins Street Road reserve. Please refer to the Engineering Assessment Report and Hydraulic Design Report provided as Attachment 5 and Attachment 9 for further details.
Stormwater	The site currently discharges run-off to the western and southern road reserves primarily via overland flow. Upright kerb and channel extends for the full length of the Davidson Street frontage and for the constructed section of Crimmins Street. A stormwater pit is located where the constructed section of Crimmins Street terminates which connects a table drain on the southern side of the road before discharging to the drainage feature to the west. It is proposed that the internal drainage system discharge to the pit in Crimmins Street and that 3 additional piped outlets be installed in the western road reserve, discharging directly to the mapped drainage feature. All outlets are proposed to be fitted with Gross Pollutant Traps. As the ultimate point of discharge does not require post-development flows to be directed via the urban stormwater network in a way that might result in worsening impacts on downstream properties, on-site detention measures are not proposed. Please refer to the Engineering Assessment Report provided as Attachment 5 for further details.
Electricity	Overhead electricity services are located in the Davidson and Crimmins Street road reserves. Lot 4 on RP909815 contains an Ergon pad-mounted transformer under easement (Easement A on RP860992) accessible via Crimmins Street. Please refer to the Electrical DA Report provided as Attachment 10 for further details.
Telecommunications	Telecommunications services are located in the Davidson Street road reserve. Please refer to the Electrical DA Report provided as Attachment 10 for further details.

4. DEVELOPMENT BACKGROUND

4.1 Site Context

The site has a combined area of 2.59 ha and is located approximately 1.4km from the Port Douglas town centre and approximately 4km from the Captain Cook Highway on the western side of Port Douglas Road. The site was selected due to it being large enough to support a scale of

development befitting a premium tourism offering whilst being highly visible from Port Douglas Road and conveniently located with respect to Macrossan Street, the iconic Four Mile Beach and the Crystalbrook Superyacht Marina.

Lots 1 and 2 on RP723702 are currently utilised as a backpackers (Dougie’s Backpackers) with accommodation provided for up to 126 guests and 2 managers in bunkhouses and camp sites. Lots 3 and 4 on RP909815 currently host a caravan park (Pandanus Tourist Park) comprising 15 tourist cabins, 103 camp sites (caravans and tents), a 3-bedroom dwelling and ancillary amenities/facilities. In total, the caravan park has a capacity of 271 persons.

To north and south, the area is characterised by established permanent residential/tourist accommodation uses comprising a mix of single detached and apartment-style accommodation. A small number of Centre-zoned lots are located adjacent to the intersection of Davidson Street and Port Street, which host food and drink outlets (Han Court and Bam Pow restaurants), a solicitor’s office, a bottle-shop and a laundromat. To the east of Port Douglas Road, the site is located opposite the Sheraton Grand Mirage Resort. To the west of the site is the Bally Hooley rail line, the Port Douglas Sewerage Treatment Plant and Packers Creek.

4.2 Application Fee

In accordance with Council’s Schedule of Fees for the 2022/23 Financial Year and the Action Notice issued by Council and dated 20 June 2023, the application fees have been calculated to be **\$88,963.00**.

5. DEVELOPMENT PROPOSAL

5.1 General Description

The application seeks approval for the following:

1. Development Permit for a Material Change of Use for “Resort Complex” (112 rooms, restaurants and bars, and guest facilities);
2. Development Permit for a Material Change of Use for “Multiple dwellings” and “Short-term Accommodation” (44 villas); and
3. Development Permit for Reconfiguring a Lot (4 Lots into 45 Community Title Lots + Common Property).

As detailed by the architectural package provided at **Attachment 3**, the development would comprise the elements summarised by Table 7.

Table 7: Application Elements

Application Component	Key Features
Component 1: Development Permit for a Material Change of Use for “Resort Complex” (112 rooms, restaurants and bars, and guest facilities)	<ul style="list-style-type: none"> • 6 aquarium suites across 2 levels (approx. 83m² plus balcony) • 30 garden suites across 2 levels (approx. 40m² each plus balcony) • 57 poolside suites across 3 levels (approx. 45m² each plus balcony) • 16 north suites across 2 levels (approx. 35m² each plus balcony)

Application Component	Key Features
	<ul style="list-style-type: none"> • 2 luxury poolside suites (approx. 67m² each plus balcony) • 1 swimout suite (approx. 40m² plus balcony) • Administration, reception and office areas • Café, Kitchens, and Restaurants (592m²) • Kids Club • Pool deck and pool areas • Childrens' play area • Wellness facilities • Guest/Staff amenities • Garden and terrace areas • Basement level car parking for 99 standard vehicles • Back of house delivery dock
<p>Component 2: Development Permit for a Material Change of Use for "Multiple dwellings" and "Short-term Accommodation" (44 villas)</p>	<ul style="list-style-type: none"> • Forty-four (44) Villas comprising 7 Villa Types • Four (4) Type 0 Villas (251m²) • Ten (10) Type 1 Villas (152m²) • Six (6) Type 2 Villas (158m²) • Eleven (11) Type 3 Villas (94m²) • Six (6) Type 4 Villas (170m²) • Seven (7) Type 5 Villas (111m²) • One (1) Type 6 Villa (201m²) • Type 0 and Type 4 Villas comprise 4 bedrooms, all other Villa Types comprise 3 bedrooms • Type 3 Villas include single-car garages (with the capacity for tandem parking, all other Villa Types include double car garages) • Sealed internal roads • Piped internal drainage system • Internal landscaping throughout • Frontage landscaping and boundary fencing
<p>Component 3: Development Permit for Reconfiguring a Lot (4 Lots into 45 Community Title Lots + Common Property).</p>	<ul style="list-style-type: none"> • Layered Community Title Scheme whereby the central accommodation and ancillary facilities will be under a dedicated Body Corporate and the villa allotments will be managed under a separate Body Corporate • Forty-four (44) Villa CTS lots ranging in area from 155m² to 608m² • 7,332m² central Resort Complex CTS lot • Common property

5.2 Proposal Details

The key details of the proposal are summarised by Table 8.

Table 8: Proposal Details

Building Height	MCU Component 1 – Resort Complex: 13m MCU Component 2 – Multiple dwellings/Short-term Accommodation: 6.3-6.77m
Gross Floor Area	MCU Component 1 – Resort Complex: 17,760m ² MCU Component 2 – Multiple dwellings/Short-term Accommodation: 6,504m ²
Total Site Cover	40.53% (Excluding pools)
Car parking	MCU Component 1 – Resort Complex: 99 standard car spaces, 14 motorbike spaces and 30 bicycle spaces MCU Component 2 – Multiple dwellings/Short-term Accommodation: 88 standard car spaces (combined total)
Landscaping	The site will be landscaped in generally as indicated by the package provided as Attachment 3 . Over 35% of the site consists of garden areas, parkland, or water bodies which form part of the hard landscaping.
Setbacks	A detailed setback plan is provided at Attachment 3 . The setbacks are as follows: <ul style="list-style-type: none">• Davidson Street Frontage – 6m – 23.6m• Crimmins Street Frontage – 4m – 4.5m• Rear Boundary – 3.3m – 6.8m• Side boundary – 1m – 3.8m.
Access Locations	A one-way ingress/egress driveway is proposed to service the hotel's reception porte cochere with internal driveways facilitating access to the hotel carpark and villas therefrom. The ingress crossover would be located approximately 65m north of the Davidson Street-Crimmins Street intersection and the egress crossover approximately 130m from the intersection. The Crimmins Street seal is proposed to be extended by approximately 25m to facilitate a separate service vehicle access, to be located approximately 85m east of the Davidson Street intersection. No direct vehicle access is proposed from the Railway Service Lane, nor would the proposed CTS lots have direct access to the external road network.
Infrastructure	The site is able to be connected to all critical infrastructure services including water, sewerage, telecommunications, electricity, and stormwater. All stormwater will be directed to a lawful point of discharge. There are no known infrastructure capacity constraints. Please refer to the Engineering Assessment Report provided as Attachment 5 for further details.

5.3 Summary of Supporting Documentation

Table 9: Summary of Supporting Documentation

Supporting Document	Summary
Architectural and Landscaping Plans (Hunt Design / AS Design – Attachment 3)	<p>The architectural and landscaping themes underpinning the project reflect the town’s transition more broadly from what began with more ridged interpretations of Queensland’s Tropical vernacular to one befitting of contemporary high-end trends manifesting internationally. That said, it is no less critical that this approach be responsive to regional climatic and environmental factors. In essence, the primary design considerations can be summarised as:</p> <ul style="list-style-type: none"> • Shelter: protection from the sun and rain. • Comfort: capture breezes, minimise re-radiated heat, low thermal conductivity building fabric. • Lifestyle: alfresco living, access to activities, seamless interior and exterior spaces. • Tropical Landscape: rich tropical landscaping dominating the open spaces and reflecting the nearby natural environment. • Materials Palette: derived from local materials where possible. <p>A conscious decision of the designers was to have simple forms, fine lines in elevation, high visual permeability and simple roof forms that fade into the background such that the façades are highly articulated and expressive of the material choices and finishes. This approach also factors in the framing and screening effect of the landscaped elements. The result is a development that, when viewed from any vantage point, will sit comfortably within its surrounds and positively contribute towards the streetscape.</p> <p>Holistically, the built forms, set within their surrounding landscaped gardens, will continue the legacy of Port Douglas as a place that celebrates the tropical environment and lifestyle.</p>
Engineering Assessment Report (Applin Consulting – Attachment 5)	<p>Principally, the Engineering Assessment Report concludes that:</p> <ul style="list-style-type: none"> • The perimeter retaining wall will generally have a height of less than 1.5m where visible to the general public (i.e. northern, eastern and southern boundaries). • Retaining walls exceeding 1m in height will be RPEQ certified. • Erosion and sediment control can easily be managed at the operations works phase of the project, given that the site is relatively flat and there are no external flow paths through it. • The development will have a negligible impact on the external traffic catchment and internal vehicle swept paths are acceptable as per the findings of the Traffic Impact Assessment.

Supporting Document	Summary
	<ul style="list-style-type: none"> • Despite an increase in post-development stormwater discharge from the site, on-site detention measures are not warranted given that the site is directly adjacent to a tidal area. • Stormwater discharge outlets will be fitted with quality control devices in compliance with the relevant nutrient/pollutant reduction standards. • The proposed realigned sewer will be constructed at the same depth and grades as the existing main so as not to compromise the pre-development capacity of the infrastructure. • No upgrades to external sewerage infrastructure are necessitated by the development. • Water supply will be achieved via a single connection point, which will be appropriately sized by the hydraulic consultant at the detailed design phase of the project. • Villa allotments proposed to be individually metered. • No upgrades to external water supply infrastructure are necessitated by the development.
Traffic Impact Assessment (GHD – Attachment 6)	The Traffic Impact Assessment compares pre and post development scenarios and concludes that the development will have a negligible impact on the safety and efficiency of the State and Council controlled road networks. Traffic patterns associated with the proposed development are expected to be similar to the existing situation as the current and proposed land uses do not differ significantly in terms of their potential traffic generation.
Geotechnical Investigation (GEO Design – Attachment 7)	The Geotechnical Investigation report notes that bulk excavation works outside the basement and pool areas are expected to be minimal, with only about 20,000t of soil is to be excavated. No alteration to the permanent water table is anticipated as a result of the proposed works and while some test results indicated that the upper sands and fills are slightly PASS (Potential Acid Sulphate Soils), these were found to be below the guideline criteria for action. The proposed placement of fill is not expected to result in disturbance to the local groundwater regime, expunge additional acid generating material or result in exposure of PASS materials that would lead to the generation of associated acidic soils or groundwaters. Any treatment of PASS will be in accordance with a management plan, prepared in accordance with the <i>Queensland Acid Sulphate Soil Technical Manual: Soil Management Guidelines</i> and based on site testing as excavation works progress.
Flood Study (JBP Engineers and Scientists – Attachment 8)	The Flood Study investigates the proposed development's vulnerability to flooding and storm tide inundation and investigates the impact the development might have on surrounding properties by way of hydrological analysis, hydraulic modelling and storm tide assessment. Maps of flood depth and water level were produced for the undeveloped, developed and 2100 climate case. The flood mapping showed that the proposed extent of the site was not

Supporting Document	Summary
	impacted by flood waters for any of the modelled cases. Storm tide maps also indicate that storm tide flooding would not reach the site for the current and 2100 climate. An afflux map was created that compared the existing and developed case. The afflux map indicated no change, meaning that surrounding properties would not be adversely impacted by the development.
Hydraulic Design Report (H2O Consultants – Attachment 9)	<p>The Hydraulic Design Report considers sewerage, water, and stormwater reticulation, fire services and swimming pools. Essentially the report concludes that:</p> <ul style="list-style-type: none"> • The existing 150dia gravity-fed sewer main servicing the site has sufficient capacity to accommodate the anticipated loading of approximately 240 Equivalent Persons; • Testing conducted on the 150dia and 450dia water mains located in Davidson Street indicate that, due to a lack of pressure, installation of a small pump station will be necessary to achieve a potable supply and the development will require on-site storage tanks and pumps to support fire services; and • Stormwater Detention Tanks will be utilized for Irrigation Use and for topping-up the pool supply.
Electrical Report (Hopkins Consulting Engineers – Attachment 10)	The Electrical Report states that the likely increase in electrical load will be readily accommodated by the local energy authority (Ergon Energy) via their high voltage (22kV) reticulation system which runs along the street frontage on Davidson Street. It is anticipated that a total of 2No. 1000kVA transformers will be required to power the site. There is already an existing transformer powering the caravan site. This will become redundant due to its location being at the northern end of the site. The proposed location for a new substation for this site will be at the southern end of the site at the end of Crimmins Street.

5.4 Infrastructure Charges

In accordance with Council's Charges Resolution (No. 2 of 2021), it is anticipated that the infrastructure charges levied against the development would be calculated as per Table 10.

Table 10: Infrastructure Charge Calculation

Application Component	IC Calculation
Component 1: Development Permit for a Material Change of Use for "Resort Complex" (112 rooms, restaurants and bars, and guest facilities);	Resort Complex: \$6,393.33/room x 112 rooms = \$716,052.96

Application Component	IC Calculation
Component 2: Development Permit for a Material Change of Use for "Multiple dwellings" and "Short-term Accommodation" (44 villas)	Multiple dwellings (Highest applicable rate): \$24,143.38 per 3 (or more) bedroom dwelling x 44 dwellings = \$1,062,308.70 Component total = \$1,062,308.70
Component 3: Development Permit for Reconfiguring a Lot (4 Lots into 44 Community Title Lots + Common Property).	\$24,143.38 per additional lot excluding common property (equivalent to charge per 3 (or more) bedroom dwelling) x 40 additional lots = \$965,735.20 Component total = \$965,735.20 NB: <i>Component 3 charges would only be payable if the survey plan for the proposed reconfiguration is registered before the commencement of the corresponding MCU component. If this occurs, then any subsequent MCU components would be credited by an amount equal to the RaL infrastructure charge paid at the time of survey plan endorsement.</i>
Assumed Credits* Lots 1 and 2 on RP723702 (Dougie's Backpackers) - Tourist accommodation for up to 30 guests in bunkhouses plus approximately 40 camp sites. Lots 3 and 4 on RP909815 (Pandanus Tourist Park) – Four (4) apartment-style units, 4 tourist cabins and 92 camping sites (RVs and tents).	Dougie's Backpackers Credit: Short-term Accommodation: Most accommodation rooms/sites at Dougie's are twin-share and therefore if, on average, 1 bedroom/site = 2 people, then it is reasonable to apply an assumed credit of \$3,196.65/person (i.e. 50% of the AICR rate for 1 bedroom) or \$409,171.20 for 128 persons. + Food and Drink Outlet / Bar / Shop: Assumed credits to be confirmed subject to investigation. + Pandanus Tourist Park Credit: Tourist Park (Cabins): 15 x 1-bedroom cabins @ \$6,393.33 each = \$95,899.95 + 1 x 3-bedroom dwelling @ \$24,143.38 = \$24,143.38 + Tourist Park (Caravan or Tent sites): \$4,544.13/site x 103 sites = \$468,045.39 + Food and Drink Outlet / Shop: Credits to be confirmed subject to investigation. = Minimum Assumed Credit = \$997,259.92
Total Infrastructure Charge less Assumed Credits and excluding Component 3 charges	\$1,746,836.94 before Food and Drink Outlet / Bar / Shop credits applied (TBC).

*Assumed credits are based on the nature and intensity of existing uses known to be occurring on the subject lots translated into a current-day dollar figure using the AICR charge rates for the most comparable uses. This approach is offered as a simple and equitable means of arriving at an agreed credit amount and it is not suggested that such monies were ever levied against the existing uses. Should Council be of the view that there is a more appropriate method for determining the actual credits attributable to the development site,

officers are requested provide the details of their preferred methodology and any supporting information for the Applicants' consideration.

6. LEGISLATIVE REQUIREMENTS

6.1 Planning Act 2016

6.1.1 Prohibited Development

The proposed development is not prohibited. This has been established by considering all relevant instruments, which can provide prohibitions under the *Planning Act 2016* (The Act), including:

- Schedule 10 of the *Planning Regulation 2017*; and
- Relevant categorising instruments.

6.1.2 Assessable Development

Section 44(3) of the Act identifies that Assessable Development is development for which a Development Approval is required. As such, the development proposed by this application is made assessable under the Douglas Shire Planning Scheme 2018 (V1) in accordance with Section 43(1) of the Act.

6.1.3 Assessment Manager

The Assessment Manager for this development application is the Douglas Shire Council as determined by Schedule 8 of the *Planning Regulations 2017*.

7. STATE PLANNING INSTRUMENTS

7.1 FNQ Regional Plan 2009-2031

The site is located within the Urban Footprint of the Far North Queensland Regional Plan 2009-2031.

The Minister has identified that the planning scheme appropriately advances the FNQRP 2009-2031, as it applies in the Planning Scheme area. Compliance with the FNQRP is therefore demonstrated by way of compliance with the Planning Scheme.

7.2 State Planning Policy 2017

The Douglas Shire Planning Scheme 2018 (V1) has been endorsed by the Minister as appropriately reflecting the April 2016 version of the State Planning Policy (SPP). An assessment against the 2017 version of the SPP has been undertaken in the event that any amended elements are not appropriately captured by the current Planning Scheme. The relevant assessment benchmarks of the current SPP are assessed as being appropriately captured by the Planning Scheme.

7.3 Referrals and State Development Assessment Provisions (SDAP)

The application requires referral to the Department of Transport and Main Roads, care of the State Assessment and Referral Agency (SARA), and Energy Queensland owing to the following referral triggers:

- *Planning Regulation 2017*, Schedule 10, Part 9, Division 2, Table 1 - Reconfiguring a lot subject to an easement or near a substation site.

- *Planning Regulation 2017*, Schedule 10, Part 9, Division 2, Table 2 - Material change of use of premises near a substation site or subject to an easement.
- *Planning Regulation 2017*, Schedule 10, Part 9, Division 4, Subdivision 1, Table 1 – Aspect of development stated in schedule 20.
- *Planning Regulation 2017*, Schedule 10, Part 9, Division 4, Subdivision 2, Table 1 – Reconfiguring a lot near a State transport corridor.
- *Planning Regulation 2017*, Schedule 10, Part 9, Division 4, Subdivision 2, Table 3 – Reconfiguring a lot near a State-controlled road intersection.
- *Planning Regulation 2017*, Schedule 10, Part 9, Division 4, Subdivision 2, Table 4 – Material change of use of a premises near a State transport corridor or that is a future State transport corridor.

An assessment of the application against the relevant SDAP code is provided as **Attachment 12**.

8. PLANNING SCHEME

8.1 Douglas Shire Planning Scheme 2018 (Version 1)

8.1.1 Definitions

In accordance with Schedule 1 of the Planning Scheme and Schedule 24 of the *Planning Regulation 2017*, the following land use definitions are relevant to the proposal:

“Resort Complex –

means the use of premises for—

(a) tourist and visitor accommodation that includes integrated leisure facilities; or

Examples of integrated leisure facilities— bars, meeting and function facilities, restaurants, sporting and fitness facilities

(b) staff accommodation that is ancillary to the use in paragraph (a); or

(c) transport facilities for the premises, including, for example, a ferry terminal or air service.”

“Short-term Accommodation –

(a) means the use of premises for—

(i) providing accommodation of less than 3 consecutive months to tourists or travellers; or

(ii) a manager’s residence, office, or recreation facilities for the exclusive use of guests, if the use is ancillary to the use in subparagraph (i); but

(b) does not include a hotel, nature-based tourism, resort complex or tourist park.”

“Multiple Dwelling - means a residential use of premises involving 3 or more dwellings, whether attached or detached.”

8.1.2 Applicable Codes

A detailed assessment of the proposal has been conducted against the relevant codes and is provided as **Attachment 11**. Based on that assessment, it is concluded that the development substantially complies with the applicable assessment benchmarks. Table 11 provides a summary of the key issues considered by the assessment.

Table 11: Code Compliance Summary

Applicable Code	Compliance comments
6.2.1.4 - Tourist accommodation zone code	<ul style="list-style-type: none"> • PO1 – Reduced northern/western setbacks would not detract from amenity given the nature/design of adjoining land uses. • PO2 – Combined site coverage for all components not exceeding 50%. • PO3 - Building design complementary to streetscape character. • PO4 – Extensive landscaping proposed throughout the development and at each property boundary comprising tropical species. • PO6 - The proposed development has been informed by extensive flood and stormwater studies, geotechnical studies, and hydrological design. • PO7 – Potential offsite impacts addressed by design or are consistent with the existing standard of amenity. • PO10-PO12 – The proposed CTS reconfiguration does not achieve the area, frontage or dimensions applied to non-strata titled lots. It would not, however, be reasonable to apply the same requirements in the context of a Standard Format Plan and it is evident that Council has not taken such a position in similar circumstances. The proposed CTS lots comply with the Purpose and Overall Outcomes of the code. • Acceptable Outcomes otherwise satisfied.
7.2.4 – Port Douglas/Craigie local plan code	<ul style="list-style-type: none"> • PO2 - The proposed landscaping plan provided at Attachment 3 and landscaping architectural features contribute to the character and quality of the local plan area. • PO4 – the proposed landscaping would enhance the tropical character of Port Douglas.

Applicable Code	Compliance comments
	<ul style="list-style-type: none"> • PO5 – While Davidson Street falls within the boundaries of the State-controlled road corridor, it is a Council-controlled road. The Traffic Impact Assessment provided as Attachment 6 concludes that the development would have a negligible impact on the function of the State and Council controlled road networks. • Acceptable Outcomes otherwise satisfied or benchmarks not applicable.
8.2.1 - Acid sulfate soils overlay code	<ul style="list-style-type: none"> • All Performance Outcomes satisfied as per the findings and recommendations contained in the Geotechnical Investigation provided as Attachment 7 or by way of conditions.
8.2.3 - Coastal environment overlay code	<ul style="list-style-type: none"> • PO2 - The setbacks are consistent with similar developments fronting Davidson Street. • PO3 – Development consistent with surrounding developments in the Erosion Prone Area. • PO13 - There are no specific views or vistas impacted by the proposed development. • PO14 – The proposal is for brownfield, infill development. • Acceptable Outcomes otherwise satisfied or benchmarks not applicable.
8.2.4 - Flood and storm tide hazard overlay code	<ul style="list-style-type: none"> • PO1, PO3 and PO4 - Performance Outcomes satisfied as per the findings and recommendations contained in the Flood Study provided as Attachment 8 or by way of conditions. • Acceptable Outcomes otherwise satisfied or benchmarks not applicable.
8.2.6 – Landscape values overlay code	<ul style="list-style-type: none"> • PO3 – The proposed development will deliver a superior result in terms of scenic amenity when compared to the current site aesthetic by way of expertly designed, dense tropical landscaping, particularly to the Davidson Street frontage. • Acceptable Outcomes otherwise satisfied or benchmarks not applicable.
8.2.10 - Transport network overlay code	<ul style="list-style-type: none"> • PO3 - Development incorporates a built form responsive to potential traffic impacts consistent with similar developments on Davidson Street.

Applicable Code	Compliance comments
	<ul style="list-style-type: none"> • PO4 – The Traffic Impact Assessment provided as Attachment 6 concludes that the development would have a negligible impact on the function of the State and Council controlled road networks. • PO5 - Extensive landscaping proposed to enhance the visual aesthetic of the site and screen development from potential road impacts. • Acceptable Outcomes otherwise satisfied or benchmarks not applicable.
9.3.3 – Centre activities code	<ul style="list-style-type: none"> • PO3 & PO4 – The proposed centre activities are part of the Resort Complex and an anticipated use within the zone. • PO5-PO9 – The proposed ancillary centre activities will be contained within the central accommodation building. • Acceptable Outcomes otherwise satisfied or benchmarks not applicable.
9.3.13 - Multiple dwelling, short term accommodation code & retirement facility code	<ul style="list-style-type: none"> • PO3 - The development has been designed to reflect the form and character of the Tourist Accommodation Zone on Davidson Street. The superior architectural design set amidst lush tropical landscaping improves the immediate streetscape of the site. • PO4 - Reduced northern/western setbacks would not detract from amenity given the nature/design of adjoining land uses. • PO5 - The built form provides for a high degree of articulation and would complement the established character and amenity of the area. • PO8 – The designers (Hunt Design) have been instrumental in developing the tropical design elements that define Port Douglas today. • PO9 - Screening will be used where required as part of a built form solution to prevent overlooking. • PO12 - Over 35% of the site consists of garden areas, parkland, or water bodies. Extensive landscaping is proposed throughout the development and at each property boundary.

Applicable Code	Compliance comments
	<ul style="list-style-type: none"> • PO13 - Each Villa has extensive private recreational space consisting of roof terraces, balconies, and courtyards and each Hotel room has a balcony of 13m² – 15m². • Acceptable Outcomes otherwise satisfied or benchmarks not applicable.
9.4.1 - Access, parking and servicing code	<ul style="list-style-type: none"> • PO1 – Overall the development would achieve compliance with AO1.1, albeit after allowances for cross-utilisation and non-private modes of transport are considered. • PO3 - The proposed development would improve the existing access situation by consolidating access at a central ingress/egress location on Davidson Street. • PO7 – Secure and convenient parking for 30 bicycles proposed. • PO10 - Separate ingress/egress driveways would allow for sufficient queuing and efficient site circulation. • Acceptable Outcomes otherwise satisfied, not applicable or can be conditioned.
9.4.3 - Environmental performance code	<ul style="list-style-type: none"> • All applicable Acceptable Outcomes satisfied.
9.4.4 – Filling and excavation code	<ul style="list-style-type: none"> • PO1 & PO2 - Filling and excavation will be carried out in such a manner that the visual/scenic amenity of the area and the privacy and stability of adjoining properties are not compromised. This code will be addressed in detail at the Operational Works stage of the development. • Acceptable Outcomes otherwise satisfied, not applicable or can be conditioned.
9.4.5 - Infrastructure works code	<ul style="list-style-type: none"> • PO12 – A minor upgrade to Crimmins Street is proposed to provide a 3.5m wide commercial crossover and a 3.5 wide service road with a passing bay. • PO17 – Telecommunications addressed by the Electrical Report provided as Attachment 10. • PO18 – Trade waste to be addressed by way conditions.

Applicable Code	Compliance comments
	<ul style="list-style-type: none"> • PO19 & PO20 – Fire services addressed by the Hydraulic Design Report provided as Attachment 9. • Acceptable Outcomes otherwise satisfied, not applicable or can be conditioned.
9.4.6 – Landscaping code	<ul style="list-style-type: none"> • PO1 – The proposed development will deliver a superior result in terms of scenic amenity when compared to the existing development aesthetic by way of expertly designed, dense tropical landscaping, particularly to the Davidson Street frontage. • PO3 – The proposed landscaping would ensure that the development is consistent with the landscape character of the area. Details of vegetation removal and detailed Landscaping Plans are provided at Attachment 3. • PO5 - Internal roadways and parking areas will be landscaped in accordance with the Landscaping Plans provided as Attachment 3. • PO7 - Where podium planting is proposed it has been designed for ease of maintenance and proper drainage. • PO9 – The proposed landscaping reflects CPTED principles. • PO10 – The landscaping design would not require the removal or relocation of services and would not inhibit access to services. • Acceptable Outcomes otherwise satisfied.
9.4.7 - Reconfiguring a lot code	<ul style="list-style-type: none"> • PO1 – The proposed CTS reconfiguration does not achieve the area, frontage or dimensions identified by the relevant zone code as are applicable to non-strata titled lots. It would not, however, be reasonable to apply the same requirements in the context of a Standard Format Plan and it is evident that Council has not taken such a position in similar circumstances. The proposed CTS lots comply with the Purpose and Overall Outcomes of the code.

Applicable Code	Compliance comments
	<ul style="list-style-type: none"> • PO2 - The proposed CTS lots are generally rectangular in shape and contain functional areas for the intended land use of the zone as is demonstrated by the MCU component of this development. • PO3 - The proposed common property has direct access to Davidson Street. • PO4 – The proposed development responds directly to the local context and natural site features as is demonstrated by way of compliance with the balance of the applicable codes. • PO15 - The proposed internal cycle and pedestrian connections would not compromise connectivity with established open space networks. • Acceptable Outcomes otherwise satisfied, not applicable or can be conditioned.
9.4.9 – Vegetation management code	<ul style="list-style-type: none"> • PO1 – The removal of mature non-regulated landscaping species from the site would not impact upon habitat values or slope stability and the vegetation is not of cultural, historical or visual significance. • Acceptable Outcomes otherwise satisfied or benchmarks not applicable.

8.1.4 Strategic Framework

The Strategic Framework sets the policy direction for the planning scheme and forms the basis for ensuring appropriate development occurs within the Shire for the life of the planning scheme.

The proposed development is Impact assessable and an assessment against the Strategic Framework has been undertaken. Table 12 below includes an assessment against each of these the Six Themes.

Table 12: Strategic Framework Compliance Assessment

Strategic Framework	Compliance comments
3.4 Theme 1: Settlement Pattern	
3.4.1 Strategic Outcomes	<p>Complies.</p> <p>The proposed development is appropriately located within the existing Port Douglas settlement area which provides for a mix of permanent residential and tourist accommodation land uses.</p>
3.4.2 Element – Urban Settlement	Complies.

Strategic Framework	Compliance comments
	<p>As noted above, the proposed development is appropriately located within the Port Douglas Urban Community. Port Douglas has a distinctive tourism focus given the accommodation offerings and close proximity to tourist attractions (Great Barrier Reef).</p> <p>The settlement pattern supports medium density development in and around the Port Douglas town centre and also within nearby tourist areas to the to the south of the town centre.</p> <p>The proposed development enhances Port Douglas identity as a tourist destination and reinforces the desired settlement pattern.</p>
3.4.2.1 Specific Outcomes	<p>Complies.</p> <p>According to the Strategic Framework Maps, the subject site is appropriately located within the Urban Area. The proposed development is sympathetic to it surrounds and does not rely on complex, visually intrusive engineering solutions to overcome site constraints.</p> <p>The proposed development offers a sensible and considered blend of permanent residential and tourist accommodation opportunities.</p>
3.4.3 Element – Activity Centres	<p>No notable non-compliance issues.</p> <p>The subject site is not located within an Activity Centre.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.4.4 Element – Industrial Areas	<p>No notable non-compliance issues.</p> <p>The subject site is not located within an Industrial Area.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.4.5 Element – Residential Areas and Activities	<p>Complies.</p> <p>The subject site displays appropriate characteristics for development. The land is not constrained by ecological values and infrastructure features.</p> <p>The proposal includes a mix of lot sizes in a form which facilitates private ownership and low maintenance.</p>
3.4.5.1 Specific Outcomes	<p>Complies.</p>

Strategic Framework	Compliance comments
	<p>This is a coordinated development which provides for permanent residential and tourist accommodation opportunities. The proposal includes a mix of lot sizes in a form which facilitates private ownership and low maintenance.</p> <p>The proposed development incorporates appropriate tropical design elements, including:</p> <ul style="list-style-type: none"> • Shelter: protection from the sun and rain. • Comfort: capture breezes, minimise re-radiated heat, low thermal conductivity building fabric. • Lifestyle: alfresco living, access to activities, seamless interior and exterior spaces. • Tropical Landscape: rich tropical landscaping dominating the open spaces and reflecting the nearby natural environment. • Materials Palette: derived from local materials where possible.
3.4.6 Element – Rural Residential Areas	<p>No notable non-compliance issues.</p> <p>The subject site is not located within an Rural Residential Area.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.4.7 Element – Mitigation of Hazards	<p>Complies.</p> <p>The proposed development is appropriately located and designed in terms of hazard mitigation. Supporting technical documentation is provided and demonstrates compliance.</p>
3.4.7.1 Specific Outcomes	<p>No notable non-compliance issues.</p>
3.4.8 Recognition of Rights and Interests of Native Title Land Holders	<p>No notable non-compliance issues.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.5 Theme 2 – Environmental and Landscape Values	
3.5.1 Strategic Outcomes	<p>Complies.</p> <p>The site is not mapped as containing any protected vegetation or natural areas. All vegetation on site has been established as a result of previous landscaping schemes associated with the existing use.</p> <p>The vegetation to be removed is plotted on the Development Plans provided at Attachment 3. Whilst there are some reasonably</p>

Strategic Framework	Compliance comments
	<p>large trees to be removed, most trees are palms and mangoes and other landscaped species.</p> <p>Given the extent of development already occurring on site, additional vegetation damage will not result in fragmentation of habitats or any impact on Shire's biodiversity and ecological values.</p> <p>There is no known vegetation of historical, cultural and / or visual significance on site. Additionally, vegetation is not required to be retained for erosion prevention and slope stabilisation.</p> <p>Finally, it is considered that the character and amenity of the local area will be improved as a result of the proposed landscaping associated with the development and further detailed within Attachment 3.</p>
3.5.2 Element – Aboriginal Cultural Heritage Values	<p>No notable non-compliance issues.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.5.3 Element – Biodiversity	<p>Complies.</p> <p>Refer to the above comments under 3.5.1 Strategic Outcomes.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.5.4 Element – Coastal Zones	<p>Complies.</p> <p>Refer to comments below under 3.5.4.1 Specific Outcomes.</p>
3.5.4.1 – Specific Outcome	<p>Complies.</p> <p>The development will not impact on natural coastal processes. This matter is addressed in further detail in s2.4 of the Flood Study provided at Attachment 8.</p> <p>All stormwater is directed to a lawful point of discharge and in accordance with FNQROC's Design Manual D5 Stormwater Quality Management and the State Planning Policy, the proposed drainage outlet locations will be provided with quality control devices which have been modelled in MUSIC to ensure nutrient reduction loading compliance.</p>
3.5.5 Element – Scenic Amenity	<p>Complies.</p> <p>Refer to comments below under 3.5.5.1 Specific Outcomes.</p>

Strategic Framework	Compliance comments
3.5.5.1 Specific Outcomes	<p>Complies.</p> <p>The subject site is within the scenic route buffer for the entry to Port Douglas along Port Douglas Road/ Davidson Street.</p> <p>The features of this scenic route are dense tropical landscaping and appropriate height and setbacks for development.</p> <p>The proposed development necessitates the removal of some onsite vegetation for yield and constructability but it is replaced by expertly designed, dense tropical landscaping particularly to the Davidson Street frontage.</p> <p>The buildings are finished in high quality natural materials which integrate into the surrounding vegetation.</p> <p>The scale, height and setback of the buildings is in keeping with the Acceptable Outcomes of the relevant zone code.</p> <p>The proposed development will deliver a superior result in terms of scenic amenity when compared to that currently present.</p> <p>The landscaping and visual aspect of the site is a critical feature of the proposed Luxury Resort Complex and Short Term Accommodation / Multiple Dwelling Villas.</p>
3.5.6 Element – Air and Acoustic Protection and Hazardous Materials	<p>Not relevant to the proposed development.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.6 Theme 3 – Natural Resource Management	
3.6.1 Strategic Outcomes	<p>Complies.</p> <p>The proposed development appropriately recognises and protects and manages possible impacts on natural resources.</p>
3.6.2 Element – Land and Catchment Management	<p>Complies.</p> <p>The development will not impact on natural coastal processes. This matter is addressed in further detail in s2.4 of the Flood Study provided at Attachment 8.</p> <p>All stormwater is directed to a lawful point of discharge and in accordance with FNQROC's Design Manual D5 Stormwater Quality Management and the State Planning Policy, the proposed drainage outlet locations will be provided with quality control</p>

Strategic Framework	Compliance comments
	<p>devices which have been modelled in MUSIC to ensure nutrient reduction loading compliance.</p> <p>The main PASS materials are the marine clay. Marine clay starts generally between RL1.4 m to -2.7 and extends to about RL-2.8 m to -6.4 m. PASS is identified in the Geotechnical Report provided at Attachment 7 and has been considered during the development of the civil plans.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.6.3 Element – Primary Production, Forestry and Fisheries	<p>Not relevant to the proposed development.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.6.4 Element – Resources Extraction	<p>Not relevant to the proposed development.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.7 Theme 4 – Strong Communities	
3.7.1 Strategic Outcome	<p>Complies.</p> <p>The Luxury Resort Complex and Short Term Accommodation / Multiple Dwelling Villas have been designed by Hunt Design who has been instrumental in developing the tropical design elements that define Port Douglas today.</p> <p>The proposed development has been appropriately designed and is in keeping with the distinct character of Port Douglas and focus as a key tourism destination.</p> <p>The design appropriately integrates permanent residential living and tourist accommodation opportunities.</p> <p>The proposed development incorporates tropical design elements, including:</p> <ul style="list-style-type: none"> • Shelter: protection from the sun and rain. • Comfort: capture breezes, minimise re-radiated heat, low thermal conductivity building fabric. • Lifestyle: alfresco living, access to activities, seamless interior and exterior spaces. • Tropical Landscape: rich tropical landscaping dominating the open spaces and reflecting the nearby natural environment.

Strategic Framework	Compliance comments
	<ul style="list-style-type: none"> Materials Palette: derived from local materials where possible. <p>The buildings are finished in high quality natural materials which integrate into the surrounding vegetation. The scale, height and setback of the buildings is in keeping with the Acceptable Outcomes of the relevant zone code.</p> <p>The landscaping and visual aspect of the site is a critical feature of the proposed Luxury Resort Complex and Short Term Accommodation / Multiple Dwelling Villas.</p>
3.7.2 Element – Social Planning and Infrastructure	<p>No notable non-compliance issues.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.7.3 Element – Active Communities	<p>Complies.</p> <p>The development provides for onsite recreational activities. Furthermore, the site is connected to external public recreational spaces by the existing footpath and bike network. The site is located close proximity to Four Mile Beach.</p>
3.7.4 Element – Sense of Place, Community and Identity	<p>Complies.</p> <p>The Luxury Resort Complex and Short Term Accommodation / Multiple Dwelling Villas have been designed by Hunt Design who has been instrumental in developing the tropical design elements that define Port Douglas today.</p> <p>This is a luxury offering and certainly not characterised as an off-the-shelf corporate designs that have little regard for the Shire's unique communities and sense of place.</p>
3.7.5 Element – Housing Choice and Affordability	<p>Complies.</p> <p>The proposal includes a mix of lot sizes in a form which facilitates private ownership and low maintenance.</p>
3.7.6 Element – Arts and Culture	<p>No notable non-compliance issues.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.7.7 Element – Cultural and Landscape Heritage	<p>No notable non-compliance issues.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>

Strategic Framework	Compliance comments
3.7.8 Element – Strengthening Indigenous Communities	<p>No notable non-compliance issues.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.8 Theme 5 – Economy	
3.8.1 Strategic Outcomes	<p>Complies.</p> <p>The Port Douglas Daintree Destination Tourism Plan 2025 recently identified a lack of 4 and 5 star accommodation options as being a key constraint to the growth of tourism in the Shire. The plan further highlights that COVID-era consumers have an acute awareness of all things health and wellbeing and have come to expect experiences that respond in kind. The Davidson by GURNER™ represents a timely response to these issues and aims to be the world’s leading aspirational lifestyle and design brand, creating world-class spaces where people can live their best lives. The development is an appropriate scale given the site location and context and retains focus on Port Douglas as a key tourist destination.</p> <p>Throughout construction and operation, various employment opportunities will be generated.</p>
3.8.2 Element – Economic Growth and Diversification	<p>Complies.</p> <p>The proposed development enhances and reinforces Port Douglas as a premium tourist destination. Furthermore, the development will generate a number of construction and operational jobs within the region.</p>
3.8.3 Element – Tourism	<p>Complies.</p> <p>The proposed development enhances and reinforces Port Douglas as a premium tourist destination.</p>
3.8.4 Element – Primary Production	<p>Not relevant to the proposed development.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.8.5 Element – Innovation and Technology	<p>Not relevant to the proposed development.</p> <p>No further assessment against the corresponding Specific Outcomes is provided.</p>
3.9 Theme 6 – Infrastructure and Transport	

Strategic Framework	Compliance comments
3.9.1 Strategic Outcomes	<p>Complies.</p> <p>Technical documentation provided with the application demonstrates the development is appropriately located and supported by necessary existing and proposed infrastructure.</p>
3.9.2 Element – Electricity	<p>Complies.</p> <p>The Electrical Report by Hopkins Consulting Engineers states that the likely increase in electrical load will be readily accommodated by the local energy authority (Ergon Energy) via their high voltage (22kV) reticulation system which runs along the street frontage on Davidson Street. It is anticipated that a total of 2No. 1000kVA transformers will be required to power the site. There is already an existing transformer powering the caravan site. This will become redundant due to its location being at the northern end of the site. The proposed location for a new substation for this site will be at the southern end of the site at the end of Crimmins Street.</p>
3.9.3 Element – Water and Waste Management	<p>Complies.</p> <p>Water and Waste Management - The Hydraulic Design Report prepared by H2O Consultants concludes that:</p> <ul style="list-style-type: none"> • The existing 150dia gravity-fed sewer main servicing the site has sufficient capacity to accommodate the anticipated loading of approximately 240 Equivalent Persons; • Testing conducted on the 150dia and 450dia water mains located in Davidson Street indicate that, due to a lack of pressure, installation of a small pump station will be necessary to achieve a potable supply and the development will require on-site storage tanks and pumps to support fire services; and • Stormwater Detention Tanks will be utilized for Irrigation Use and for topping-up the pool supply.
3.9.4 Element – Transport	<p>Complies</p> <p>The Traffic Impact Assessment prepared by GHD compares pre and post development scenarios and concludes that the development will have a negligible impact on the safety and efficiency of the State and Council controlled road networks. Traffic patterns associated with the proposed development are expected to be similar to the existing situation as the current and proposed land uses do not differ significantly in terms of their potential traffic generation.</p>
3.9.5 Element – Information Technology	<p>Not relevant to the proposed development.</p>

Strategic Framework	Compliance comments
	No further assessment against the corresponding Specific Outcomes is provided.

9. CONCLUSION

In the fallout of the global pandemic, signs of recovery are beginning to emerge within Douglas Shire's battered visitor economy. The reopening of international borders in early 2022 saw a steady increase in international visitor arrivals, while in the same period, the domestic market seized the opportunity to discover all that the Tropical North has to offer, it being one of only ten Queensland regions to break the record for overnight visitor spending. The outlook is therefore brighter than it has been at any time in the past two years, and although a full recovery may seem distant, by 2025, international visitation is forecast to have returned to pre-pandemic levels. With a reputation world-over as a safe, attractive and welcoming destination, Port Douglas is well positioned to benefit from the revival, nevertheless, the road to recovery will inevitably be built upon local operators' ability to offer ever-more memorable experiences.

Consistent with Priority No. 1 of Council's Economic Development Strategy, it is against this backdrop that the proposal before Council presents a unique opportunity for the Shire to expand on its portfolio of offerings, with a high-end experience unlike by any seen before in the region. With its emphasis on health and wellness, the Davidson by GURNER™ promises to deliver on, and exceed, the expectations of the health-conscious traveller, and in doing so, bolster the appeal of Port Douglas as a destination of choice long after the present-day volatilities have stabilised.

As this submission has demonstrated that the proposal satisfies the relevant assessment benchmarks contained in the Douglas Shire Planning Scheme 2018 (V1), it is anticipated that the officers' recommendation would be favourable, albeit subject to the imposition of reasonable and relevant conditions. That being the case, it is requested that draft conditions be provided for discussion sufficiently in advance of the matter being decided.

2018 Douglas Shire Council Planning Scheme Property Report

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For more information and to determine if the mapping layers are applicable, refer to the [2018 Douglas Shire Council Planning Scheme](#). This report is not intended to replace the need for carrying out a detailed assessment of Council and State controls or the need to seek your own professional advice on any town planning instrument, local law or other controls that may impact on the existing or intended use of the premise mentioned in this report. For further information please contact Council by phone: [07 4099 9444](tel:0740999444) or [1800 026 318](tel:1800026318) or email enquiries@douglas.qld.gov.au.

Visit Council's website to apply for an [official property search or certificate](#), or contact the [Department of Natural Resources, Mines and Energy](#) to undertake a title search to ascertain how easements may affect a premise.

Property Information

Property Address

Pandanus Caravan Pk
[97 Davidson Street PORT DOUGLAS](#)



Lot Plan

[1RP723702](#) (Freehold - 9131m²)



Selected Property



Easements



Land Parcels

Douglas Shire Planning Scheme 2018 version 1.0

The table below provides a summary of the Zones and Overlays that apply to the selected property.

Zoning

Applicable Zone








Tourist Accommodation

More Information

- [View Section 6.2.14 Tourist Accommodation Zone Code](#)
- [View Section 6.2.14 Tourist Accommodation Zone Compliance table](#)
- [View Section 6.2.14 Tourist Accommodation Zone Assessment table](#)

Douglas Shire Planning Scheme 2018 version 1.0

The table below provides a summary of the Zones and Overlays that apply to the selected property.

 Local Plans	Applicable Precinct or Area Port Douglas - Craiglie	More Information <ul style="list-style-type: none"> View Section 7.2.4 Port Douglas/Craiglie Local Plan Code View Section 7.2.4 Port Douglas/Craiglie Local Plan Compliance table
 Acid Sulfate Soils	Applicable Precinct or Area Acid Sulfate Soils (< 5m AHD)	More Information <ul style="list-style-type: none"> View Section 8.2.1 Acid Sulfate Soils Overlay Code View Section 8.2.1 Acid Sulfate Soils Overlay Compliance table
 Coastal Processes	Applicable Precinct or Area Erosion Prone Area	More Information <ul style="list-style-type: none"> View Section 8.2.3 Coastal Environment Overlay Code View Section 8.2.3 Coastal Environment Overlay Compliance table
 Flood Storm	Applicable Precinct or Area Medium Storm Tide Hazard	More Information <ul style="list-style-type: none"> View Section 8.2.4 Flood and Storm Tide Hazard Overlay Code View Section 8.2.4 Flood and Storm Tide Hazard Overlay Compliance table
 Landscape Values	Scenic Buffer Area Scenic route buffer View corridor	More Information <ul style="list-style-type: none"> View Section 8.2.6 Landscape Values Overlay Code View Section 8.2.6 Landscape Values Overlay Compliance table
 Transport Noise Corridors	Applicable Precinct or Area Category 1: 58 dB(A) =< Noise Level < 63 dB(A) Category 2: 63 dB(A) < Noise Level < 68 dB(A)	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table
 Transport Road Hierarchy	Applicable Precinct or Area Access Road Major Transport Corridor Buffer Area (State Controlled Road)	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table

Zoning

Applicable Zone

Tourist Accommodation

More Information

- [View Section 6.2.14 Tourist Accommodation Zone Code](#)
- [View Section 6.2.14 Tourist Accommodation Zone Compliance table](#)
- [View Section 6.2.14 Tourist Accommodation Zone Assessment table](#)



☒ Selected Property

☐ Land Parcels

Zoning

<input type="checkbox"/> Centre	<input type="checkbox"/> Community Facilities	<input type="checkbox"/> Conservation	<input type="checkbox"/> Environmental Management
<input type="checkbox"/> Industry	<input type="checkbox"/> Low Density Residential	<input type="checkbox"/> Low-medium Density Residential	<input type="checkbox"/> Medium Density Residential
<input type="checkbox"/> Recreation and Open Space	<input type="checkbox"/> Rural	<input type="checkbox"/> Rural Residential	<input type="checkbox"/> Special Purpose
<input type="checkbox"/> Tourism	<input type="checkbox"/> Tourist Accommodation		

Local Plans

Applicable Precinct or Area


Port Douglas - Craiglie

More Information

- [View Section 7.2.4 Port Douglas/Craiglie Local Plan Code](#)
- [View Section 7.2.4 Port Douglas/Craiglie Local Plan Compliance table](#)



 Selected Property

 Land Parcels

Transport Investigation Corridor

 Transport Investigation Corridors

Major Road Connections

 Major Road Connections

Major Road Connections (No Arrow)

 Major Road Connections

Daintree River to Bloomfield

 Daintree River to Bloomfield

Creb Track and Quaid Road

 Creb Track







60 metre contour

 60 metre contour

Local Plan Boundary

 Local Plan Boundary

Local Plan Sub Precincts

 1a Town Centre
  1b Waterfront North
  1c Waterfront South
  1d Limited Development
  1e Community and Recreation
  1f Flagstaff Hill

Local Plan Precincts

Not Part of a Precinct
 Precinct 4
  Precinct 1
  Precinct 2
  Precinct 3
  Precinct 8
  Precinct 5
  Precinct 6
  Precinct 7
  Precinct 9

Live Entertainment Precinct

 Live Entertainment Precinct

Indicative Future Open Space

 Indicative Future Open Space

 Road Reserve Esplanade

Acid Sulfate Soils

Applicable Precinct or Area
Acid Sulfate Soils (< 5m AHD)

- More Information**
- [View Section 8.2.1 Acid Sulfate Soils Overlay Code](#)
 - [View Section 8.2.1 Acid Sulfate Soils Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Acid Sulfate Soils

☒ Acid Sulfate Soils (< 5m AHD)

☒ Acid Sulfate Soils (5-20m AHD)

☐ all others

Coastal Processes

Applicable Precinct or Area
Erosion Prone Area

- More Information
- [View Section 8.2.3 Coastal Environment Overlay Code](#)
 - [View Section 8.2.3 Coastal Environment Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

☐ Coastal Management District







☐ Erosion Prone Area

Flood Storm

Applicable Precinct or Area
Medium Storm Tide Hazard

- More Information
- [View Section 8.2.4 Flood and Storm Tide Hazard Overlay Code](#)
 - [View Section 8.2.4 Flood and Storm Tide Hazard Overlay Compliance table](#)



 Selected Property	 Land Parcels	 Medium Storm Tide Hazard	 High Storm Tide Hazard
 100 Year ARI - Mossman Port Douglas and Daintree Flood Studies		 Floodplain Assessment Overlay	

Landscape Values

Scenic Buffer Area
Scenic route buffer
View corridor

- More Information**
- [View Section 8.2.6 Landscape Values Overlay Code](#)
 - [View Section 8.2.6 Landscape Values Overlay Compliance table](#)



<p>Selected Property</p> <p> Selected Property</p>	<p>Land Parcels</p> <p> Land Parcels</p>	<p>Scenic Buffer Area</p> <p> Gateway</p> <p> View corridor</p>	<p> Lookout</p> <p> all others</p>	<p> Scenic route</p> <p> Scenic route buffer</p>
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<p>Landscape Values</p> <p> Coastal scenery</p>	<p> High landscape values</p>	<p> Medium Landscape Value</p>	<p> all others</p>
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Transport Noise Corridors

Applicable Precinct or Area

- Category 1: 58 dB(A) ≤ Noise Level < 63 dB(A)
- Category 2: 63 dB(A) < Noise Level < 68 dB(A)

More Information

- [View Section 8.2.10 Transport Network Overlay Code](#)
- [View Section 8.2.10 Transport Network Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Transport Noise Corridors Mandatory Area

- | | | |
|--|--|--|
| <input type="checkbox"/> Category 0: Noise Level < 58 dB(A) | <input type="checkbox"/> Category 1: 58 dB(A) ≤ Noise Level < 63 dB(A) | <input type="checkbox"/> Category 2: 63 dB(A) < Noise Level < 68 dB(A) |
| <input type="checkbox"/> Category 3: 68 dB(A) ≤ Noise Level < 73 dB(A) | <input type="checkbox"/> Category 4: Noise Level ≥ 73 dB(A) | <input type="checkbox"/> all others |

Transport Noise Corridors Voluntary Area

- | | | |
|--|--|--|
| <input type="checkbox"/> Category 0: Noise Level < 58 dB(A) | <input type="checkbox"/> Category 1: 58 dB(A) ≤ Noise Level < 63 dB(A) | <input type="checkbox"/> Category 2: 63 dB(A) < Noise Level < 68 dB(A) |
| <input type="checkbox"/> Category 3: 68 dB(A) ≤ Noise Level < 73 dB(A) | <input type="checkbox"/> Category 4: Noise Level ≥ 73 dB(A) | <input type="checkbox"/> all others |

Transport Road Hierarchy

Applicable Precinct or Area

Access Road
Major Transport Corridor Buffer Area (State Controlled Road)

More Information

- [View Section 8.2.10 Transport Network Overlay Code](#)
- [View Section 8.2.10 Transport Network Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Road Hierarchy

- | | | | |
|---|---|---|--|
| — Access Road | — Arterial Road | — Collector Road | — Industrial Road |
| — Major Rural Road | — Minor Rural Road | — Sub Arterial Road | — Unformed Road |
| — all others | | | |

☐ Major Transport Corridor Buffer Area

Disclaimer

This report is not a substitute for a Planning and Development Certificate and should not be relied upon where the reliance may result in loss, damage or injury. While every effort is taken to ensure the information in this report is accurate and up to date, Douglas Shire Council makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs that may occur as a result of the report being inaccurate or incomplete in any way or for any reason.

Storm Tide Inundation Property Report

The following report has been automatically generated to provide a general indication of development related information applying to the nominated land parcel.

For more information refer to the [JB Pacific Storm Tide Inundation Methodology Study](#). This report is not intended to replace the need for carrying out a detailed assessment of Council and State controls or the need to seek your own professional advice on any town planning instrument, local law or other controls that may impact on the existing or intended use of the premise mentioned in this report. For further information please contact Council by phone: [07 4099 9444](tel:0740999444) or [1800 026 318](tel:1800026318) or email enquiries@douglas.qld.gov.au.

A separate [Council Planning Scheme Property Report](#) tool is available for information relating to Council's 2018 Planning Scheme.

Visit Council's website to apply for an [official property search or certificate](#), or contact the [Department of Natural Resources, Mines and Energy](#) to undertake a title search to ascertain how easements may affect land.

JB Pacific Storm Tide Inundation Methodology Study

The purpose of the Douglas Shire Storm Tide Inundation Methodologies Study was to review and analyse different methodologies, identify a best practise model for the Shire's coastal urban areas, run this preferred best practise model and calculate the minimum heights for the 1% AEP (Annual Exceedance Probability) storm tide inundation for the year 2100 having regard to a 0.8m sea level rise for urban coastal properties.

Excerpt from the JB Pacific Storm Tide Inundation Methodology Report -

Storm Tide Inundation

The Douglas Shire coastline experiences a range of hydrodynamic, waves, and morphologic processes that are linked through dependant and independent variables. This includes the underlying astronomical tide, the passage of local storms and cyclones, the interaction of storm surges along the open coastline, the local wave climate, any sheltering provided by nearshore reefs, and the role of nearshore and dune vegetation. A range of these coastal processes are shown in Figure 2-1.

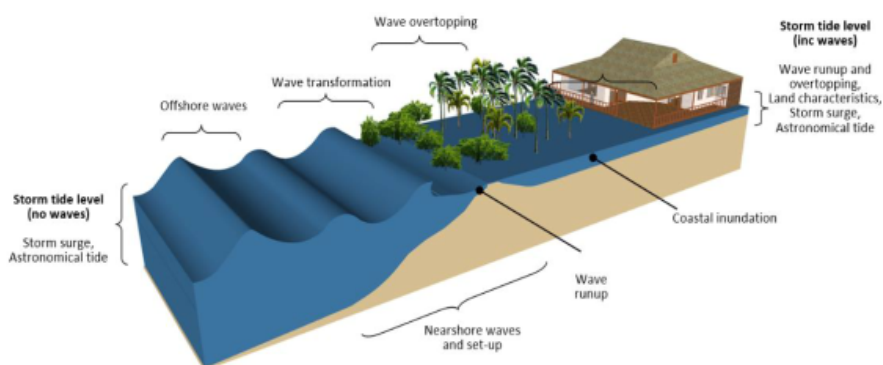


Figure 2-1: Drivers of coastal risk

Importantly storm tide inundation can be from the overtopping at the foreshore as well as wave runup through estuaries and inundate from "behind" a locality. Check out the animation of this activity through the local estuaries in the animation on Council's website.

Future Year 2100 Projected Levels

On 2 July 2017 the Planning Act 2016 came into effect as part of the Queensland Government's commitment to delivering planning reform across the State and the State Planning Policies reinstating the need to consider the 1% AEP (Average Exceedance Probability) Storm Tide Inundation level for the year 2100 with a 0.8m sea level rise. The 1% AEP is referred to as the one in one hundred year event. The 1%AEP is the minimum we need to consider and plan for.

Freeboard

There are numerous variants that can affect the modelled levels. To account for the differences in these variants a "freeboard" is applied. For the JB Pacific Storm Tide Inundation Methodology Study these differences have been considered within a nominal 0.5m freeboard level. Minimum levels for habitable rooms need to consider the Finished Floor Level (FFL) being the 1%AEP level plus the 0.5m freeboard. This value is a measurement at AHD (Australian Height Datum).

AHD Levels

A Licensed Surveyor should be engaged to determine the accurate AHD for a property. Contours and levels identified through Queensland Globe are estimated from LIDAR calculations and may not be 100% accurate.

Property Information

Property Address [Pandanus Caravan Pk](#)
[97 Davidson Street PORT DOUGLAS](#)



Lot Plan (- m²)



☒ Selected Property

☐ Easements


☐ Property

Storm Tide Inundation Property Information

The information below provides details of the projected Future Year 2100 Storm Tide Inundation Level that considers a Sea Level Rise of 0.8m AHD



 Selected Property

 Affected by the 1 % AEP Event for the year 2100

JPacific summary Information



 Selected Property

StormTide Levels Overview

 3 to 4

 2 to 3

 1 to 2

 0.1 to 1

 0 to 0

Storm Tide Range Detailed



Selected Property

StormTide Levels Detailed

Below 0.33000	2.16968	2.32640	2.47331	2.76642	2.91969	3.18777 and above
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The Level for Construction – for Storm Tide Inundation Considerations

The lot is affected by storm tide inundation for the Year 2100, 1 in 100 (1% AEP) event. The 1% AEP for the year 2100 (including a Sea Level Rise of 0.8m) is at **2.938** (without freeboard). The Freeboard for the Study is 0.5m and is applied to determine Finished Floor Level for habitable rooms.

Finished Floor Level

The total required Finished Floor Level for habitable rooms is 3.438 m AHD

Note - Finished floor level is usually 225mm above the pad level.

Disclaimer

The maps show the estimated areas of inundation for the 1% AEP projected for the year 2100 having regard to a sea level rise of 0.8m. The report nominates required minimum habitable room minimum finished floor level. This minimum level is determined from the best data to date held by Council. This storm tide inundation flood level, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating flood levels. Storm tide Inundation analysis is based on comprehensive computer modelling calibrated against actual storm tides. The website provides locations, street names, aerial photography and available storm tide inundation data for the Shire areas that were included in the JB Pacific Storm Tide Inundation Methodologies Study. This property reporting tool is not a substitute for a detailed Coastal Engineering analysis of a property and should not be relied upon where the reliance may result in loss, damage or injury. While every effort is taken to ensure the information in this report is accurate and up to date, Douglas Shire Council makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs that may occur as a result of the report being inaccurate or incomplete in any way or for any reason.

2018 Douglas Shire Council Planning Scheme Property Report

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Property Information

Property Address Pandanus Caravan Pk
[107 Davidson Street PORT DOUGLAS](#)

Lot Plan [2RP723702](#) (Freehold - 8650m²)



Selected Property



Easements



Land Parcels

Douglas Shire Planning Scheme 2018 version 1.0

The table below provides a summary of the Zones and Overlays that apply to the selected property.

Zoning

Applicable Zone









Tourist Accommodation

More Information

- [View Section 6.2.14 Tourist Accommodation Zone Code](#)
- [View Section 6.2.14 Tourist Accommodation Zone Compliance table](#)
- [View Section 6.2.14 Tourist Accommodation Zone Assessment table](#)

Douglas Shire Planning Scheme 2018 version 1.0

The table below provides a summary of the Zones and Overlays that apply to the selected property.

 Local Plans	Applicable Precinct or Area Port Douglas - Craiglie	More Information <ul style="list-style-type: none"> View Section 7.2.4 Port Douglas/Craiglie Local Plan Code View Section 7.2.4 Port Douglas/Craiglie Local Plan Compliance table
 Acid Sulfate Soils	Applicable Precinct or Area Acid Sulfate Soils (< 5m AHD)	More Information <ul style="list-style-type: none"> View Section 8.2.1 Acid Sulfate Soils Overlay Code View Section 8.2.1 Acid Sulfate Soils Overlay Compliance table
 Coastal Processes	Applicable Precinct or Area Erosion Prone Area	More Information <ul style="list-style-type: none"> View Section 8.2.3 Coastal Environment Overlay Code View Section 8.2.3 Coastal Environment Overlay Compliance table
 Flood Storm	Applicable Precinct or Area Medium Storm Tide Hazard	More Information <ul style="list-style-type: none"> View Section 8.2.4 Flood and Storm Tide Hazard Overlay Code View Section 8.2.4 Flood and Storm Tide Hazard Overlay Compliance table
 Landscape Values	Scenic Buffer Area Scenic route buffer View corridor	More Information <ul style="list-style-type: none"> View Section 8.2.6 Landscape Values Overlay Code View Section 8.2.6 Landscape Values Overlay Compliance table
 Transport Noise Corridors	Applicable Precinct or Area Category 1: 58 dB(A) =< Noise Level < 63 dB(A) Category 2: 63 dB(A) < Noise Level < 68 dB(A)	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table
 Transport Pedestrian Cycle	Applicable Precinct or Area Neighbourhood Route	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table
 Transport Road Hierarchy	Applicable Precinct or Area Access Road Major Transport Corridor Buffer Area (State Controlled Road)	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table

Zoning

Applicable Zone

Tourist Accommodation

More Information

- [View Section 6.2.14 Tourist Accommodation Zone Code](#)
- [View Section 6.2.14 Tourist Accommodation Zone Compliance table](#)
- [View Section 6.2.14 Tourist Accommodation Zone Assessment table](#)



☒ Selected Property

☐ Land Parcels

Zoning

<input type="checkbox"/> Centre	<input type="checkbox"/> Community Facilities	<input type="checkbox"/> Conservation	<input type="checkbox"/> Environmental Management
<input type="checkbox"/> Industry	<input type="checkbox"/> Low Density Residential	<input type="checkbox"/> Low-medium Density Residential	<input type="checkbox"/> Medium Density Residential
<input type="checkbox"/> Recreation and Open Space	<input type="checkbox"/> Rural	<input type="checkbox"/> Rural Residential	<input type="checkbox"/> Special Purpose
<input type="checkbox"/> Tourism	<input type="checkbox"/> Tourist Accommodation		

Local Plans

Applicable Precinct or Area


Port Douglas - Craiglie

More Information

- [View Section 7.2.4 Port Douglas/Craiglie Local Plan Code](#)
- [View Section 7.2.4 Port Douglas/Craiglie Local Plan Compliance table](#)



 Selected Property

 Land Parcels

Transport Investigation Corridor

 Transport Investigation Corridors

Major Road Connections

 Major Road Connections

Major Road Connections (No Arrow)

 Major Road Connections

Daintree River to Bloomfield

 Daintree River to Bloomfield

Creb Track and Quaid Road

 Creb Track







60 metre contour

 60 metre contour


Local Plan Boundary

 Local Plan Boundary

Local Plan Sub Precincts

 1d Limited Development
  1a Town Centre
  1b Waterfront North
  1c Waterfront South
  1e Community and Recreation
  1f Flagstaff Hill

Local Plan Precincts

Not Part of a Precinct
 Precinct 4
  Precinct 1
  Precinct 2
  Precinct 3
  Precinct 8
  Precinct 5
  Precinct 6
  Precinct 7
  Precinct 9

Live Entertainment Precinct

 Live Entertainment Precinct

Indicative Future Open Space

 Indicative Future Open Space

 Road Reserve Esplanade

Acid Sulfate Soils

Applicable Precinct or Area
Acid Sulfate Soils (< 5m AHD)

- More Information**
- [View Section 8.2.1 Acid Sulfate Soils Overlay Code](#)
 - [View Section 8.2.1 Acid Sulfate Soils Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Acid Sulfate Soils

☒ Acid Sulfate Soils (< 5m AHD)

☐ Acid Sulfate Soils (5-20m AHD)

☐ all others

Coastal Processes

Applicable Precinct or Area
Erosion Prone Area

- More Information
- [View Section 8.2.3 Coastal Environment Overlay Code](#)
 - [View Section 8.2.3 Coastal Environment Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

☐ Coastal Management District

☒ Erosion Prone Area


Flood Storm

Applicable Precinct or Area
Medium Storm Tide Hazard


- More Information
- [View Section 8.2.4 Flood and Storm Tide Hazard Overlay Code](#)
 - [View Section 8.2.4 Flood and Storm Tide Hazard Overlay Compliance table](#)




 Selected Property

 Land Parcels

 Medium Storm Tide Hazard

 High Storm Tide Hazard

 100 Year ARI - Mossman Port Douglas and Daintree Flood Studies

 Floodplain Assessment Overlay

Landscape Values

Scenic Buffer Area
Scenic route buffer
View corridor

- More Information**
- [View Section 8.2.6 Landscape Values Overlay Code](#)
 - [View Section 8.2.6 Landscape Values Overlay Compliance table](#)



<p>Selected Property</p> <p> Selected Property</p>	<p>Land Parcels</p> <p> Land Parcels</p>	<p>Scenic Buffer Area</p> <p> Gateway</p> <p> View corridor</p>	<p> Lookout</p> <p> all others</p>	<p> Scenic route</p> <p> Scenic route buffer</p>
---	---	--	------------------------------------	--

<p>Landscape Values</p> <p> Coastal scenery</p>	<p> High landscape values</p>	<p> Medium Landscape Value</p>	<p> all others</p>
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Transport Noise Corridors

Applicable Precinct or Area

Category 1: 58 dB(A) ≤ Noise Level < 63 dB(A)
Category 2: 63 dB(A) < Noise Level < 68 dB(A)

More Information

- [View Section 8.2.10 Transport Network Overlay Code](#)
- [View Section 8.2.10 Transport Network Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Transport Noise Corridors Mandatory Area

- | | | |
|--|--|--|
| <input type="checkbox"/> Category 0: Noise Level < 58 dB(A) | <input type="checkbox"/> Category 1: 58 dB(A) ≤ Noise Level < 63 dB(A) | <input type="checkbox"/> Category 2: 63 dB(A) < Noise Level < 68 dB(A) |
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Transport Noise Corridors Voluntary Area

- | | | |
|--|--|--|
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Transport Pedestrian Cycle

Applicable Precinct or Area
Neighbourhood Route

- More Information**
- [View Section 8.2.10 Transport Network Overlay Code](#)
 - [View Section 8.2.10 Transport Network Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Pedestrian and Cycle Network

- | | | | |
|--|--|--|---|
| — District Route | - - Future Principal Route | — Iconic Recreation Route | — Neighbourhood Route |
| — Principal Route | - - Strategic Investigation Route | — all others | |

Transport Road Hierarchy

Applicable Precinct or Area

Access Road
Major Transport Corridor Buffer Area (State Controlled Road)

More Information

- [View Section 8.2.10 Transport Network Overlay Code](#)
- [View Section 8.2.10 Transport Network Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Road Hierarchy

- | | | | |
|---|---|---|--|
| — Access Road | — Arterial Road | — Collector Road | — Industrial Road |
| — Major Rural Road | — Minor Rural Road | — Sub Arterial Road | — Unformed Road |
| — all others | | | |

☐ Major Transport Corridor Buffer Area

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Storm Tide Inundation Property Report

The following report has been automatically generated to provide a general indication of development related information applying to the nominated land parcel.

For more information refer to the [JB Pacific Storm Tide Inundation Methodology Study](#). This report is not intended to replace the need for carrying out a detailed assessment of Council and State controls or the need to seek your own professional advice on any town planning instrument, local law or other controls that may impact on the existing or intended use of the premise mentioned in this report. For further information please contact Council by phone: [07 4099 9444](tel:0740999444) or [1800 026 318](tel:1800026318) or email enquiries@douglas.qld.gov.au.

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The purpose of the Douglas Shire Storm Tide Inundation Methodologies Study was to review and analyse different methodologies, identify a best practise model for the Shire's coastal urban areas, run this preferred best practise model and calculate the minimum heights for the 1% AEP (Annual Exceedance Probability) storm tide inundation for the year 2100 having regard to a 0.8m sea level rise for urban coastal properties.

Excerpt from the JB Pacific Storm Tide Inundation Methodology Report -

Storm Tide Inundation

The Douglas Shire coastline experiences a range of hydrodynamic, waves, and morphologic processes that are linked through dependant and independent variables. This includes the underlying astronomical tide, the passage of local storms and cyclones, the interaction of storm surges along the open coastline, the local wave climate, any sheltering provided by nearshore reefs, and the role of nearshore and dune vegetation. A range of these coastal processes are shown in Figure 2-1.

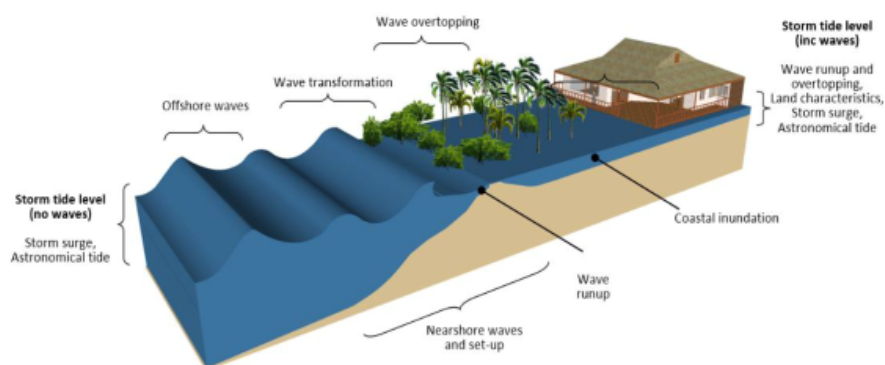


Figure 2-1: Drivers of coastal risk

Importantly storm tide inundation can be from the overtopping at the foreshore as well as wave runup through estuaries and inundate from "behind" a locality. Check out the animation of this activity through the local estuaries in the animation on Council's website.

Future Year 2100 Projected Levels

On 2 July 2017 the Planning Act 2016 came into effect as part of the Queensland Government's commitment to delivering planning reform across the State and the State Planning Policies reinstating the need to consider the 1% AEP (Average Exceedance Probability) Storm Tide Inundation level for the year 2100 with a 0.8m sea level rise. The 1% AEP is referred to as the one in one hundred year event. The 1%AEP is the minimum we need to consider and plan for.

Freeboard

There are numerous variants that can affect the modelled levels. To account for the differences in these variants a "freeboard" is applied. For the JB Pacific Storm Tide Inundation Methodology Study these differences have been considered within a nominal 0.5m freeboard level. Minimum levels for habitable rooms need to consider the Finished Floor Level (FFL) being the 1%AEP level plus the 0.5m freeboard. This value is a measurement at AHD (Australian Height Datum).

AHD Levels

A Licensed Surveyor should be engaged to determine the accurate AHD for a property. Contours and levels identified through Queensland Globe are estimated from LIDAR calculations and may not be 100% accurate.

Property Information

Property Address [Pandanus Caravan Pk](#)
[107 Davidson Street PORT DOUGLAS](#)

Lot Plan (- m²)



☒ Selected Property

☐ Easements


☐ Property

Storm Tide Inundation Property Information

The information below provides details of the projected Future Year 2100 Storm Tide Inundation Level that considers a Sea Level Rise of 0.8m AHD



 Selected Property

 Affected by the 1 % AEP Event for the year 2100

JPacific summary Information



 Selected Property

StormTide Levels Overview

 3 to 4

 2 to 3

 1 to 2

 0.1 to 1

 0 to 0

Storm Tide Range Detailed



 Selected Property

StormTide Levels Detailed

 Below 0.33000
  2.16968
  2.32640
  2.47331
  2.76642
  2.91969
  3.18777 and above

The Level for Construction – for Storm Tide Inundation Considerations

The lot is affected by storm tide inundation for the Year 2100, 1 in 100 (1% AEP) event. The 1% AEP for the year 2100 (including a Sea Level Rise of 0.8m) is at **2.927** (without freeboard). The Freeboard for the Study is 0.5m and is applied to determine Finished Floor Level for habitable rooms.

Finished Floor Level

The total required Finished Floor Level for habitable rooms is 3.427 m AHD

Note - Finished floor level is usually 225mm above the pad level.

Disclaimer

The maps show the estimated areas of inundation for the 1% AEP projected for the year 2100 having regard to a sea level rise of 0.8m. The report nominates required minimum habitable room minimum finished floor level. This minimum level is determined from the best data to date held by Council. This storm tide inundation flood level, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating flood levels. Storm tide Inundation analysis is based on comprehensive computer modelling calibrated against actual storm tides. The website provides locations, street names, aerial photography and available storm tide inundation data for the Shire areas that were included in the JB Pacific Storm Tide Inundation Methodologies Study. This property reporting tool is not a substitute for a detailed Coastal Engineering analysis of a property and should not be relied upon where the reliance may result in loss, damage or injury. While every effort is taken to ensure the information in this report is accurate and up to date, Douglas Shire Council makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs that may occur as a result of the report being inaccurate or incomplete in any way or for any reason.

2018 Douglas Shire Council Planning Scheme Property Report

The following report has been automatically generated to provide a general indication of development related information applying to the premise.

For more information and to determine if the mapping layers are applicable, refer to the [2018 Douglas Shire Council Planning Scheme](#). This report is not intended to replace the need for carrying out a detailed assessment of Council and State controls or the need to seek your own professional advice on any town planning instrument, local law or other controls that may impact on the existing or intended use of the premise mentioned in this report. For further information please contact Council by phone: [07 4099 9444](tel:0740999444) or [1800 026 318](tel:1800026318) or email enquiries@douglas.qld.gov.au.

Visit Council's website to apply for an [official property search or certificate](#), or contact the [Department of Natural Resources, Mines and Energy](#) to undertake a title search to ascertain how easements may affect a premise.

Property Information

Property Address
Dougies Backpackers
[109-111 Davidson Street PORT DOUGLAS](#)

Lot Plan
[3RP909815](#) (Freehold - 6703m²)



Selected Property



Easements



Land Parcels

Douglas Shire Planning Scheme 2018 version 1.0

The table below provides a summary of the Zones and Overlays that apply to the selected property.

Zoning

Applicable Zone





Tourist Accommodation

More Information

- [View Section 6.2.14 Tourist Accommodation Zone Code](#)
- [View Section 6.2.14 Tourist Accommodation Zone Compliance table](#)
- [View Section 6.2.14 Tourist Accommodation Zone Assessment table](#)

Douglas Shire Planning Scheme 2018 version 1.0

The table below provides a summary of the Zones and Overlays that apply to the selected property.

 Local Plans	Applicable Precinct or Area Port Douglas - Craiglie	More Information <ul style="list-style-type: none"> View Section 7.2.4 Port Douglas/Craiglie Local Plan Code View Section 7.2.4 Port Douglas/Craiglie Local Plan Compliance table
 Acid Sulfate Soils	Applicable Precinct or Area Acid Sulfate Soils (< 5m AHD)	More Information <ul style="list-style-type: none"> View Section 8.2.1 Acid Sulfate Soils Overlay Code View Section 8.2.1 Acid Sulfate Soils Overlay Compliance table
 Coastal Processes	Applicable Precinct or Area Erosion Prone Area	More Information <ul style="list-style-type: none"> View Section 8.2.3 Coastal Environment Overlay Code View Section 8.2.3 Coastal Environment Overlay Compliance table
 Flood Storm	Applicable Precinct or Area Medium Storm Tide Hazard High Storm Tide Hazard 100 Year ARI - Mosman and Port Douglas Flood Studies	More Information <ul style="list-style-type: none"> View Section 8.2.4 Flood and Storm Tide Hazard Overlay Code View Section 8.2.4 Flood and Storm Tide Hazard Overlay Compliance table
 Landscape Values	Scenic Buffer Area Scenic route buffer View corridor	More Information <ul style="list-style-type: none"> View Section 8.2.6 Landscape Values Overlay Code View Section 8.2.6 Landscape Values Overlay Compliance table
 Transport Noise Corridors	Applicable Precinct or Area Category 1: 58 dB(A) =< Noise Level < 63 dB(A) Category 2: 63 dB(A) < Noise Level < 68 dB(A)	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table
 Transport Pedestrian Cycle	Applicable Precinct or Area Neighbourhood Route	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table
 Transport Road Hierarchy	Applicable Precinct or Area Access Road Major Transport Corridor Buffer Area (State Controlled Road)	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table

Zoning

Applicable Zone

Tourist Accommodation

More Information

- [View Section 6.2.14 Tourist Accommodation Zone Code](#)
- [View Section 6.2.14 Tourist Accommodation Zone Compliance table](#)
- [View Section 6.2.14 Tourist Accommodation Zone Assessment table](#)



☒ Selected Property

☐ Land Parcels

Zoning

<input type="checkbox"/> Centre	<input type="checkbox"/> Community Facilities	<input type="checkbox"/> Conservation	<input type="checkbox"/> Environmental Management
<input type="checkbox"/> Industry	<input type="checkbox"/> Low Density Residential	<input type="checkbox"/> Low-medium Density Residential	<input type="checkbox"/> Medium Density Residential
<input type="checkbox"/> Recreation and Open Space	<input type="checkbox"/> Rural	<input type="checkbox"/> Rural Residential	<input type="checkbox"/> Special Purpose
<input type="checkbox"/> Tourism	<input type="checkbox"/> Tourist Accommodation		

Local Plans

Applicable Precinct or Area

Port Douglas - Craigie

More Information

- [View Section 7.2.4 Port Douglas/Craigie Local Plan Code](#)
- [View Section 7.2.4 Port Douglas/Craigie Local Plan Compliance table](#)



 Selected Property

 Land Parcels

Transport Investigation Corridor

 Transport Investigation Corridors

Major Road Connections

 Major Road Connections

Major Road Connections (No Arrow)

 Major Road Connections

Daintree River to Bloomfield

 Daintree River to Bloomfield

Creb Track and Quaid Road

 Creb Track







60 metre contour

 60 metre contour

Local Plan Boundary

 Local Plan Boundary

Local Plan Sub Precincts

 1d Limited Development
  1a Town Centre
  1b Waterfront North
  1c Waterfront South
  1e Community and Recreation
  1f Flagstaff Hill

Local Plan Precincts

Not Part of a Precinct
 Precinct 4
  Precinct 1
  Precinct 2
  Precinct 3
  Precinct 8
  Precinct 5
  Precinct 6
  Precinct 7
  Precinct 9

Live Entertainment Precinct

 Live Entertainment Precinct

Indicative Future Open Space

 Indicative Future Open Space

 Road Reserve Esplanade

Acid Sulfate Soils

Applicable Precinct or Area
Acid Sulfate Soils (< 5m AHD)

- More Information**
- [View Section 8.2.1 Acid Sulfate Soils Overlay Code](#)
 - [View Section 8.2.1 Acid Sulfate Soils Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Acid Sulfate Soils

☒ Acid Sulfate Soils (< 5m AHD)

☐ Acid Sulfate Soils (5-20m AHD)

☐ all others

Coastal Processes

Applicable Precinct or Area
Erosion Prone Area

- More Information
- [View Section 8.2.3 Coastal Environment Overlay Code](#)
 - [View Section 8.2.3 Coastal Environment Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

☐ Coastal Management District

☐ Erosion Prone Area

Flood Storm

Applicable Precinct or Area


Medium Storm Tide Hazard
High Storm Tide Hazard
100 Year ARI - Mosman and Port Douglas Flood Studies

More Information


- [View Section 8.2.4 Flood and Storm Tide Hazard Overlay Code](#)
- [View Section 8.2.4 Flood and Storm Tide Hazard Overlay Compliance table](#)




 Selected Property

 Land Parcels

 Medium Storm Tide Hazard

 High Storm Tide Hazard

 100 Year ARI - Mossman Port Douglas and Daintree Flood Studies

 Floodplain Assessment Overlay

Landscape Values

Scenic Buffer Area
Scenic route buffer
View corridor

- More Information**
- [View Section 8.2.6 Landscape Values Overlay Code](#)
 - [View Section 8.2.6 Landscape Values Overlay Compliance table](#)



<p>Selected Property</p> <p> Selected Property</p>	<p>Land Parcels</p> <p> Land Parcels</p>	<p>Scenic Buffer Area</p> <p> Gateway</p> <p> View corridor</p>	<p> Lookout</p> <p> all others</p>	<p> Scenic route</p> <p> Scenic route buffer</p>
<p>Landscape Values</p> <p> Coastal scenery</p> <p> High landscape values</p> <p> Medium Landscape Value</p> <p> all others</p>				

Transport Noise Corridors

Applicable Precinct or Area

Category 1: 58 dB(A) ≤ Noise Level < 63 dB(A)
Category 2: 63 dB(A) < Noise Level < 68 dB(A)

More Information

- [View Section 8.2.10 Transport Network Overlay Code](#)
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☒ Selected Property

☐ Land Parcels

Transport Noise Corridors Mandatory Area

- | | | |
|--|--|--|
| <input type="checkbox"/> Category 0: Noise Level < 58 dB(A) | <input type="checkbox"/> Category 1: 58 dB(A) ≤ Noise Level < 63 dB(A) | <input type="checkbox"/> Category 2: 63 dB(A) < Noise Level < 68 dB(A) |
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Transport Noise Corridors Voluntary Area

- | | | |
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Transport Pedestrian Cycle

Applicable Precinct or Area
Neighbourhood Route

- More Information**
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☒ Selected Property

☐ Land Parcels

Pedestrian and Cycle Network

- | | | | |
|--|--|--|---|
| — District Route | - - Future Principal Route | — Iconic Recreation Route | — Neighbourhood Route |
| — Principal Route | - - Strategic Investigation Route | — all others | |

Transport Road Hierarchy

Applicable Precinct or Area

Access Road
Major Transport Corridor Buffer Area (State Controlled Road)

More Information

- [View Section 8.2.10 Transport Network Overlay Code](#)
- [View Section 8.2.10 Transport Network Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Road Hierarchy

- | | | | |
|---|---|---|--|
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☐ Major Transport Corridor Buffer Area

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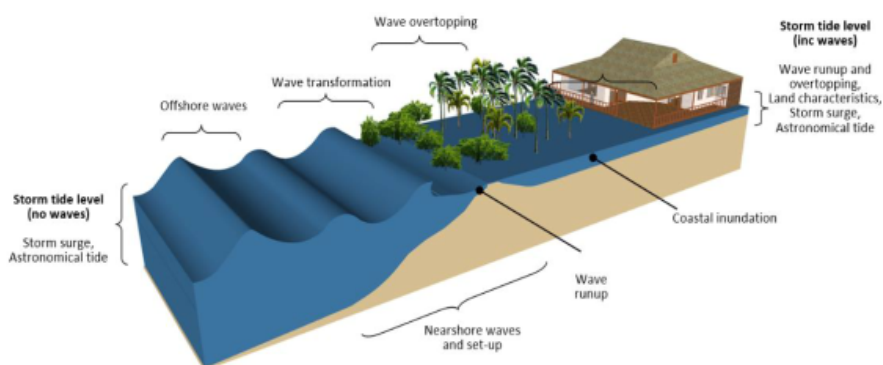


Figure 2-1: Drivers of coastal risk

Importantly storm tide inundation can be from the overtopping at the foreshore as well as wave runup through estuaries and inundate from "behind" a locality. Check out the animation of this activity through the local estuaries in the animation on Council's website.

Future Year 2100 Projected Levels

On 2 July 2017 the Planning Act 2016 came into effect as part of the Queensland Government's commitment to delivering planning reform across the State and the State Planning Policies reinstating the need to consider the 1% AEP (Average Exceedance Probability) Storm Tide Inundation level for the year 2100 with a 0.8m sea level rise. The 1% AEP is referred to as the one in one hundred year event. The 1%AEP is the minimum we need to consider and plan for.

Freeboard

There are numerous variants that can affect the modelled levels. To account for the differences in these variants a "freeboard" is applied. For the JB Pacific Storm Tide Inundation Methodology Study these differences have been considered within a nominal 0.5m freeboard level. Minimum levels for habitable rooms need to consider the Finished Floor Level (FFL) being the 1%AEP level plus the 0.5m freeboard. This value is a measurement at AHD (Australian Height Datum).

AHD Levels

A Licensed Surveyor should be engaged to determine the accurate AHD for a property. Contours and levels identified through Queensland Globe are estimated from LIDAR calculations and may not be 100% accurate.

Property Information

Property Address [Dougies Backpackers](#)
[109-111 Davidson Street PORT DOUGLAS](#)

Lot Plan (- m²)



☒ Selected Property

☐ Easements


☐ Property

Storm Tide Inundation Property Information

The information below provides details of the projected Future Year 2100 Storm Tide Inundation Level that considers a Sea Level Rise of 0.8m AHD



 Selected Property

 Affected by the 1 % AEP Event for the year 2100

JPacific summary Information



 Selected Property

StormTide Levels Overview

 3 to 4

 2 to 3

 1 to 2

 0.1 to 1

 0 to 0

Storm Tide Range Detailed



 Selected Property

StormTide Levels Detailed

 Below 0.33000  2.16968  2.32640  2.47331  2.76642  2.91969  3.18777 and above

The Level for Construction – for Storm Tide Inundation Considerations

The lot is affected by storm tide inundation for the Year 2100, 1 in 100 (1% AEP) event. The 1% AEP for the year 2100 (including a Sea Level Rise of 0.8m) is at **2.925** (without freeboard). The Freeboard for the Study is 0.5m and is applied to determine Finished Floor Level for habitable rooms.

Finished Floor Level

The total required Finished Floor Level for habitable rooms is 3.425 m AHD

Note - Finished floor level is usually 225mm above the pad level.

Disclaimer

The maps show the estimated areas of inundation for the 1% AEP projected for the year 2100 having regard to a sea level rise of 0.8m. The report nominates required minimum habitable room minimum finished floor level. This minimum level is determined from the best data to date held by Council. This storm tide inundation flood level, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating flood levels. Storm tide Inundation analysis is based on comprehensive computer modelling calibrated against actual storm tides. The website provides locations, street names, aerial photography and available storm tide inundation data for the Shire areas that were included in the JB Pacific Storm Tide Inundation Methodologies Study. This property reporting tool is not a substitute for a detailed Coastal Engineering analysis of a property and should not be relied upon where the reliance may result in loss, damage or injury. While every effort is taken to ensure the information in this report is accurate and up to date, Douglas Shire Council makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs that may occur as a result of the report being inaccurate or incomplete in any way or for any reason.

2018 Douglas Shire Council Planning Scheme Property Report

The following report has been automatically generated to provide a general indication of development related information applying to the premise.

For more information and to determine if the mapping layers are applicable, refer to the [2018 Douglas Shire Council Planning Scheme](#). This report is not intended to replace the need for carrying out a detailed assessment of Council and State controls or the need to seek your own professional advice on any town planning instrument, local law or other controls that may impact on the existing or intended use of the premise mentioned in this report. For further information please contact Council by phone: [07 4099 9444](tel:0740999444) or [1800 026 318](tel:1800026318) or email enquiries@douglas.qld.gov.au.

Visit Council's website to apply for an [official property search or certificate](#), or contact the [Department of Natural Resources, Mines and Energy](#) to undertake a title search to ascertain how easements may affect a premise.

Property Information

Property Address Zai Restaurant
[113 Davidson Street PORT DOUGLAS](#)

Lot Plan [4RP909815](#) (Freehold - 1470m²)



 Selected Property

 Easements

 Land Parcels

Douglas Shire Planning Scheme 2018 version 1.0

The table below provides a summary of the Zones and Overlays that apply to the selected property.

Zoning







Applicable Zone
Tourist Accommodation

More Information

- [View Section 6.2.14 Tourist Accommodation Zone Code](#)
- [View Section 6.2.14 Tourist Accommodation Zone Compliance table](#)
- [View Section 6.2.14 Tourist Accommodation Zone Assessment table](#)

Douglas Shire Planning Scheme 2018 version 1.0

The table below provides a summary of the Zones and Overlays that apply to the selected property.

 Local Plans	Applicable Precinct or Area Port Douglas - Craiglie	More Information <ul style="list-style-type: none"> View Section 7.2.4 Port Douglas/Craiglie Local Plan Code View Section 7.2.4 Port Douglas/Craiglie Local Plan Compliance table
 Acid Sulfate Soils	Applicable Precinct or Area Acid Sulfate Soils (< 5m AHD)	More Information <ul style="list-style-type: none"> View Section 8.2.1 Acid Sulfate Soils Overlay Code View Section 8.2.1 Acid Sulfate Soils Overlay Compliance table
 Landscape Values	Scenic Buffer Area Scenic route buffer View corridor	More Information <ul style="list-style-type: none"> View Section 8.2.6 Landscape Values Overlay Code View Section 8.2.6 Landscape Values Overlay Compliance table
 Transport Noise Corridors	Applicable Precinct or Area Category 1: 58 dB(A) =< Noise Level < 63 dB(A) Category 2: 63 dB(A) < Noise Level < 68 dB(A)	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table
 Transport Pedestrian Cycle	Applicable Precinct or Area Neighbourhood Route	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table
 Transport Road Hierarchy	Applicable Precinct or Area Access Road Major Transport Corridor Buffer Area (State Controlled Road)	More Information <ul style="list-style-type: none"> View Section 8.2.10 Transport Network Overlay Code View Section 8.2.10 Transport Network Overlay Compliance table

Zoning

Applicable Zone

Tourist Accommodation

More Information

- [View Section 6.2.14 Tourist Accommodation Zone Code](#)
- [View Section 6.2.14 Tourist Accommodation Zone Compliance table](#)
- [View Section 6.2.14 Tourist Accommodation Zone Assessment table](#)



☒ Selected Property

☐ Land Parcels

Zoning

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> Centre | <input type="checkbox"/> Community Facilities | <input type="checkbox"/> Conservation | <input type="checkbox"/> Environmental Management |
| <input type="checkbox"/> Industry | <input type="checkbox"/> Low Density Residential | <input type="checkbox"/> Low-medium Density Residential | <input type="checkbox"/> Medium Density Residential |
| <input type="checkbox"/> Recreation and Open Space | <input type="checkbox"/> Rural | <input type="checkbox"/> Rural Residential | <input type="checkbox"/> Special Purpose |
| <input type="checkbox"/> Tourism | <input type="checkbox"/> Tourist Accommodation | | |

Local Plans

Applicable Precinct or Area


Port Douglas - Craiglie

More Information

- [View Section 7.2.4 Port Douglas/Craiglie Local Plan Code](#)
- [View Section 7.2.4 Port Douglas/Craiglie Local Plan Compliance table](#)



 Selected Property

 Land Parcels

Transport Investigation Corridor

 Transport Investigation Corridors

Major Road Connections

 Major Road Connections

Major Road Connections (No Arrow)

 Major Road Connections

Daintree River to Bloomfield

 Daintree River to Bloomfield

Creb Track and Quaid Road

 Creb Track







60 metre contour

 60 metre contour


Local Plan Boundary

 Local Plan Boundary

Local Plan Sub Precincts

 1a Town Centre
  1b Waterfront North
  1c Waterfront South
 1d Limited Development
  1e Community and Recreation
  1f Flagstaff Hill

Local Plan Precincts

Not Part of a Precinct
 Precinct 4
  Precinct 1
  Precinct 2
  Precinct 3
 Precinct 8
  Precinct 5
  Precinct 6
  Precinct 7
 Precinct 9

Live Entertainment Precinct

 Live Entertainment Precinct

Indicative Future Open Space

 Indicative Future Open Space

 Road Reserve Esplanade

Acid Sulfate Soils

Applicable Precinct or Area
Acid Sulfate Soils (< 5m AHD)

- More Information**
- [View Section 8.2.1 Acid Sulfate Soils Overlay Code](#)
 - [View Section 8.2.1 Acid Sulfate Soils Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Acid Sulfate Soils

☒ Acid Sulfate Soils (< 5m AHD)

☐ Acid Sulfate Soils (5-20m AHD)

☐ all others

Landscape Values

Scenic Buffer Area

Scenic route buffer

View corridor

- More Information

 - [View Section 8.2.6 Landscape Values Overlay Code](#)
 - [View Section 8.2.6 Landscape Values Overlay Compliance table](#)



Selected Property

Land Parcels

Scenic Buffer Area

Gateway

View corridor

Lookout

all others

Scenic route

Scenic route buffer

Landscape Values

Coastal scenery

High landscape values

Medium Landscape Value

all others

Transport Noise Corridors

Applicable Precinct or Area

Category 1: 58 dB(A) =< Noise Level < 63 dB(A)
Category 2: 63 dB(A) < Noise Level < 68 dB(A)

More Information

- [View Section 8.2.10 Transport Network Overlay Code](#)
- [View Section 8.2.10 Transport Network Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Transport Noise Corridors Mandatory Area

- | | | |
|---|---|--|
| <input type="checkbox"/> Category 0: Noise Level < 58 dB(A) | <input type="checkbox"/> Category 1: 58 dB(A) =< Noise Level < 63 dB(A) | <input type="checkbox"/> Category 2: 63 dB(A) < Noise Level < 68 dB(A) |
| <input type="checkbox"/> Category 3: 68 dB(A) =< Noise Level < 73 dB(A) | <input type="checkbox"/> Category 4: Noise Level >= 73 dB(A) | <input type="checkbox"/> all others |

Transport Noise Corridors Voluntary Area

- | | | |
|---|---|--|
| <input type="checkbox"/> Category 0: Noise Level < 58 dB(A) | <input type="checkbox"/> Category 1: 58 dB(A) =< Noise Level < 63 dB(A) | <input type="checkbox"/> Category 2: 63 dB(A) < Noise Level < 68 dB(A) |
| <input type="checkbox"/> Category 3: 68 dB(A) =< Noise Level < 73 dB(A) | <input type="checkbox"/> Category 4: Noise Level >= 73 dB(A) | <input type="checkbox"/> all others |

Transport Pedestrian Cycle

Applicable Precinct or Area
Neighbourhood Route

- More Information**
- [View Section 8.2.10 Transport Network Overlay Code](#)
 - [View Section 8.2.10 Transport Network Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Pedestrian and Cycle Network

- | | | | |
|-----------------|-------------------------------|-------------------------|---------------------|
| District Route | Future Principal Route | Iconic Recreation Route | Neighbourhood Route |
| Principal Route | Strategic Investigation Route | all others | |

Transport Road Hierarchy

Applicable Precinct or Area

Access Road
Major Transport Corridor Buffer Area (State Controlled Road)

More Information

- [View Section 8.2.10 Transport Network Overlay Code](#)
- [View Section 8.2.10 Transport Network Overlay Compliance table](#)



☒ Selected Property

☐ Land Parcels

Road Hierarchy

- | | | | |
|------------------|------------------|-------------------|-----------------|
| Access Road | Arterial Road | Collector Road | Industrial Road |
| Major Rural Road | Minor Rural Road | Sub Arterial Road | Unformed Road |
| all others | | | |

☐ Major Transport Corridor Buffer Area

Disclaimer

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Storm Tide Inundation Property Report

The following report has been automatically generated to provide a general indication of development related information applying to the nominated land parcel.

For more information refer to the [JB Pacific Storm Tide Inundation Methodology Study](#). This report is not intended to replace the need for carrying out a detailed assessment of Council and State controls or the need to seek your own professional advice on any town planning instrument, local law or other controls that may impact on the existing or intended use of the premise mentioned in this report. For further information please contact Council by phone: [07 4099 9444](tel:0740999444) or [1800 026 318](tel:1800026318) or email enquiries@douglas.qld.gov.au.

A separate [Council Planning Scheme Property Report](#) tool is available for information relating to Council's 2018 Planning Scheme.

Visit Council's website to apply for an [official property search or certificate](#), or contact the [Department of Natural Resources, Mines and Energy](#) to undertake a title search to ascertain how easements may affect land.

JB Pacific Storm Tide Inundation Methodology Study

The purpose of the Douglas Shire Storm Tide Inundation Methodologies Study was to review and analyse different methodologies, identify a best practise model for the Shire's coastal urban areas, run this preferred best practise model and calculate the minimum heights for the 1% AEP (Annual Exceedance Probability) storm tide inundation for the year 2100 having regard to a 0.8m sea level rise for urban coastal properties.

Excerpt from the JB Pacific Storm Tide Inundation Methodology Report -

Storm Tide Inundation

The Douglas Shire coastline experiences a range of hydrodynamic, waves, and morphologic processes that are linked through dependant and independent variables. This includes the underlying astronomical tide, the passage of local storms and cyclones, the interaction of storm surges along the open coastline, the local wave climate, any sheltering provided by nearshore reefs, and the role of nearshore and dune vegetation. A range of these coastal processes are shown in Figure 2-1.

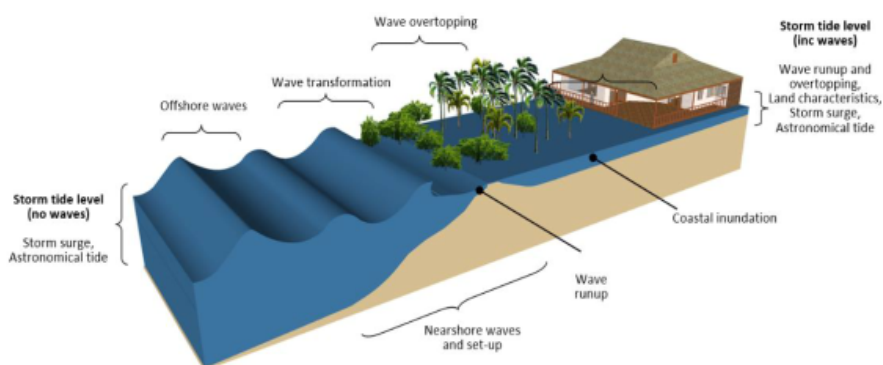


Figure 2-1: Drivers of coastal risk

Importantly storm tide inundation can be from the overtopping at the foreshore as well as wave runup through estuaries and inundate from "behind" a locality. Check out the animation of this activity through the local estuaries in the animation on Council's website.

Future Year 2100 Projected Levels

On 2 July 2017 the Planning Act 2016 came into effect as part of the Queensland Government's commitment to delivering planning reform across the State and the State Planning Policies reinstating the need to consider the 1% AEP (Average Exceedance Probability) Storm Tide Inundation level for the year 2100 with a 0.8m sea level rise. The 1% AEP is referred to as the one in one hundred year event. The 1%AEP is the minimum we need to consider and plan for.

Freeboard

There are numerous variants that can affect the modelled levels. To account for the differences in these variants a "freeboard" is applied. For the JB Pacific Storm Tide Inundation Methodology Study these differences have been considered within a nominal 0.5m freeboard level. Minimum levels for habitable rooms need to consider the Finished Floor Level (FFL) being the 1%AEP level plus the 0.5m freeboard. This value is a measurement at AHD (Australian Height Datum).

AHD Levels

A Licensed Surveyor should be engaged to determine the accurate AHD for a property. Contours and levels identified through Queensland Globe are estimated from LIDAR calculations and may not be 100% accurate.


Property Information

Property Address [Zai Restaurant](#)
[113 Davidson Street PORT DOUGLAS](#)

Lot Plan (- m²)



☒ Selected Property

 Easements

☐ Property

Storm Tide Inundation Property Information

The information below provides details of the projected Future Year 2100 Storm Tide Inundation Level that considers a Sea Level Rise of 0.8m AHD

This property is not affected by the 1 % AEP Event for the year 2100

JB Pacific summary Information



☒ Selected Property

StormTide Levels Overview

☒ 3 to 4

☐ 2 to 3

☐ 1 to 2

☐ 0.1 to 1

☐ 0 to 0

The Level for Construction – for Storm Tide Inundation Considerations

The Storm Tide inundation Study determined the lot is not affected by the 1% AEP for the year 2100. Consideration should be given to the height of nearby properties, the 1% AEP mapping of such properties, and due regard to freeboard.

Disclaimer

The maps show the estimated areas of inundation for the 1% AEP projected for the year 2100 having regard to a sea level rise of 0.8m. The report nominates required minimum habitable room minimum finished floor level. This minimum level is determined from the best data to date held by Council. This storm tide inundation flood level, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating flood levels. Storm tide Inundation analysis is based on comprehensive computer modelling calibrated against actual storm tides. The website provides locations, street names, aerial photography and available storm tide inundation data for the Shire areas that were included in the JB Pacific Storm Tide Inundation Methodologies Study. This property reporting tool is not a substitute for a detailed Coastal Engineering analysis of a property and should not be relied upon where the reliance may result in loss, damage or injury. While every effort is taken to ensure the information in this report is accurate and up to date, Douglas Shire Council makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs that may occur as a result of the report being inaccurate or incomplete in any way or for any reason.

State Assessment and Referral Agency

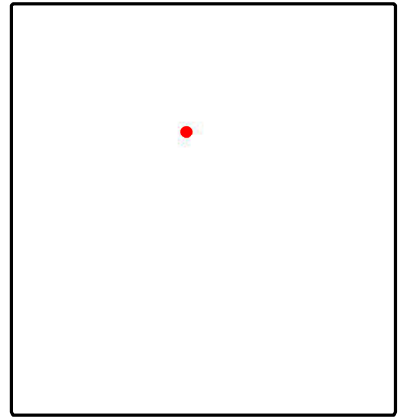
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Matters of Interest for all selected Lot Plans

Coastal area - erosion prone area
Coastal area - medium storm tide inundation area
Coastal area - high storm tide inundation area
Area within 25m of a State-controlled road
State-controlled road

Matters of Interest by Lot Plan

Lot Plan: 4RP909815 (Area: 1,470 m²)

Area within 25m of a State-controlled road
State-controlled road

Lot Plan: 2RP723702 (Area: 8,650 m²)

Coastal area - erosion prone area
Coastal area - medium storm tide inundation area
Area within 25m of a State-controlled road
State-controlled road

Lot Plan: 3RP909815 (Area: 6,703 m²)

Coastal area - erosion prone area
Coastal area - medium storm tide inundation area
Coastal area - high storm tide inundation area
Area within 25m of a State-controlled road
State-controlled road

Lot Plan: 1RP723702 (Area: 9,131 m²)

Coastal area - erosion prone area
Coastal area - medium storm tide inundation area
Area within 25m of a State-controlled road
State-controlled road



State Assessment and Referral Agency

Date: 07/03/2023



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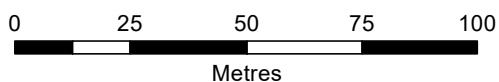
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Legend

Coastal area - high storm tide inundation area



Coastal area - high storm tide inundation area



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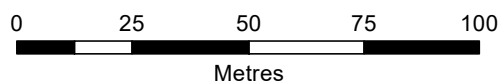
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Legend

Coastal area - medium storm tide inundation area



Coastal area - medium storm tide inundation area



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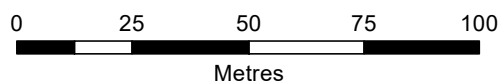
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Legend

Area within 25m of a State-controlled road



Area within 25m of a State-controlled road



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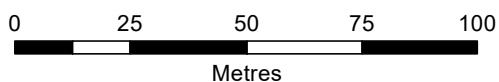
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Legend

Coastal area - erosion prone area

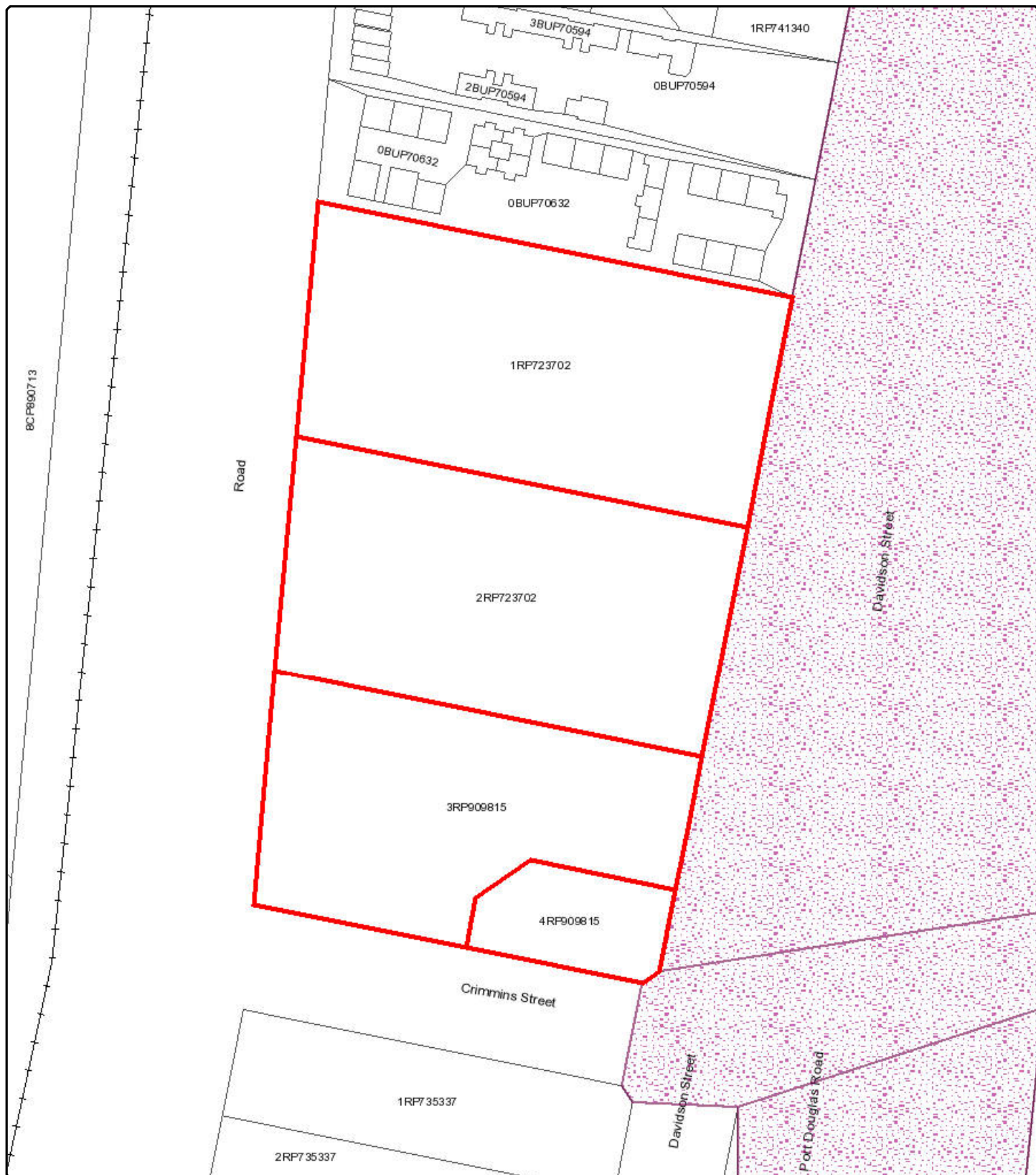


Coastal area - erosion prone area



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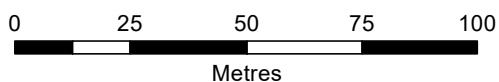
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Legend

State-controlled road



State-controlled road



Disclaimer:

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Attachment 5

Civil Engineering Report



DEVELOPMENT & PROPERTY SERVICES

ENGINEERING ASSESSMENT REPORT

CIVIL WORKS

LOTS 1&2 RP723702 & LOTS 3&4 RP909815
DAVIDSON STREET, PORT DOUGLAS, QLD 4877



Project No. 23001 Port Douglas by Gurner
Reference No. Engineering Assessment Port Douglas by Gurner
Date: 16 August 2023

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APPENDIX B	23001-SK002B DRAINAGE LAYOUT PLAN
APPENDIX C	23001-SK003B SITE SECTIONS
APPENDIX D	23001-SK004B EXTERNAL SEWER PLAN
APPENDIX E	SEWER DEMAND TABULATION - PRE DEVELOPMENT
APPENDIX F	SEWER DEMAND TABULATION - POST DEVELOPMENT
APPENDIX G	WATER DEMAND TABULATION - PRE DEVELOPMENT
APPENDIX H	WATER DEMAND TABULATION - POST DEVELOPMENT

1.0 INTRODUCTION AND BACKGROUND

Applin Consulting has been commissioned by Gurner TM Nominee P/L to undertake the civil engineering assessment report in support of the Application for a Development Permit for a Resort Complex and Short-Term Accommodation / Multiple Dwelling, located at 109-113 Davidson Street in Port Douglas.

Gurner TM Nominee P/L proposes to redevelop the 2.595Ha site, currently operating as Dougies Backpackers and Pandanus Tourist Park, described as Lots 1&2 RP723702 and Lots 3&4 RP909815, from the current 4 lots into a luxury hotel and private homes shown in **Figure 1.1** below.

Site access will be via Davidson Street for guests and residents whilst service vehicles will access off Crimmins Street.



Figure 1.1: Proposed Development Site

2.0 PROJECT DESCRIPTION

The proposed redevelopment of Lots 1&2 RP723702 and Lots 3&4 RP909815 (Dougies Backpackers and Pandanus Tourist Park) will require the demolition of the existing buildings and underground services and the clearing of the remaining site vegetation across the site to allow cutting and filling of approximately 9,500m³ of cut and the importing of approximately 15,000 m³ of fill to elevate and reshape the site for drainage purposes and ensure all proposed lots are above the predicted 1% AEP storm surge plus 2100 Sea Level Rise of 800mm plus 500mm freeboard (i.e. RL 3.43 m AHD).

Despite most of the site being above RL 3.43m AHD, the higher proposed site elevations of RL 4.65m AHD to RL 5.55m AHD along the rear boundary, RL 5.25m AHD to RL 4.7m AHD along the front boundary and an FFL of RL 5.8m AHD for the hotel is driven by the need for a service basement with sufficient head height to accommodate service vehicles and to minimise excavation into any ASS/PASS material.

A preliminary Layout and Grading Plan 23001-SK001B depicting the proposed works and perimeter retaining wall heights is included in **Appendix A**.

The site is surrounded by the following features:

- Cummins Street along the southern boundary
- Davidson Street along the front eastern boundary
- The existing Lychee Tree Holiday Apartments along the northern boundary
- Existing vegetation along the western boundary

This site is a prominent site in Port Douglas with all major service infrastructure surrounding the site.

3.0 EARTHWORKS AND ESC

3.1 Background

The proposed lots are currently fully developed and operated as a backpacker and a caravan park with buildings and amenities consistent with these types of operations.

Geotechnical testing by GEO (Report 23003AA-D-RV01 dated 27 April 2023 , submitted under separate cover and not included in this report) reveals minimal fill (average of 200-300mm) has been placed to obtain the current gently sloping nature. The site slopes east to west generally from around RL 4.7m along the Davidson Street frontage to around RL 3.0m along the rear boundary resulting in a gentle slope across the site of approximately 1.2%. Refer November 2022 survey by RPS as shown in **Figure 3.1** below.

Selective clearing has occurred across the site and the site generally drains in a sheet flow manner towards the rear boundary with the exception of the backpacker lot which drains to the Crimmins Street drain via a graded car park and piped drainage system.



3.2 Proposed Earthworks

Existing ground levels across the site generally range from low RL 3s along the rear boundary to high RL 4's along the Davidson Street frontage.

As discussed in Section 2.0 above, the FSL of the hotel of RL 5.8m AHD is set by the service basement's minimum head height of 4.5m, and gradient of the basement entrance ramp from Crimmins Street and the desire to limit excavation within any probable ASS/PASS material.

This hotel FSL and the need for connectivity with the surrounding buildings results in the site requiring the importation of fill and the retaining of the majority of the site's perimeter.

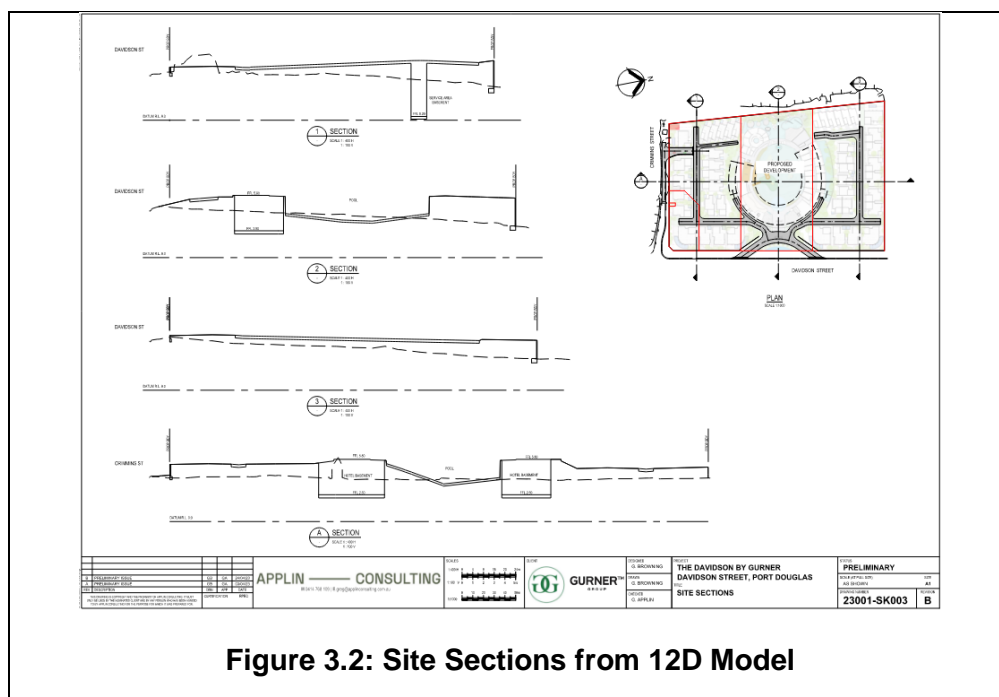
The perimeter retaining wall is generally keep below a height of 1.5m in the areas which are visible to the general public (i.e., north, east and south boundaries), however the height increases to approximately 2.6m high along the rear boundary where it is visually shielded by the existing vegetation.

Preliminary 12D modelling of the sites finished levels, basements and pools indicates earthworks volumes are in the order of the following amounts:

- Cut 9,500 m³
- Fill 24,500 m³

After consideration of bulking factors and fill won from services and retaining walls, the imported fill amount required for the proposed development is expected to be approximately 15,000m³.

A preliminary Site Sections Plan 23001-SK003B depicting the proposed works is included in **Appendix C** and below in **Figure 3.2** providing representation of the fill heights relative to the boundaries and throughout the site.



3.3 Site Geotechnical Testing

Site geotechnical testing and reporting has been carried out across the site by GEO P/L (Report 23003AA-D-RV01 dated 27 April 2023, submitted under separate cover and not included in this report) and the results indicates PASS materials maybe present in the marine clay unit which generally starts between RL 1.4m and RL -2.7m.

Given the FSL of the hotel site, only the proposed service basement and realigned sewer line have the potential to encounter any ASS/PASS material during construction. This will require treatment under an ASSMP which will be developed during the detailed design and submitted as part of the Operational Works submission.

3.4 Site Retaining

As discussed above perimeter retaining walls will be required with heights varying as summarised below:

- Along the northern boundary the wall height varies from 0.5m – 1.5m, with only the very back corner increasing to 2m to accommodate a local low point.
- Along Davidson Street frontage the wall height is generally less than 600 mm
- Along Crimmins Street frontage the wall height varies from 0.3m at the front corner to 1.5m at the service entrance and then increases to 2.2m in the rear corner just after the pump station.
- Along the rear (west) boundary the wall height varies from 2.2m – 2.6m, with most of the wall around 2.5m high.

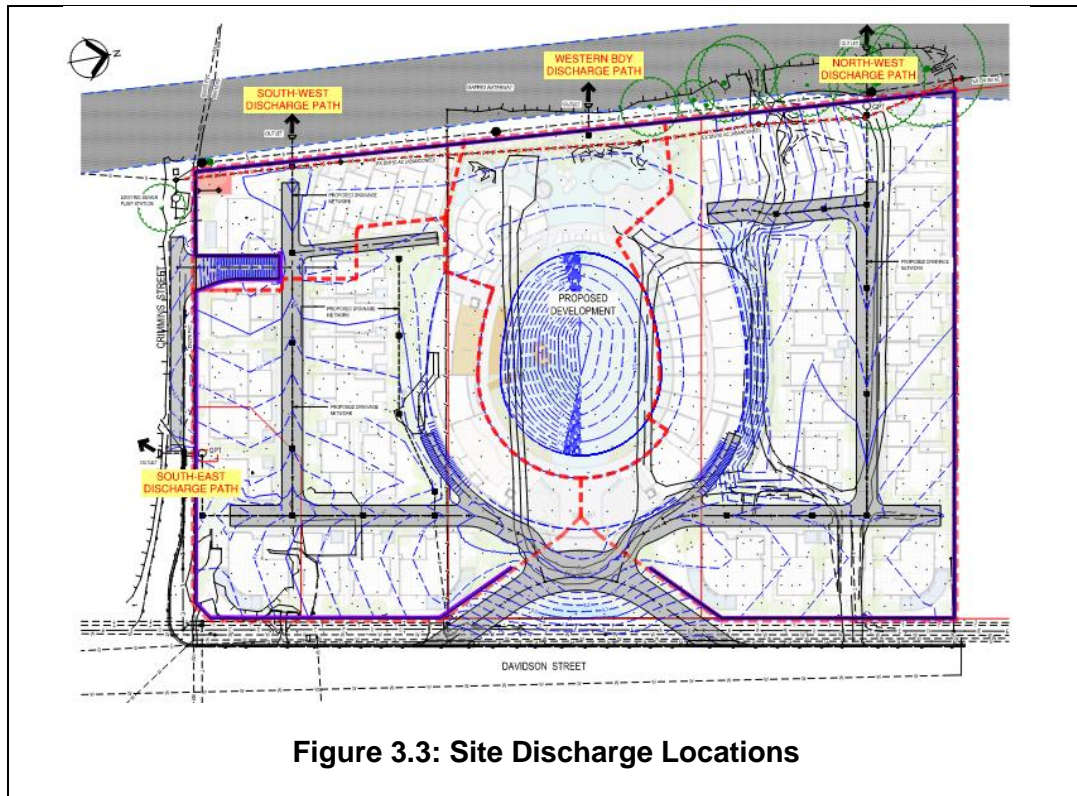
Retaining walls exceeding 1m in height will be engineered with RPEQ certification provided.

3.5 Erosion and Sediment Control

Erosion and sediment control can easily be managed on site given the site is very gently sloping and given there are no external flow paths through the site. The filling and shaping of the site will result in 4 defined drainage paths, namely:

- North-west corner,
- Half-way along western boundary
- South-west corner and
- Near the south-east corner).

Refer **Figure 3.3** below.



These erosion and sediment control works will be detailed in the Erosion and Sediment Control Plans submitted for the earthworks operational works approval and will be generally in accordance with best practice and FNQROC.

4.0 TRAFFIC

4.1 Traffic Impact Assessment

GHD, have undertaken a Traffic Impact Assessment (refer GHD Technical Memorandum Project No 12601184, submitted under separated cover and not included herein) for the proposed development to assess the existing traffic situation and identify any impacts from the proposed development.

The outcome of the assessment concluded *“It is deemed that the new high-end resort development will have minimal to negligible impact on to the existing traffic network. Traffic patterns around the development are expected to remain similar to the current situation as the events expected would not differ greatly to what the current businesses generate. With the new proposed aesthetic of the development, it could be expected that the frequency of events and visitors may increase however the generated traffic will remain similar.”*

We concur with this summary.

4.2 Internal Swept Paths

An internal swept path review for the design vehicles has been undertaken by GHD to confirm vehicles can be accommodated within the site.

We understand that a garbage collection truck will not be operating within the private homes area of the site as these homes are part of a community title scheme with garbage collection managed by the hotel. On nominated days during the week, hotel staff will transport household waste to the service basement area compactor unit, via a ute and trailer system, for collection by a private third-party arrangement.

4.3 Service Road Upgrade

The proposed development incorporates a service basement with a proposed entrance off Crimmins Street near the existing sewer pump station. Currently Crimmins Street is only sealed just past the Dougies Backpackers carpark crossover as shown in **Figure 4.1** below.



Figure 4.1: Crimmins Street Sealed Formation

A 3.5m wide concrete service road is proposed to accommodate service vehicles and also provide a more suitable access to Council's pump station, the proposed site transformers as depicted on the preliminary Layout and Grading Plan 23001-SK001B included in **Appendix A** and shown below in **Figure 4.2**.



Some minor reshaping and augmentation works will be required to the existing Crimmins Street pavement and concrete swale drain to accommodate the new concrete service road, but these works are minimal and can easily be detailed during the Operational Works stage.

5.0 STORMWATER DRAINAGE AND MANAGEMENT

This section will investigate the pre and post development's site drainage, how the drainage will be managed in accordance with FNQROC and QUDM requirements, and any impacts on the surrounding areas.

5.1 Existing Site Characteristics

As discussed, the site currently slopes east to west generally from around RL 4.7m along the Davidson Street frontage to around RL 3.0m along the rear boundary resulting in a gentle slope across the site of approximately 1.2%.

The site has no external catchments to contribute flows onto the site as the site is bound by Davidson Street on the eastern boundary, Crimmins Street on the southern boundary, existing open space vegetation on the western boundary and the Lychee Holiday Apartments on the northern boundary.

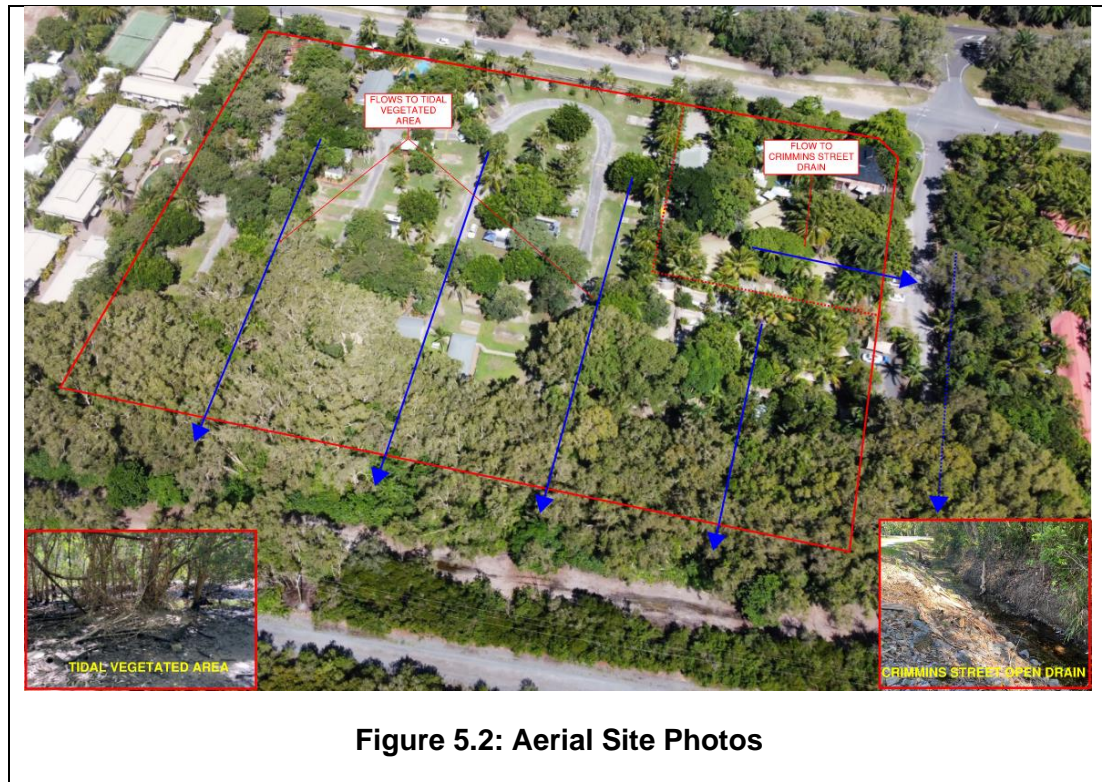
The site is fully developed as a caravan park and backpackers with associated infrastructure such as internal circulation roads, amenities buildings, carparks etc. Refer aerial site view in **Figure 5.1** below.



5.2 Existing Site Flows

As described above, the site gently slopes east to west in a sheet flow manner with most of the site discharging across the rear western boundary into the open space tidal vegetation area with the exception of the Dougies backpackers site, which discharges via the shaped carpark and internal piped drainage system into the Crimmins Street open drain, which then ultimately flows a short distance to the same tidal vegetated area.

Refer aerial photos in **Figure 5.2** below.



Estimated total pre-development 10%AEP and 1%AEP (Q10 / Q100) flows are calculated at **0.88 m3/s** and **1.59 m3/s** respectively as per the table below.

Catchment	Area m2	T'c*	I10 mm/hr	I100 mm/hr	C10**	C100**	Q 10 m3/s	Q 100 m3/s
Pandanus	24,480	15	153.3	220.5	0.8	1.0	0.834	1.50
Dougies	1,470	15	153.3	220.5	0.8	1.0	0.050	0.09

* Based on standard inlet time for an urban residential area up to 3% (note site is approx. 1.2%)

** Existing site is fully developed with continuing high occupancy

5.3 Proposed Site Drainage

A preliminary Drainage Layout Plan 23001-SK002B, depicting the proposed works is included in **Appendix B** and also shown below in **Figure 5.3**, providing representation of the proposed site drainage which has been developed in accordance with FNQROC and QUDM requirements to a preliminary level to provide an understanding of how the sites minor and major drainage will operate post construction.

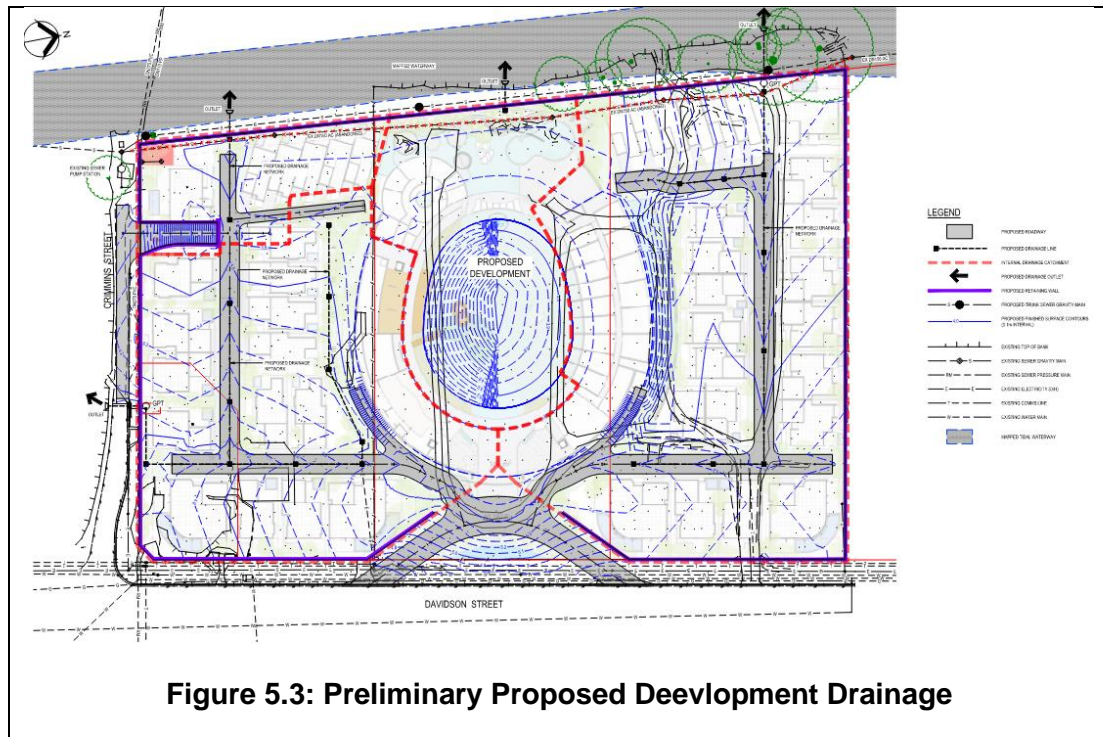


Figure 5.3: Preliminary Proposed Development Drainage

The detailed 12D earthworks model and preliminary road gradings were used to define the post development catchment areas for the sites proposed discharge points, which remain similar to the pre-developed state with the exception of a small amount of area draining to Davidson Street from the port cohere area.

Estimated total post-development 10%AEP and 1%AEP (Q10 / Q100) flows are calculated at **0.99 m3/s** and **1.59 m3/s** respectively as per the table below.

Catchment	Area m2	T'c*	I10 mm/hr	I100 mm/hr	C10**	C100**	Q 10 m3/s	Q 100 m3/s
Western North Cnr	11,020	15	153.3	220.5	0.9	1.0	0.42	0.67
Western Middle	4,260	15	153.3	220.5	0.9	1.0	0.16	0.26
Western South Cnr	1,890	15	153.3	220.5	0.9	1.0	0.07	0.12

Crimmins St Drain	7,820	15	153.3	220.5	0.9	1.0	0.30	0.48
Port Cochere	960	15	153.3	220.5	0.9	1.0	0.04	0.06

* Based on standard inlet time for an urban residential area up to 3% (note site is approx. 1.2%)

** Existing site is fully developed with continuing high occupancy

5.4 Pre and Post Development Q10/Q100 Flows

As previously discussed above, the site discharge outlet locations remain similar in the post development concept, however flows are slightly increased in minor storm events only whilst the major storm flows (Q100) remain generally unchanged at the tidal vegetated area discharge location.

The table below summarises the additional flows in the minor 10%AEP (Q10) event and any proposed action required to accommodate the flow increases:

Catchment	Pre Development Q10 Flows* m3/s	Post Development Q10 Flows m3/s	Change m3/s (Q10)	Proposed Action
Western North Cnr	0.28	0.42	-0.14	Nil – A decrease in Q10 flows is expected due to downsizing of the catchment
Western Middle	0.28	0.16	-0.12	Nil – A decrease in Q10 flows is expected due to downsizing of the catchment
Western South Cnr	0.28	0.07	-0.21	Nil – A decrease in Q10 flows is expected due to downsizing of the catchment
Crimmins St Drain	0.05	0.30	0.25	Concrete line the drain bottom to increase capacity to accommodate the additional flows and reduce maintenance.
Port Cochere	0.00	0.04	0.04	Nil – Flow is minimal at only 40l/s in a Q10 event

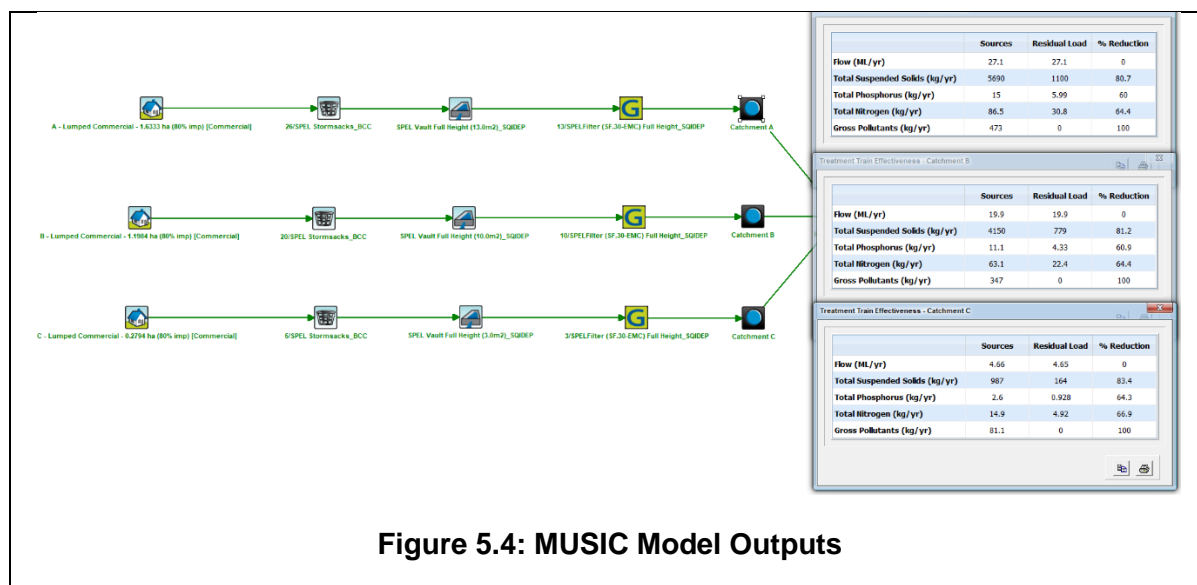
* Pre development flow were even distributed across the boundaries to provide indicative flow values

It can be noted from the table above that the only major increase in site discharge occurs into the Cummins Street drain. The proposed solution of concrete lining the bottom of this drain will increase the capacity significantly and easily accommodate the slight increase in flows whilst also reducing further maintenance by Council.

5.5 Stormwater Quality Treatment

In accordance with FNQROC's Design Manual D5 Stormwater Quality Management and the State Planning Policy, Spelstormwater have developed a site MUSIC model (sqz file not including but available is required, output is shown in **Figure 5.4** below), utilising their propriety products, to achieve the required stormwater quality objectives and achieve the below minimal treatments reductions:

- TSS 90% min removal (> 3.0 mm), 80% min removal (sand/sediment)
- TP 60% min removal
- TN 40% min removal



The above objectives are achieved by incorporating the following proposed cartridge type interception devices at the 3 main outlets listed below:

- Crimmins Street Drain Catchment
 - 26x SPEL Stormsack w/- 13x SPEL Filter cartridge in 2x modular SPELVault Precast Tank
- Western North Corner Catchment
 - 20x SPEL Stormsack w/- 10x SPEL Filter cartridge in a SPEL Precast Tank
- Western South Corner
 - 5x SPEL Stormsack w/- 3x SPEL Filter cartridge in a SPEL Precast Tank

The porte cochere area will remain untreated due to the minimal flows and the pool area also remains untreated due to minimal contaminate loadings from most of the catchment being pools.

Shown below in **Figure 5.5** is the General Arrangement Plan for a Spel Precast Concrete Tank as proposed.

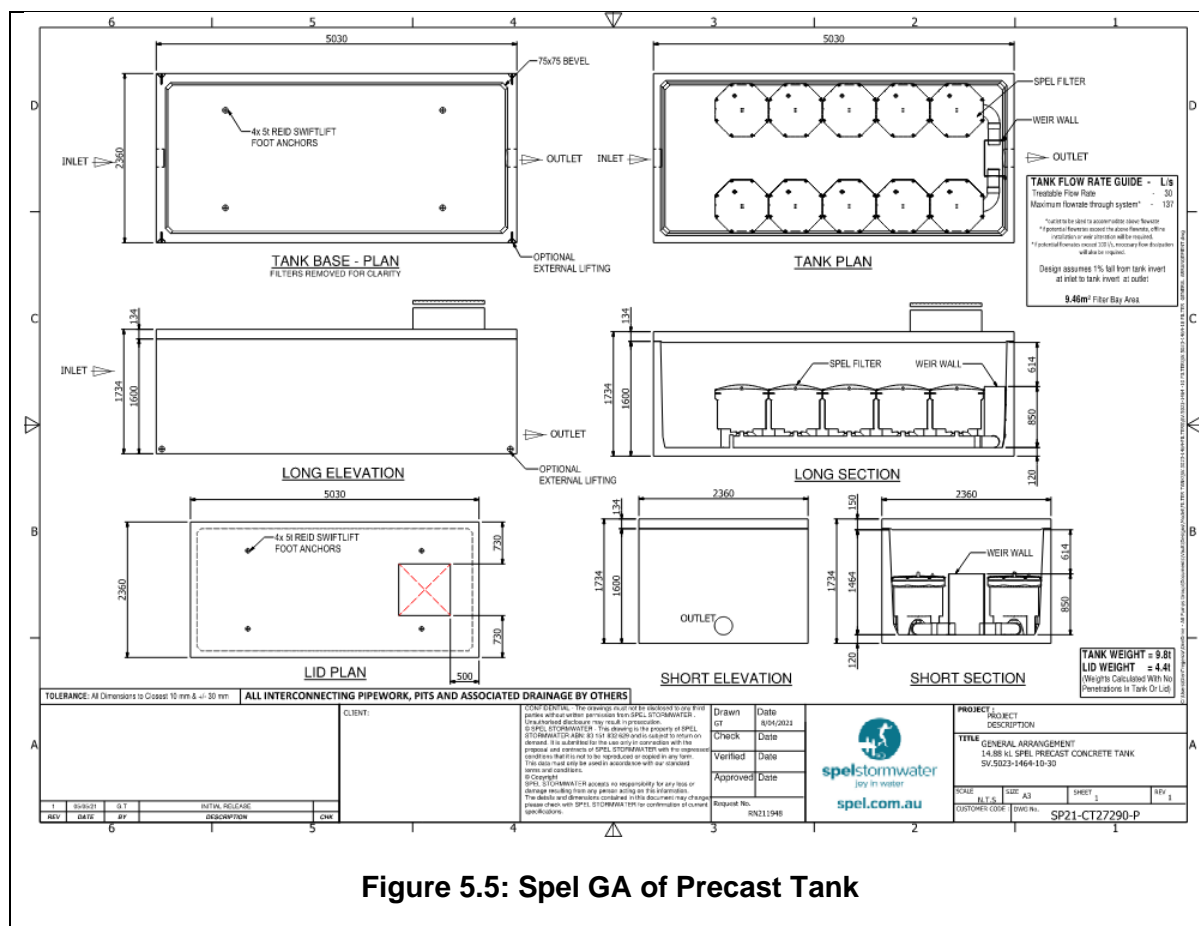


Figure 5.5: Spel GA of Precast Tank

5.6 Summary

The proposed developments stormwater will achieve compliance with FNQROC in terms of quality and discharge.

The development will only slightly increase minor storm discharge volumes whilst the major storm volumes remain generally unchanged. The minor increase will require a concrete lined base to the existing Crimmins Street drain to increase capacity and accommodate the minor flow increases.

6.0 SEWERAGE RETICULATION

6.1 Existing Infrastructure

The existing site (Dougies Backpackers and Pandanus Tourist Park) is currently sewered by a 4m deep 150 mm AC main, constructed in 1975, which crosses the boundary into the site in the north-east corner and then meanders along the rear boundary from anywhere between a 4.5m offset to a 5.7m offset before discharging into the existing sewer pump station in Crimmins Street. Refer **Figure 6.1** below.

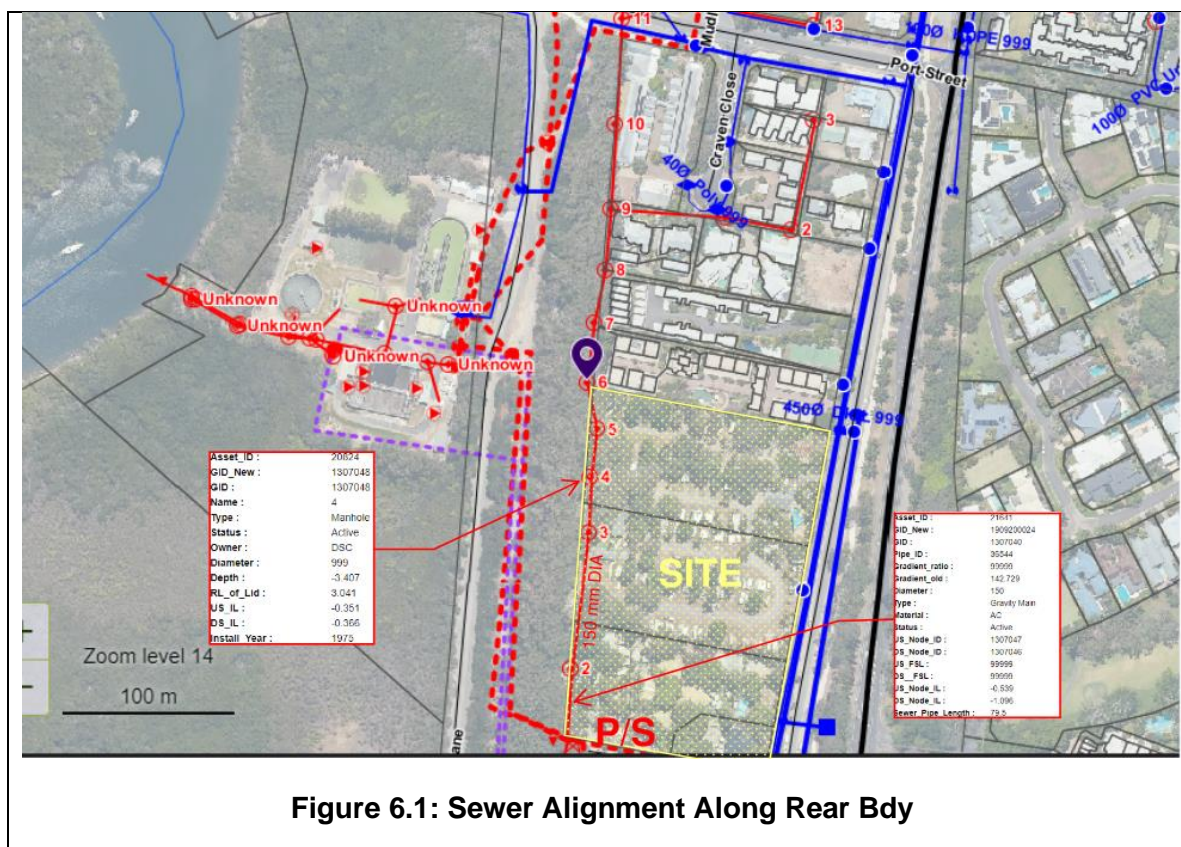


Figure 6.1: Sewer Alignment Along Rear Bdy

6.2 Pre and Post Development Demands

Pre-development and post-development sewerage demand calculations have been undertaken in accordance with the FNQROC Design Manual D7 Sewerage System to determine what impacts the site redevelopment will have on the existing sewerage infrastructure and to determine if any upgrade of sewerage infrastructure is needed to accommodate the redevelopment.

6.2.1 Pre-Development Demands

The existing site demands have been based off the current site facilities and cross referenced against the Douglas Shire Council Operation Permits. A summary of usage is shown in the table below:

Site	Van/Tent Sites	Cabins	Rooms	Managers House	Bar/Lounge/Cafe
Dougies Backpackers	40	-	20	1	100m2 (approx.)
Pandanus Tourist Park	103	15	-	1	100m2 (approx.)

In accordance with Section 7.08 Design Criteria Table 7.1 of FNQROC Design Manual D7 Sewerage System and the usage in the table above the existing site generates total EP demands for the combined sites of **236.7 EP** with a **ADWF of 0.740 l/s**.

Refer **Appendix E** for the Sewer Demand Tabulation - Pre Development calculations.

6.2.2 Post-Development Demands

The proposed site demands usage is shown in the table below:

Site	Private Homes	Hotel Rooms	Restaurant	Retail Space
Davidson by Gurner	44	112	402m2	-

In accordance with Section 7.08 Design Criteria Table 7.1 of FNQROC Design Manual D7 Sewerage System and the usage in the table above the proposed site development generates total EP demands of **243.3 EP** with a **ADWF of 0.760 l/s**.

Refer **Appendix F** for the Sewer Demand Tabulation - Post Development calculations.

6.3 Proposed Sewer

The development proposes to construct private houses with swimming pools and part of the hotel's pool area along the rear boundary within the current area occupied by the existing sewer main. As a result of this, and given the main is AC and close to 50 years old, the development proposes to realign this sewer outside of the rear property boundary in the open space area on a 2m offset between the rear boundary and the mapped "Tidal Waterway" zone.

The proposed realigned sewer will be constructed at the same IL's as the existing sewer and at the same grades, therefore not affecting the existing capacity. 150mm commercial connection points are proposed to service the whole site off the proposed 3 new manholes, to alleviate the need for deep internal sewers.

A preliminary External Sewer Plan 23001-SK004B depicting the proposed works is included in **Appendix F** with the area of works shown below in **Figure 6.2**.

7.0 WATER RETICULATION

7.1 Existing Infrastructure and Site Connection Points

Dougies Backpackers and Pandanus Tourist Park are currently serviced by separate water meters located at the front common boundary. Both meters connect to the existing 150mm AC main which fronts the site.

Adjacent to this 150mm main is a 450mm DICL trunk main, however, it is most likely the proposed development will connect to the existing 150mm AC main as proposed by H2O Consultants Hydraulic Design report.

7.2 Pre and Post Development Demands

Pre-development and post-development sewerage demand calculations have been undertaken in accordance with the FNQROC Design Manual D6 Water Reticulation to determine what impacts the site redevelopment will have on the existing water infrastructure and to determine if any upgrade of water infrastructure is needed to accommodate the redevelopment.

7.2.1 Pre-Development Demands

The existing site demands have been based off the current site facilities and cross referenced against the Douglas Shire Council Operation Permits. A summary of usage is shown in the table below:

Site	Van/Tent Sites	Cabins	Rooms	Managers House	Bar/Lounge/Cafe
Dougies Backpackers	40	-	20	1	100m2 (approx.)
Pandanus Tourist Park	103	15	-	1	-

In accordance with Section 6.07 Design Criteria Table 6.1 of FNQROC Design Manual D6 Water Reticulation and the usage in the table above the existing site generates total EP demands for the combined sites of **236.7 EP** with a **PH of 0.257 l/s**.

Refer **Appendix G** for the Water Demand Tabulation - Pre Development calculations.

7.2.2 Post-Development Demands

The proposed site demands usage is shown in the table below:

Site	Private Homes	Hotel Rooms	Restaurant	Retail Space
Davidson by Gurner	44	112	402m2	-

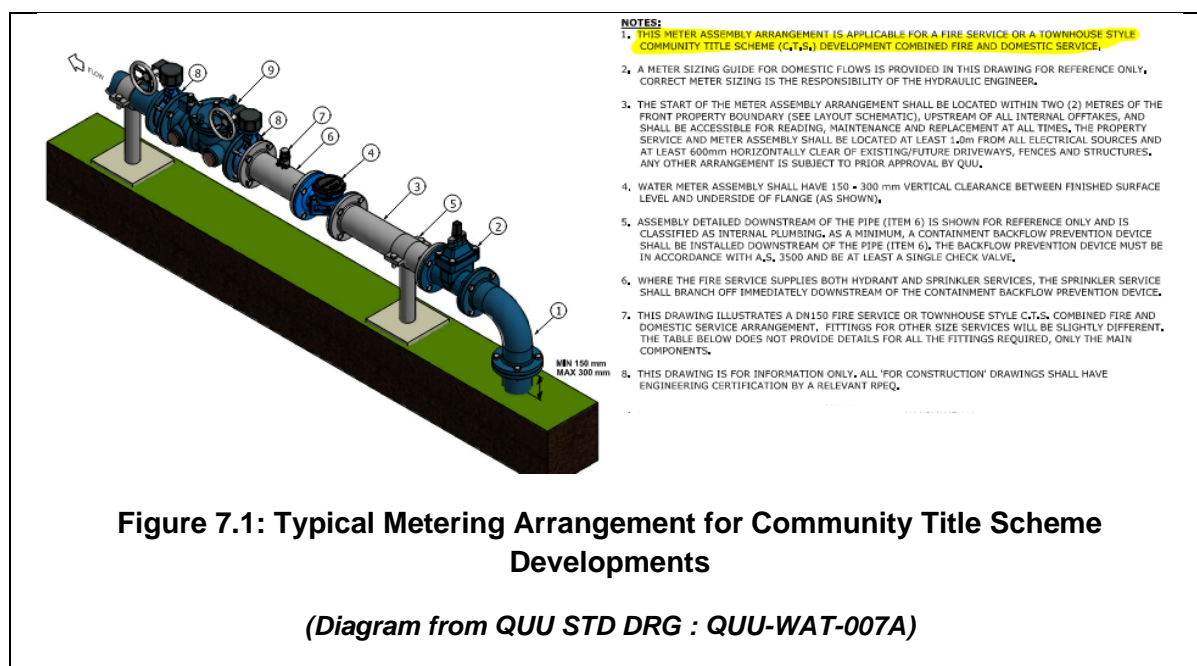
In accordance with Section 6.07 Design Criteria Table 6.1 of FNQROC Design Manual D6 Water Reticulation and the usage in the table above the proposed site development generates total EP demands of **243.3 EP** with a **PH of 0.264 l/s**.

Refer **Appendix H** for the Water Demand Tabulation - Post Development calculations.

7.3 Proposed Water Reticulation

As stated above and as proposed by H2O Consultants, the proposed development requires a single water connection point to service the site which will be appropriately sized by the hydraulic consultant during detailed design.

The connection point will require a standard Community Title Scheme type metering arrangement for potable and fire-fighting supplies, similar to that shown below in **Figure 7.1**. The private houses will also be supplied with a reticulated system with standard 20mm meters for household supplies, allowing each allotment to be billed for their water usage, like free hold titled properties.



Flow testing undertaken by H2O Consultants indicates the development will also require storage tanks and pumps for fire fighting services. This will be detailed and certified during the building stage of the development.

7.4 Summary

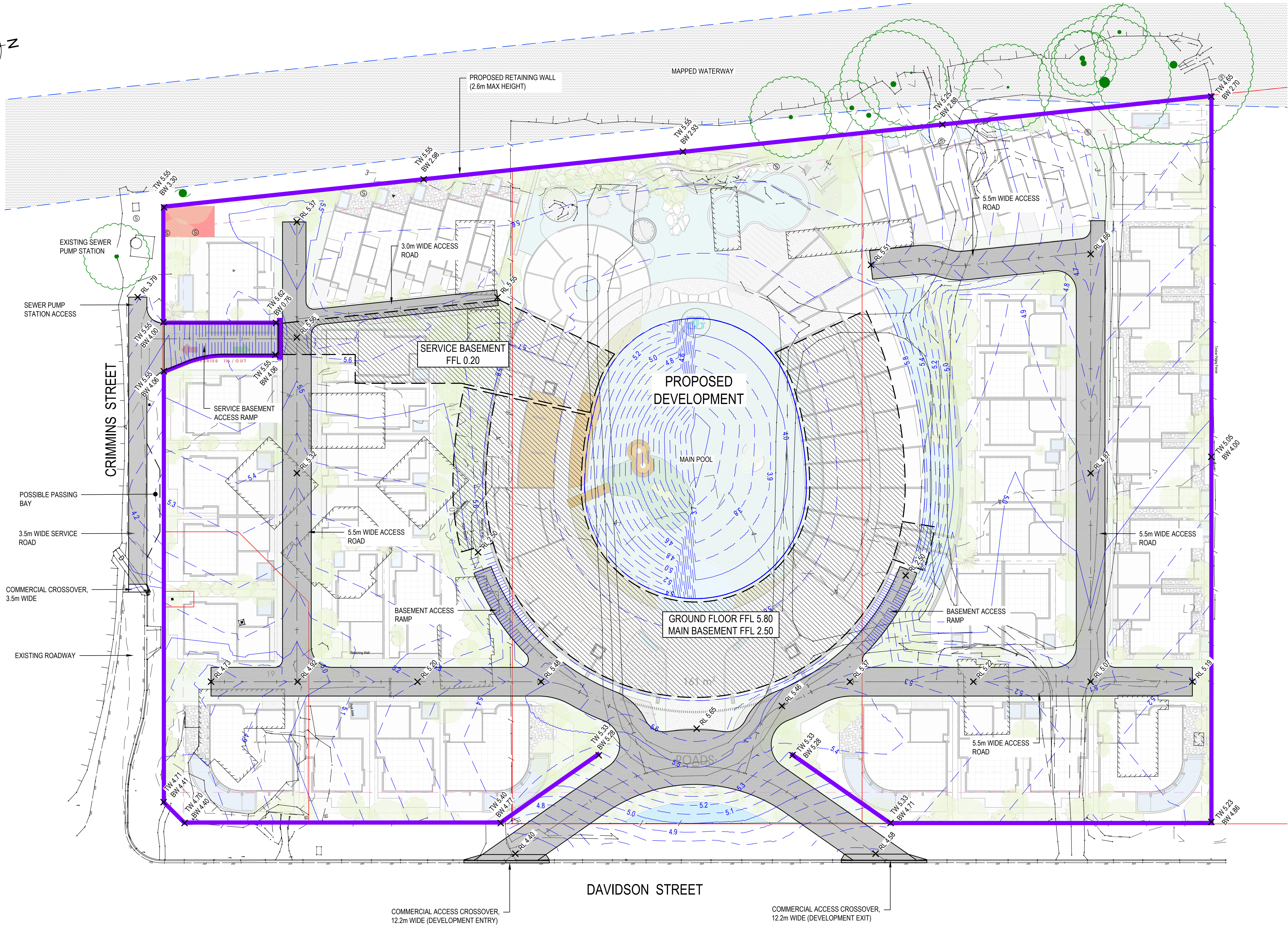
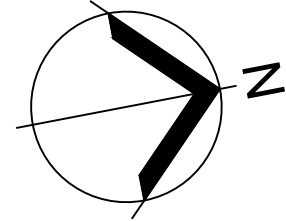
Based on the negligible increase on the existing water infrastructure of **6.6EP or 0.007 l/s PH**, the proposed development can be serviced without any upgrading of the water infrastructure.

8.0 CONCLUSION

The development complies with the Council codes and the supporting reports and preliminary plans attached have been thoroughly considered and partially designed to ensure surety to Council in terms of the future servicing.

The proposed development is straight forward in its nature, and we envisage no engineering concerns associated with the development.

APPENDIX A



LEGEND

- PROPOSED ROADWAY
- PROPOSED SURFACE LEVEL
- PROPOSED RETAINING WALL LEVEL (TW = TOP OF WALL / BW = BOTTOM OF WALL)
- INTERNAL DRAINAGE CATCHMENT
- PROPOSED RETAINING WALL
- PROPOSED FINISHED SURFACE CONTOURS (0.1m INTERVAL)
- EXISTING SEWER PRESSURE MAIN
- EXISTING TOP OF BANK
- EXISTING STRUCTURE
- MAPPED TIDAL WATERWAY

PLAN
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A	PRELIMINARY ISSUE	GB	GA	03/04/23	
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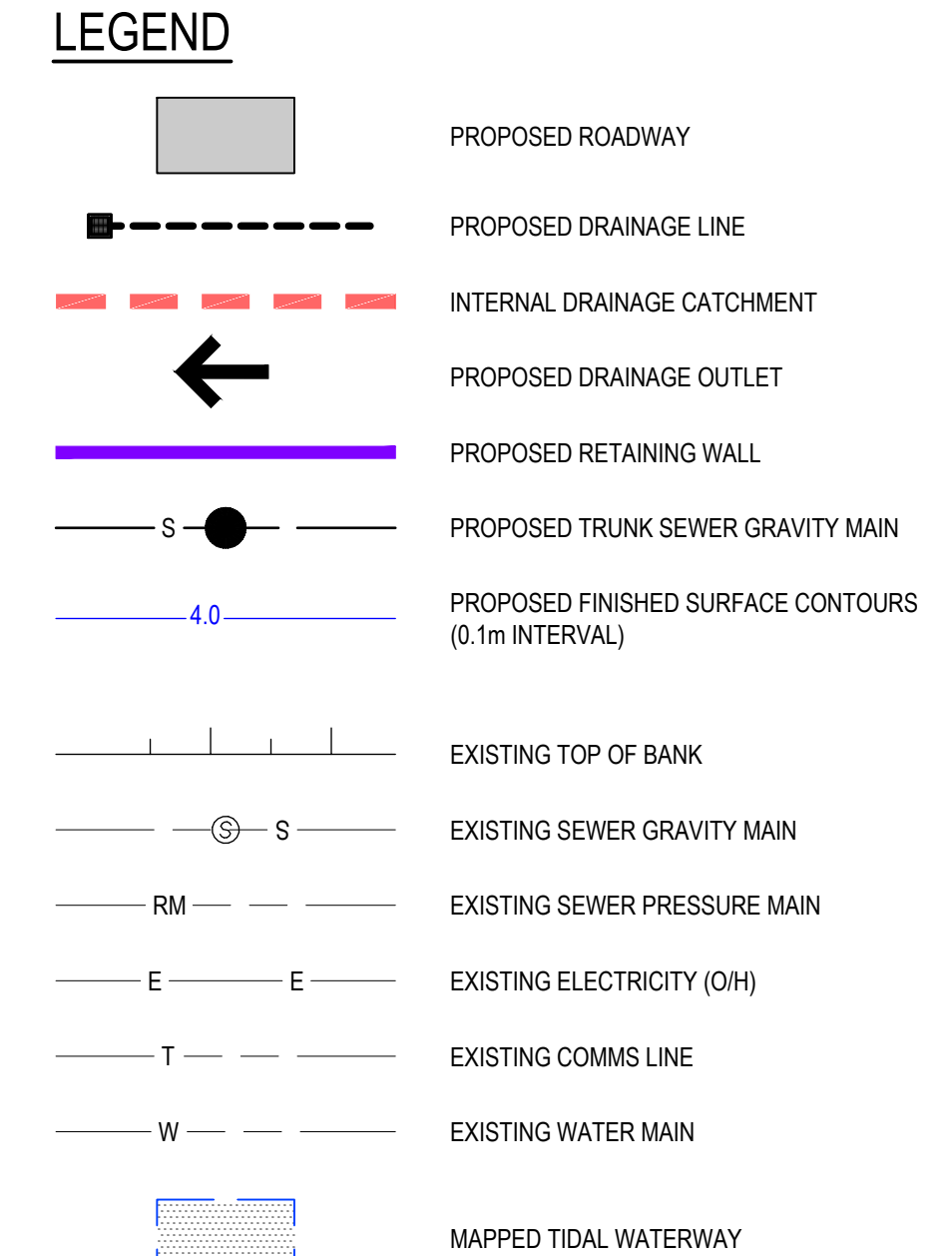


DESIGNED	G. BROWNING
DRAWN	G. BROWNING
CHECKED	G. APPLIN

PROJECT
THE DAVIDSON BY GURNER
DAVIDSON STREET, PORT DOUGLAS
TITLE
LAYOUT AND GRADING PLAN

STATUS PRELIMINARY	SIZE A1
SCALE (AT FULL SIZE) 1:400	REVISION B
DRAWING NUMBER 23001-SK001	

APPENDIX B



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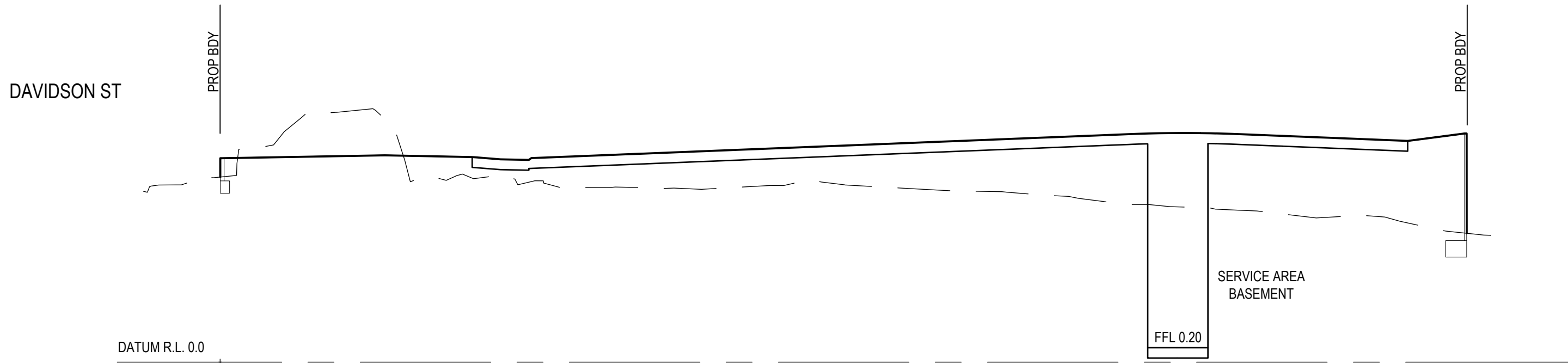


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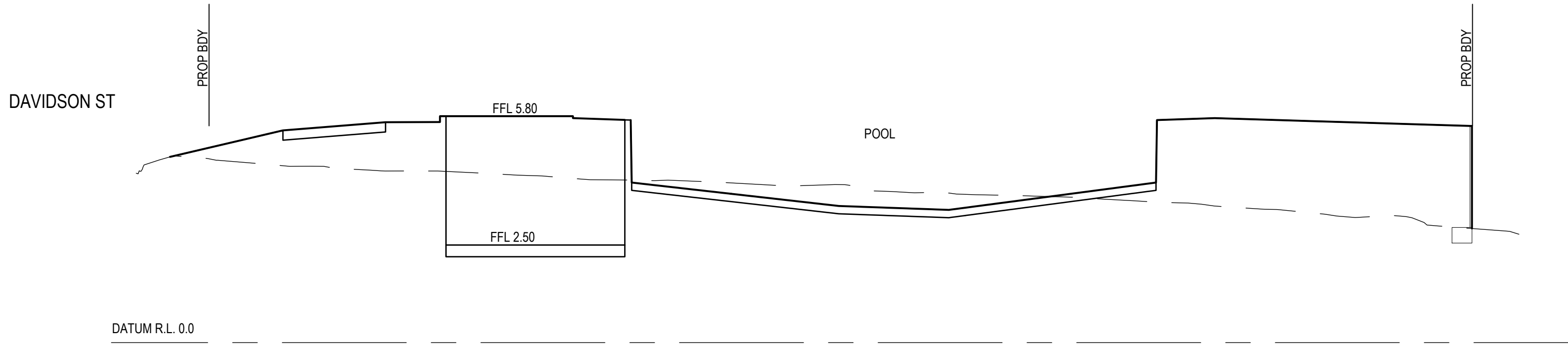
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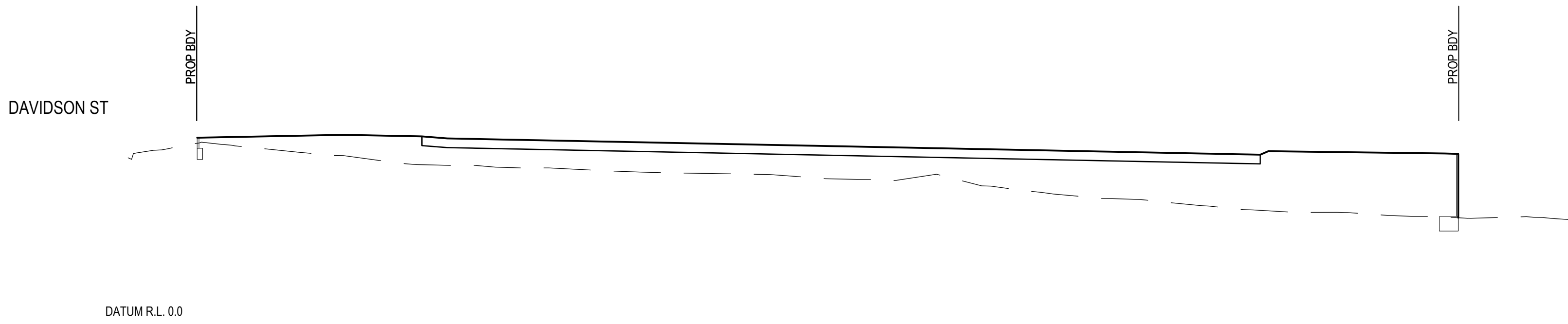
APPENDIX C



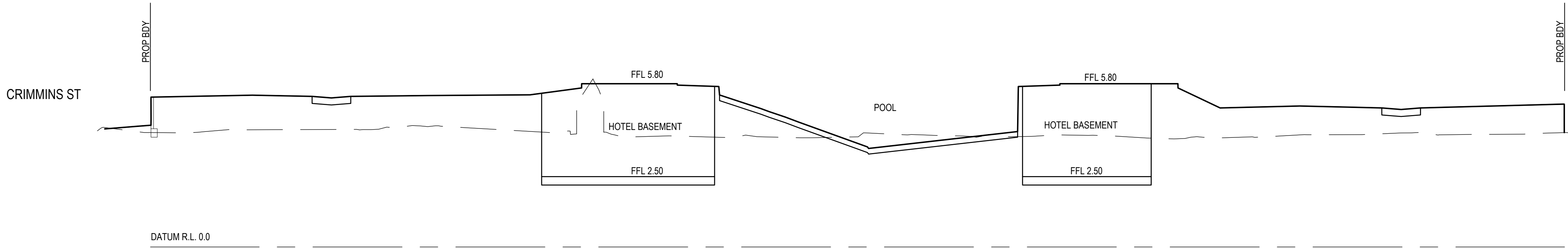
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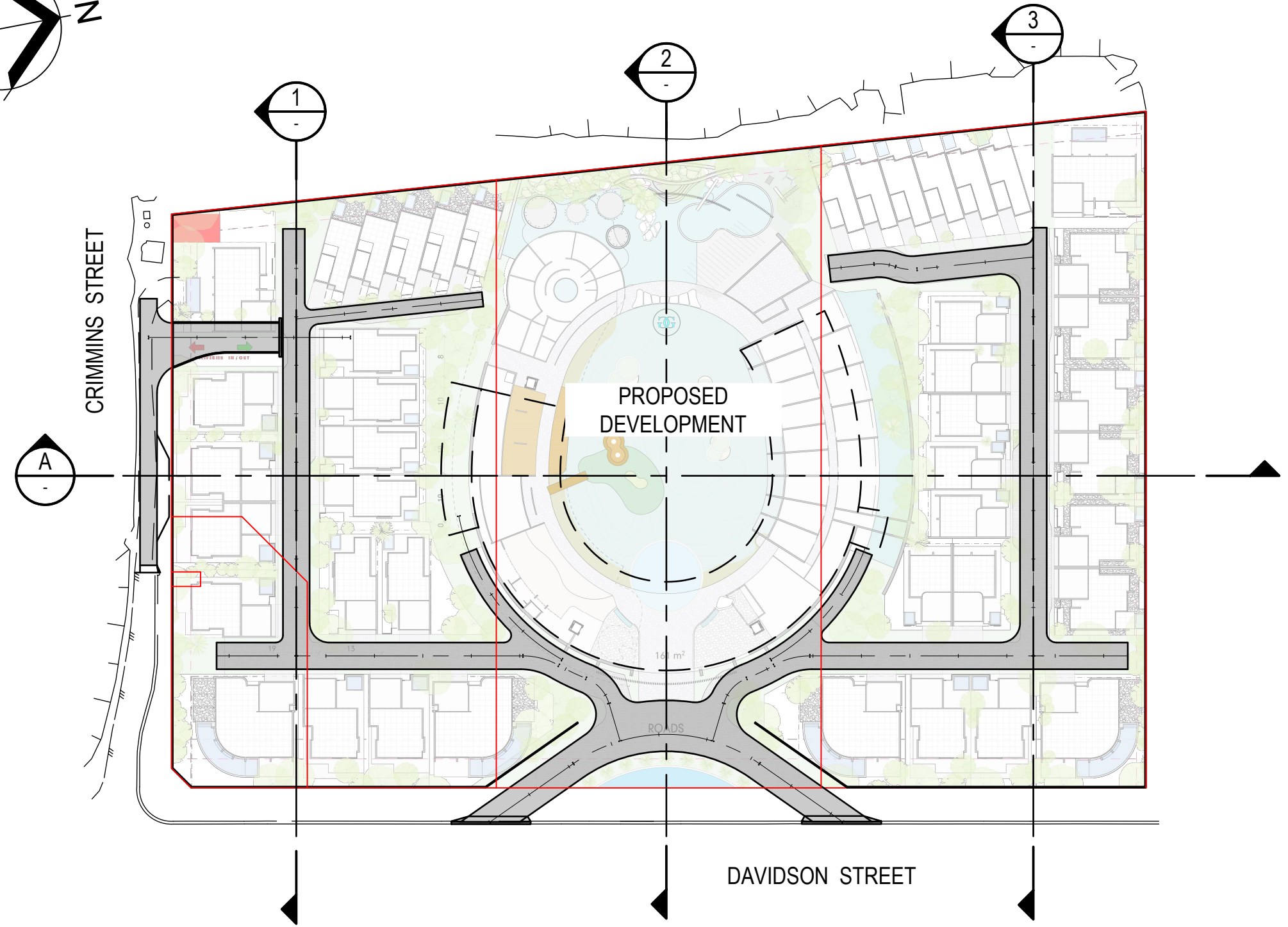
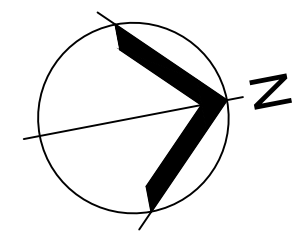
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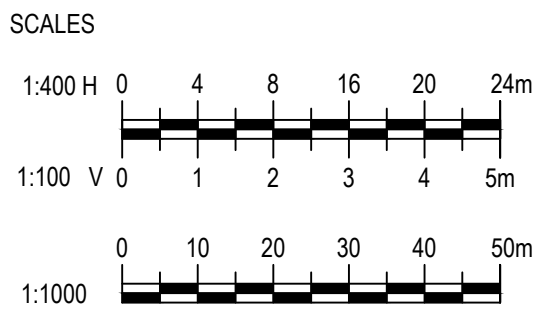
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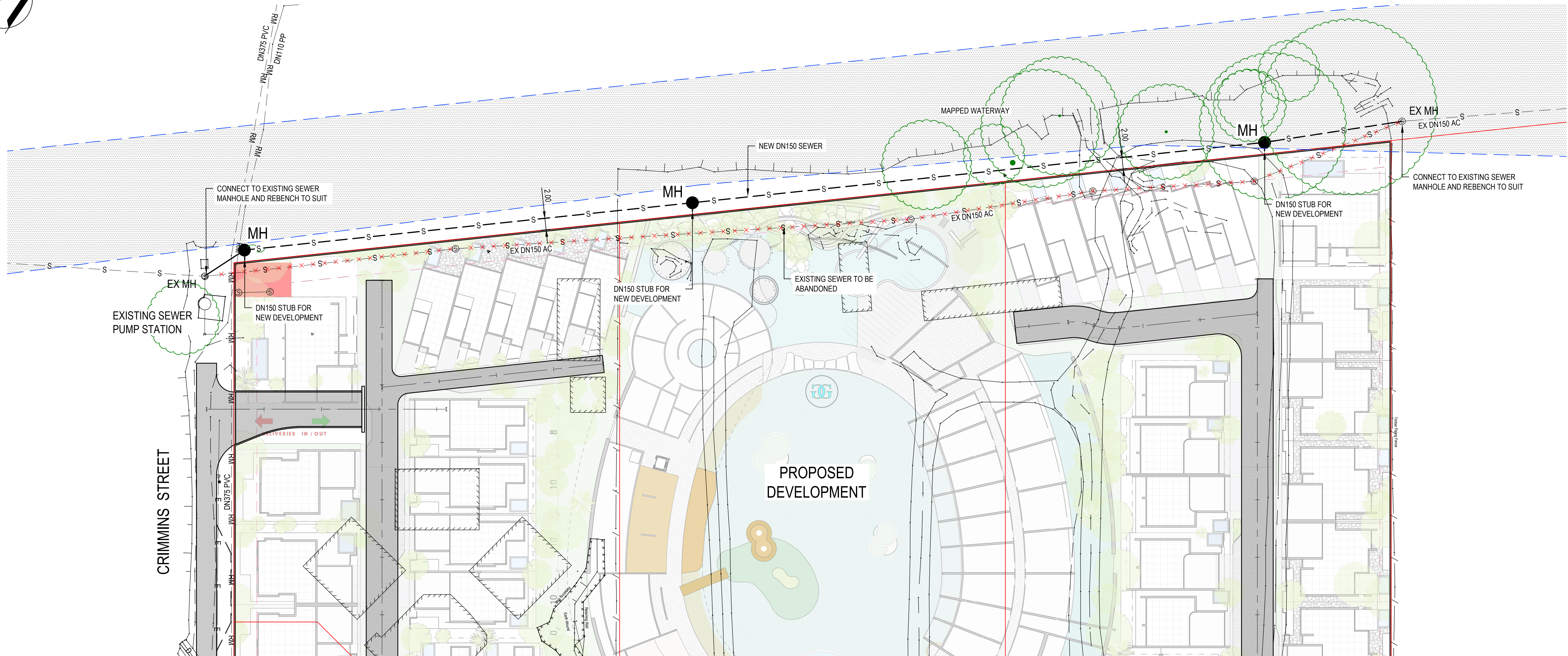
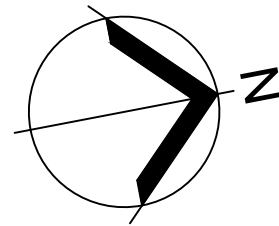


DESIGNED G. BROWNING
DRAWN G. BROWNING
CHECKED G. APPLIN

PROJECT
THE DAVIDSON BY GURNER
DAVIDSON STREET, PORT DOUGLAS
TITLE
SITE SECTIONS

STATUS PRELIMINARY	
SCALE (AT FULL SIZE) AS SHOWN	SIZE A1
DRAWING NUMBER 23001-SK003	REVISION B

APPENDIX D



PLAN
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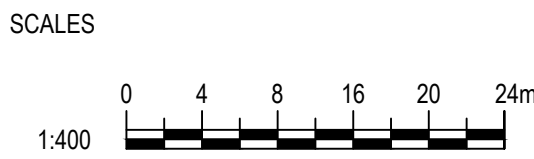
LEGEND

- S —●— PROPOSED SEWER GRAVITY MAIN
- S —⊙— EXISTING SEWER GRAVITY MAIN
- RM — EXISTING SEWER PRESSURE MAIN
- - - S - - - EXISTING SEWER MAIN TO BE ABANDONED
- [Blue hatched box] MAPPED TIDAL WATERWAY

B	PRELIMINARY ISSUE	GB	GA	24/04/23
A	PRELIMINARY ISSUE	GB	GA	03/04/23
REV	DESCRIPTION	DRN	APP	DATE
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M 0414 768 109 | E greg@applinconsulting.com.au



CLIENT



GURNER™
GROUP

DESIGNED
G. BROWNING

DRAWN
G. BROWNING

CHECKED
G. APPLIN

PROJECT

THE DAVIDSON BY GURNER
DAVIDSON STREET, PORT DOUGLAS

TITLE

EXTERNAL SEWER PLAN

STATUS

PRELIMINARY

SCALE (AT FULL SIZE)
1:400

DRAWING NUMBER
23001-SK004

SIZE
A1

REVISION
B

APPENDIX E

<u>Davidson by Gurner</u>					
Sewer Demand Tabulation - PRE DEVELOPMENT					
1. Equivalent Demands					
Caravan Park					
Van Sites	103.00			- Van / Camping Site	
EP per Unit =	1.20			refer to FNQROC D7.08	
Total EP =	123.60				
Cabins	15.00			- Adopt Multi Unit Accom - Units =2 bedrooms	
EP per Unit =	1.60			refer to FNQROC D7.08	
Total EP =	24.00				
Retail:	100.00	m2		- Shops/Offices	
EP per 90m2 GFA =	1.00			refer to FNQROC D7.08	
Total EP =	1.1				
Managers House	1.0			3 bedroom	
EP/house	2.5			based on lot < 400m2	
Total EP =	2.5				
Total Caravan Park EP =	151.2				
Dougies Backpackers					
Double Rooms	6.0			- Multi Unit Accom - Units <2 bedrooms	
EP per lot =	1.0			refer to FNQROC D7.08	
Total EP =	6.0				
Twin Rooms	8.0			- Multi Unit Accom - Units =2 bedrooms	
EP per Unit =	1.6			refer to FNQROC D7.08	
Total EP =	12.8				
Share Rooms	6.0			- Multi Unit Accom - Units =3 bedrooms	
EP per Unit =	2.2			refer to FNQROC D7.08	
Total EP =	13.20				
Van Sites	40.00			- Van / Camping Site	
EP per Unit =	1.2			refer to FNQROC D7.08	
Total EP =	48.0				
Restaurant, Lounges, Bars:	100.00	m2		- Allowance of 100m2	
Industrial Class:	8.00				
Number of similar connections (N):	1.0				
EP per Ha GFA =	500.0			- Calculated from WSAA 02 Part 1	
Total EP =	5.0				
Offices:	45.0	m2		- Shops/Offices	
EP per 90m2 GFA =	1.0			refer to FNQROC D7.08	
Total EP =	0.5				
Total Dougies EP =	85.5				
					- refer to FNQROC D7.08
<u>Total Development EP =</u>	<u>236.7</u>				
2. Flow Calculation					
ADWF =	270	L/EP/day		- refer to FNQROC D7.08	
=	63912	L/day			
=	0.740	L/s			
PWWF =	5 x ADWF			- refer to FNQROC D7.08	
=	319560	L/day			
=	3.699	L/s			
or (greater of)					
PWWF =	C1 x ADWF			- refer to FNQROC D7.08	
=	809621	L/day			
=	9.371	L/s			
PDWF =	C2 x ADWF			- refer to FNQROC D7.08	
=	253681	L/day			
=	2.936	L/s			

APPENDIX F

<u>Davidson by Gurner</u>			
Sewer Demand Tabulation - POST DEVELOPMENT			
1. Equivalent Demands			
Dwellings <i>refer to FNQROC D7.08</i>			
< 400 m2:	44.00		
401 - 900 m2:	0.00		
901 - 1100 m2:	0.00		
1101 - 1500 m2:	0.00		
> 1500 m2:	0.00		
EP / Dwellings <i>refer to FNQROC D7.08</i>			
< 400 m2:	2.50		
401 - 900 m2:	2.80		
901 - 1100 m2:	3.10		
1101 - 1500 m2:	3.40		
> 1500 m2:	3.70		
Total Private Homes EP = 110.0			
Restaurant, Lounges, Bars:	402	m2	
Industrial Class:	8		
Number of similar connections (N):	1		
EP per Ha GFA =	500.0		<i>- Calculated from WSAA 02 Part 1</i>
Total EP =	20.1		
Retail:	0	m2	<i>- Shops/Offices</i>
EP per 90m2 GFA =	1.0		<i>refer to FNQROC D7.08</i>
Total EP =	0.0		
Total Restaurant and Retail EP = 20.1			
Hotel <i>refer to FNQROC D7.08</i>			
< 2 bed:	110.00		
2 bed	2.00		
3 bed	0.00		
> 3 bed	0.0		
EP / Hotel Room <i>refer to FNQROC D7.08</i>			
< 2 bed:	1.00		
2 bed	1.60		
3 bed	2.20		
> 3 bed	0.4 + (0.6 x beds)		
Total EP = 113.2			
<u>Total Development EP = 243.3</u>			
2. Flow Calculation			
ADWF =	270	L/EP/day	<i>- refer to FNQROC D7.08</i>
=	65691	L/day	
=	0.760	L/s	
PWWF =	5 x ADWF		<i>- refer to FNQROC D7.08</i>
=	328455	L/day	
=	3.80	L/s	
or (greater of)			
PWWF =	C1 x ADWF		<i>- refer to FNQROC D7.08</i>
=	553417	L/day	
=	6.41	L/s	
PDWF =	C2 x ADWF		<i>- refer to FNQROC D7.08</i>
=	173404	L/day	
=	2.007	L/s	

APPENDIX G

<u>Davidson by Gurner</u>				
Water Demand Tabulation - PRE DEVELOPMENT				
1. Equivalent Demands				
Caravan Park (Pandanus)				
Van Sites	103		- Van / Camping Site	
EP per Unit =	1.2		refer to FNQROC D6.07	
Total EP =	123.6			
Cabins	15		- Adopt Multi Unit Accom - Units =2 bedrooms	
EP per Unit =	1.6		refer to FNQROC D6.07	
Total EP =	24.0			
Retail:	100	m2	- Shops/Offices	
EP per 90m2 GFA =	1.0		refer to FNQROC D6.07	
Total EP =	1.1			
Managers House	1.0		3 bedroom	
EP/house	2.5		based on lot < 400m2	
Total EP =	2.5			
Total Caravan Park EP =	151.2			
Dougies Backpackers				
Double Rooms	6		- Multi Unit Accom - Units <2 bedrooms	
EP per lot =	1.0		refer to FNQROC D6.07	
Total EP =	6.0			
Twin Rooms	8		- Multi Unit Accom - Units =2 bedrooms	
EP per Unit =	1.6		refer to FNQROC D6.07	
Total EP =	12.8			
Share Rooms	6		- Multi Unit Accom - Units =3 bedrooms	
EP per Unit =	2.2		refer to FNQROC D6.07	
Total EP =	13.2			
Van Sites	40		- Van / Camping Site	
EP per Unit =	1.2		refer to FNQROC D6.07	
Total EP =	48.0			
Restaurant, Lounges, Bars:	100	m2	- Allowance of 100m2	
Industrial Class:	8			
Number of similar connections (N):	1			
EP per Ha GFA =	500.0		- Calculated from WSAA 02 Part 1	
Total EP =	5.0			
Offices:	45	m2	- Shops/Offices	
EP per 90m2 GFA =	1.0		refer to FNQROC D6.07	
Total EP =	0.5			
Total Dougies EP =	85.5			
<u>Total Development EP = 236.7</u>				
2. Flow Calculation				
Average Day, AD =	500	L/day/EP	- refer to FNQROC D6.07	
=	118355.6	L/day		
=	1.37	L/s	- maximum PD allowance	
Mean Day Max Month, MDMM =	1.5 x AD		- refer to FNQROC D6.07	
=	177533	L/day	- maximum PH allowance	
=	2.05	L/s		
Peak Day, PD =	2.25 x AD			
=	266300	L/day		
=	3.08	L/s		
Peak Hour, PH =	1/12 x PD			
=	0.26	L/s		

APPENDIX H

<u>Davidson by Gurner</u>			
Water Demand Tabulation - POST DEVELOPMENT			
1. Equivalent Demands			
Dwellings <i>refer to FNQROC D6.07</i>			
< 400 m2:	44.00		
401 - 900 m2:	0.00		
901 - 1100 m2:	0.00		
1101 - 1500 m2:	0.00		
> 1500 m2:	0.00		
EP / Dwellings <i>refer to FNQROC D6.07</i>			
< 400 m2:	2.50		
401 - 900 m2:	2.80		
901 - 1100 m2:	3.10		
1101 - 1500 m2:	3.40		
> 1500 m2:	3.70		
Total Private Homes EP = 110.0			
Restaurants and Retail			
Restaurant, Lounges, Bars:	402	m2	
Industrial Class:	8		
Number of similar connections (N):	1		
EP per Ha GFA =	500.0		<i>- Calculated from WSAA 02 Part 1</i>
Total EP =	20.1		
Retail: 0 m2 <i>- Shops/Offices</i>			
EP per 90m2 GFA =	1.0		<i>refer to FNQROC D6.07</i>
Total EP =	0.0		
Total Restaurant and Retail EP = 20.1			
Hotel <i>refer to FNQROC D6.07</i>			
< 2 bed:	110.00		
2 bed	2.00		
3 bed	0.00		
> 3 bed	0.0		
EP / Dwellings <i>refer to FNQROC D6.07</i>			
< 2 bed:	1.00		
2 bed	1.60		
3 bed	2.20		
> 3 bed	0.4 + (0.6 x beds)		
EP = 113.2			
<u>Total Development EP = 243.3</u>			
2. Flow Calculation			
Average Day, AD =	500	L/day/EP	<i>- refer to FNQROC D6.07</i>
=	121650	L/day	
=	1.41	L/s	<i>- maximum PD allowance</i>
Mean Day Max Month, MDMM = 1.5 x AD <i>- refer to FNQROC D6.07</i>			
=	182475	L/day	<i>- maximum PH allowance</i>
=	2.11	L/s	
Peak Day, PD = 2.25 x AD			
=	273712.5	L/day	
=	3.17	L/s	
Peak Hour, PH = 1/12 x PD			
=	0.26	L/s	

3. Fire Demand		
<i>Residential</i>		
	<i>Fire Flow = 15 L/s</i>	
<i>Commercial</i>		
	<i>Fire Flow = 30 L/s</i>	

Attachment 6

Traffic Impact Assessment



DEVELOPMENT & PROPERTY SERVICES

Technical Memorandum

15 August 2023

To	Gary Hunt	Contact No.	0412 229 233
Copy to	Jarrod Ryan, Brooker Formosa, Liam Kenny	Email	gary@huntdesign.com.au
From	GHD Pty Ltd	Project No.	12601184
Project Name	Port Douglas by GURNER		
Subject	Traffic Impact Assessment Statement (Rev 3)		

1. Introduction

GHD have been engaged by Hunt Design Pty Ltd to assist with engineering inputs for the Development Application (DA) submission of the new high-end short-term accommodation and residential project proposed for Davidson Street, Port Douglas, QLD. As part of the DA submission, a traffic impact statement has been prepared to demonstrate the possible impact that the new facility may have on the existing traffic.

1.1 Purpose of this Memorandum

The purpose of this memorandum is to provide a statement of the existing traffic situation and identify the new development's impact on the situation.

1.2 Scope and limitations

This technical memorandum has been prepared by GHD for The Trustee for Gary Hunt Family Trust (No 1) T/As Hunt Design. It is not prepared as, and is not represented to be, a deliverable suitable for reliance by any person for any purpose. It is not intended for circulation or incorporation into other documents. The matters discussed in this memorandum are limited to those specifically detailed in the memorandum and are subject to any limitations or assumptions specially set out.

1.3 Assumptions and clarifications

The following are the assumptions and exclusions as part of the traffic impact assessment.

- A traffic survey has not been undertaken as part of this project, additionally no traffic data has been provided regarding local traffic movements.
- The existing traffic situation has been analysed based on aerial imagery sourced from Google Earth and Queensland Globe.

2. Proposed Upgrade

The proposed new high-end short-term accommodation and residential project is proposed on the sites currently known as Dougies Backpackers and the Pandanus Caravan Park and intends to increase the availability of high-end short term accommodation options in Port Douglas.

The circa 95 suite luxury hotel is focussed on a generous swimming lagoon encircled by food and beverage outlets with a very strong Beach Club ambience. Wellness and fitness are key drivers in the design philosophy with a generous wellness spa and wellness gym.

Surrounding the luxury hotel are circa 45 residential offerings with 33 stand-alone luxury homes, and 11 spacious villas with private courtyards and pools.

Additionally, the luxury hotel offers temporary accommodation and function options including 118 hotel rooms of various size and comfort.

The development includes a basement level carpark with 94 car parking spaces (including 6 PWD parking spaces). In addition to this, all residential elements are serviced by private driveways with 1-2 cars per residence. Totalling 174 car parking spaces.

3. Existing traffic situation

The existing traffic situation is detailed in the figures below and can be summarised as follows:

- The first priority area in Douglas Shire Council's Economic Development Strategy is Tourism.
- The Economic Development Strategy shares that Tourism generates more than \$611M per year.
- Figures from Tourism and Events Queensland demonstrate that, with an 80% economic reliance on tourism, the Douglas Shire ranks as the most tourism-dependent region in Australia.
- All properties on Davidson Street are zoned as Tourist Accommodation, Centre or Community Facilities.
- The residential population of Port Douglas is approximately 4,300.
- The Port Douglas region sees, on average, approximately 2.1M tourist visitors annually.
- 97-113 Davidson Street is zoned as Tourist Accommodation.
- Dougies Backpackers and Resort and the Pandanus Caravan Park both have accesses from Davidson Street service road and Dougies also has informal parking available from Crimmins Street.
- All surrounding roads are two-way single carriageway roads.
- Davidson Street is a Council controlled road running parallel to Port Douglas Road (state controlled) with access via Crimmins Street and Port Street.

Using FNQROC D6.07, the estimated equivalent persons for the existing businesses was calculated and detailed in Table 1.

Table 1 Existing Traffic Contributors

	Pandanus Caravan Park		Dougies Backpackers	
	No.	Equivalent Persons	No.	Equivalent Persons
Long-term accommodation	1	2.5	1	2.5
Short-term accommodation	15	24	20	31.4
Caravan / tent sites	103	123.6	40	48
Food and Drink outlet	0	0	100m ²	5
Total Equivalent Persons	150.1		86.9	
	237.0			



Figure 1 Queensland Globe aerial capture showing the existing traffic flow.

4. Proposed development and associated traffic

As can be seen in the conceptual architectural drawings for the new luxury hotel and private homes, the number of property accesses from Davidson Street is proposed to remain the same and access to the site from Crimmins Street will be formalised.

The proposed development allows for 118 temporary accommodation rooms plus 44 residences and a café and restaurant.

Using FNQROC D6.07, the estimated equivalent persons for the proposed development was calculated to provide a comparison of generated patrons between the existing businesses and the new development.

As shown in Table 2, the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.

Table 2 *Proposed Traffic Contributors*

	The Davidson by GURNER™	
	No.	Equivalent Persons
Long-term accommodation	44	110
Short-term accommodation	118	118
Food and Drink outlet	632m ²	31.6
Total Equivalent Persons Generated by The Davidson by GURNER™	259.6	
Current Equivalent Persons Generated by the existing caravan park and backpackers	237.0	



Figure 2 *Capture of architectural drawings showing the proposed development layout*

It is recommended that the driveway crossovers be designed generally in accordance with IPWEAQ Standard Drawing RS-051. This will ensure that access in and out of the property will be safe and efficient. In addition, Davidson Street is approximately 7.5m wide with concrete kerb and channel on the western side of the road and no kerb or channel on the eastern side of the road. There is a 3.5m wide concrete shared path running parallel to Davidson Street on the eastern side of the road. The intersection between Davidson Street and Crimmins Street is a cross intersection allowing access to Port Douglas Road. This intersection is wide and is expected to have sufficient capacity for the traffic expected to be generated by this development. The intersection between Davidson Street and Port Street is a left turn only, exit only intersection with expected sufficient width and capacity to cater for traffic generated by this development.

As such, it is not expected that the traffic generated by this development will exceed the capacity of Davidson Street.

4.1 Vehicle Access and Turn Paths

A vehicle turning path assessment was conducted for the following scenarios:

- Garbage collection and Urban Fire Truck (8.8m Service vehicle) to the rear of the development and accessing the service entrance from Crimmins Street.
- Larger truck (12.5m Service vehicle) to the rear of the development and accessing the service entrance from Crimmins Street.
- Standard car (Passenger vehicle) entering and exiting specific residential dwellings.
- Garbage collection (8.8m Service vehicle) entering and exiting the basement level of the service entrance from Crimmins Street.
- Standard car (Passenger vehicle) circulating the basement level carpark.

The assessment found the following:

- An 8.8m service vehicle can access the rear of the development and reverse out.
- A 12.5m service vehicle can access the northern internal road to the first intersection.
- A standard passenger vehicle can easily access all residential houses except for the garage of the north-western residential dwelling.
- An 8.8m service vehicle can access the basement level service (this assessment is horizontal access only; no vertical checks were conducted).
- A standard passenger vehicle can circulate the basement level carpark. However, it is recommended to chevron out the two end carparks in the blind aisle to allow a vehicle to turn around if no parking spaces are available.

4.2 Parking

Section 9.4 of the Douglas Shire Council Planning Scheme states the requirements for parking facilities in new developments. The breakdown of parking requirements is shown in Table 3.

Table 3 *Parking Requirements for The Davidson by GURNER™ Luxury Hotel and Private Homes*

Land uses	Minimum number of ordinary vehicle parking spaces	Scheme Requirement	Proposed Development	Comment
Restaurant and Café (Food and drink outlet)	Not Precinct 1* - 1/25m ² Precinct 1 – 1/50m ² Bike – 1/100m ²	13 (632m ²) 13 (632m ²) 6 (632m ²)	96 (car) 14 (motorcycle) 30 (bike)	This proposed development is within 380m of Precinct 1: Port Douglas precinct in the Port Douglas / Craiglie Local plan. This proximity will allow alternative transport options to be easily accessible. The required total number of parking spaces if this development were in Precinct 1 is 65.
Short-term accommodation rooms	Not Precinct 1 – For over 10 units: 0.75 car spaces per dwelling unit, plus 3 spaces for visitors and 2 service/staff parking for the first 10 units and 0.5 additional service / staff space per 10 units, there-above. Precinct 1 – 0.5 car spaces per dwelling unit.	Car - 99 (118 units) Bike – 12 (118 units) 59 (118 units)		
Residences (Multiple dwelling)	Car - 1.5 / dwelling unit Bike - 1 / 3 units and 1 visitor / 12 units.	66 (44 units) 28 (44 units)	88 44	

*Section 6.2.14 Tourist Accommodation Zone Code, AO9.3 states “Where a commercial service or facility offers services to persons over and above in-house guests, the commercial component provides on- site car parking for 50% of the floor area available for use in accordance with the relevant requirements of the Parking and access code.”

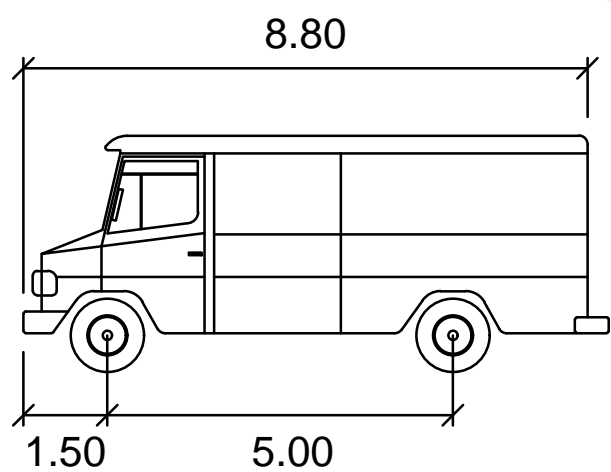
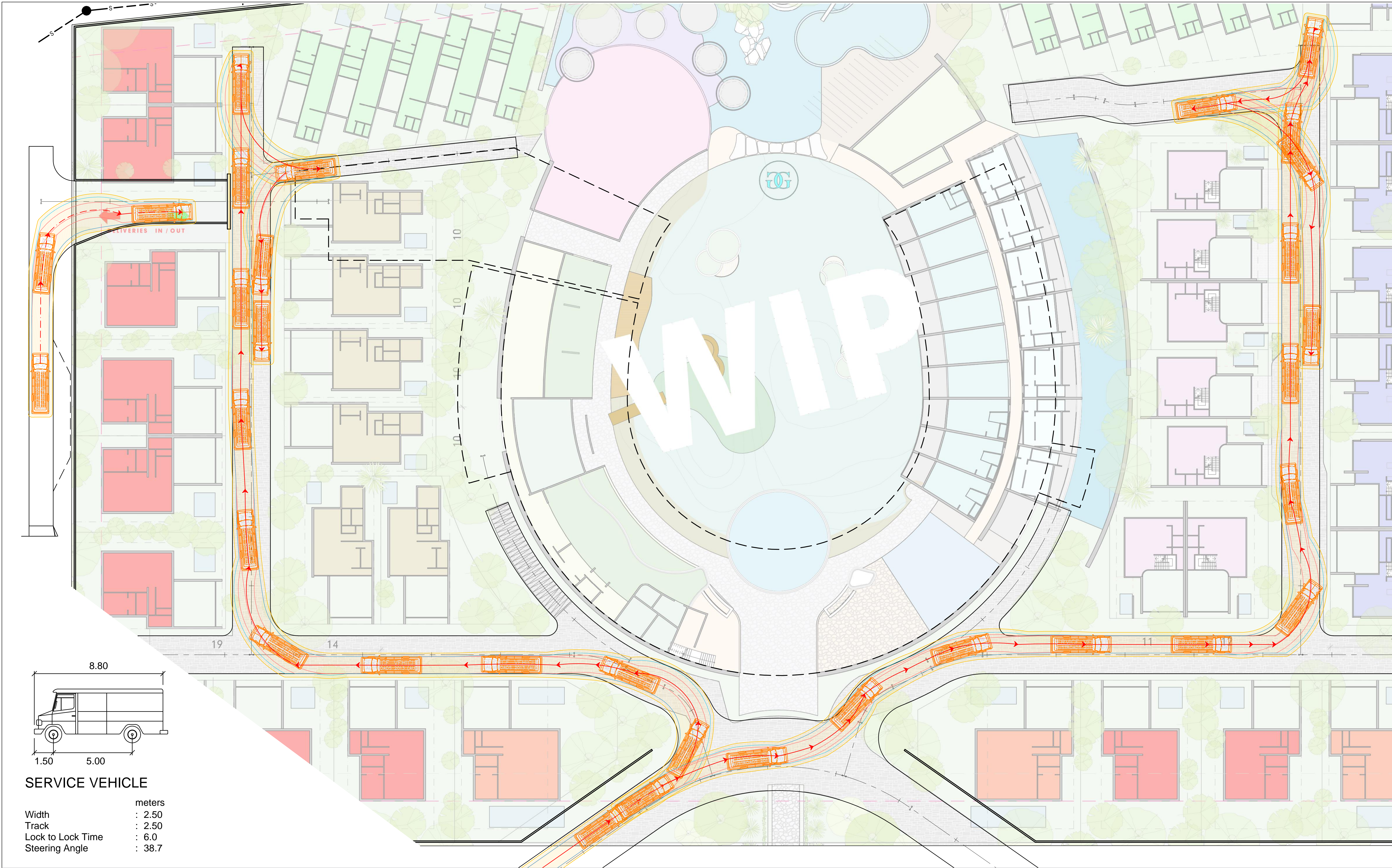
The number of parking spaces (car and motorcycle combined) provided in the concept plan exceeds the number of parking spaces required for the proposed development. In addition, the number of parking spaces proposed well exceeds the requirement for developments within Precinct 1: Port Douglas precinct in the Port Douglas/Craiglie Local Plan. As this proposed development is in close proximity to Precinct 1, it is suggested that the proposed number of parking spaces is adequate.

5. Conclusion

It is deemed that the new luxury short-term accommodation and private homes development will have minimal to negligible impact on to the existing traffic network. Traffic patterns around the development are expected to remain similar to the current situation as the events expected would not differ greatly to what the current businesses generate. With the new proposed aesthetic of the development, it could be expected that the frequency of events and visitors may increase however the generated traffic will remain similar.

Regards

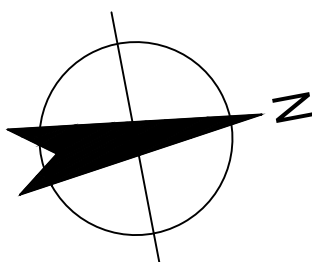
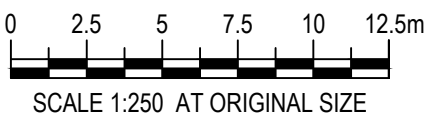
Jessica Dennien
Senior Civil Engineer



SERVICE VEHICLE

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7

A	PRELIMINARY			
Rev	Description	Checked	Approved	Date
Author	Y. XU	Drafting Check		
Designer		Design Check		



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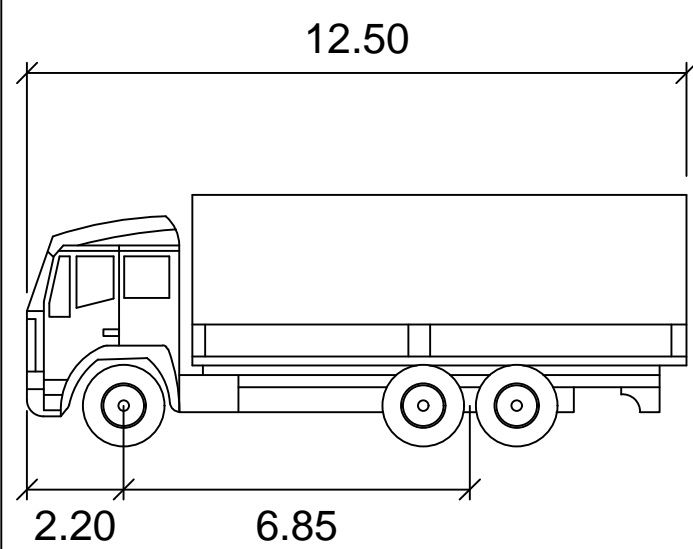
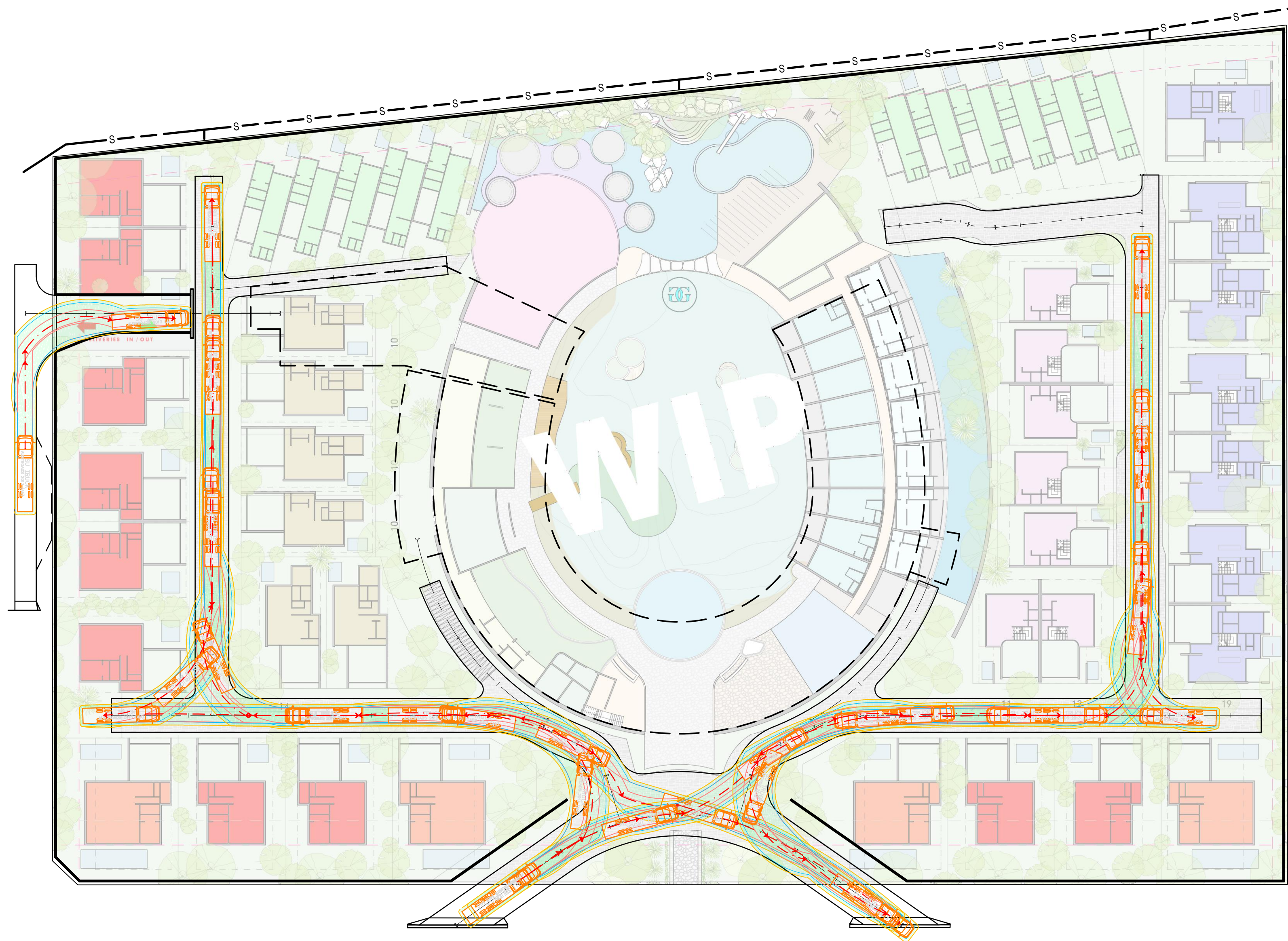
Project No.
12601184

Client	
Project	PORT DOUGLAS
Status	PRELIMINARY

Drawing Title
TURNPATH ASSESSMENT
8.8m SERVICE VEHICLE

Drawing No.
12601184-SK001

Size
A1
Rev
A



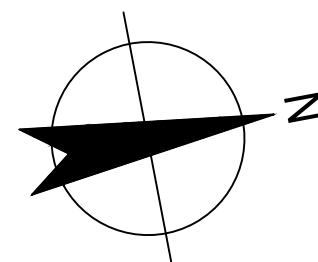
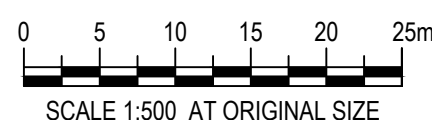
SU TRUCK

	meters
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Rev	Description	Checked	Approved	Date
Author	Y. XU	Drafting Check		
Designer		Design Check		

Plot Date: 4 April 2023 - 3:21 PM
Plotted by: Yingying Xu

File Name: C:\12d\SWdata\IP-00-12D-00144-12601184 - Port Douglas by Gurner_2446\CADD\Drawings\SKETCH\SK001-004.dwg



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Client	
Project	PORT DOUGLAS
Status	PRELIMINARY

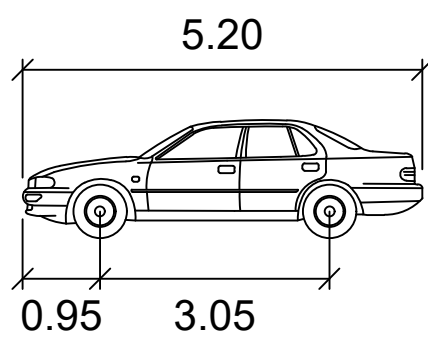
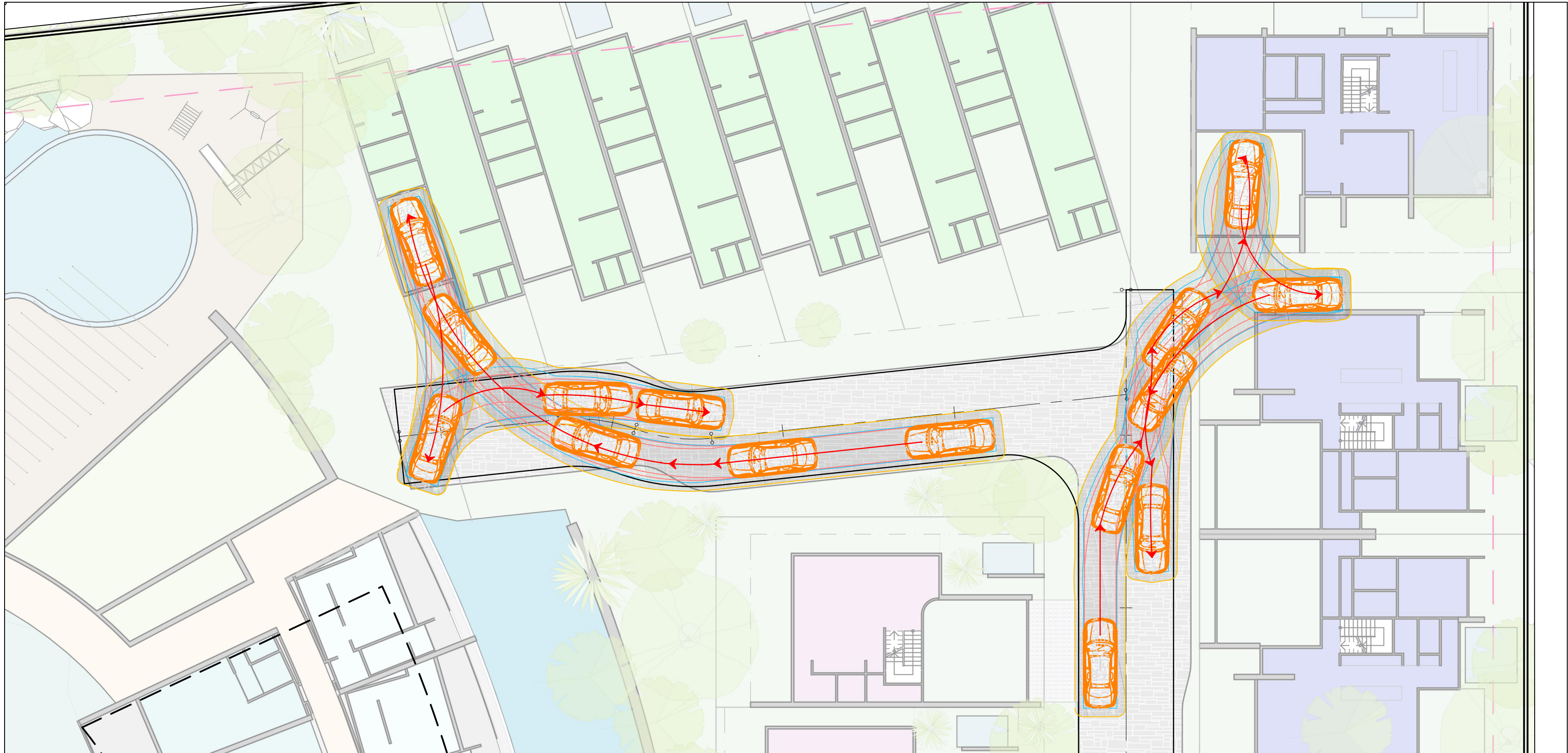
Drawing Title
TURNPATH ASSESSMENT
12.5m SERVICE VEHICLE

Status Code
-

Drawing No.
12601184-SK002

Size
A1

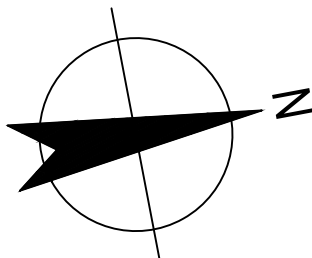
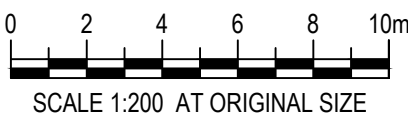
Rev
A



PASSENGER-CAR

	width	5.20
	track	3.05
	lock to lock time	6.0
	steering angle	33.6

A PRELIMINARY			
Rev	Description	Checked	Approved Date
Author	Y. XU	Drafting Check	
Designer		Design Check	



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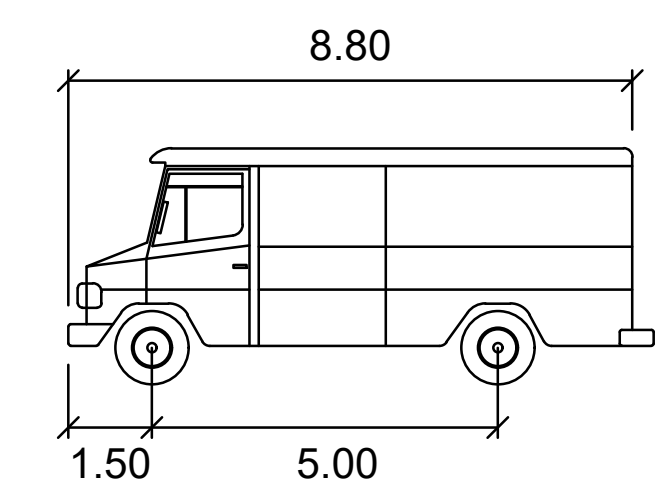
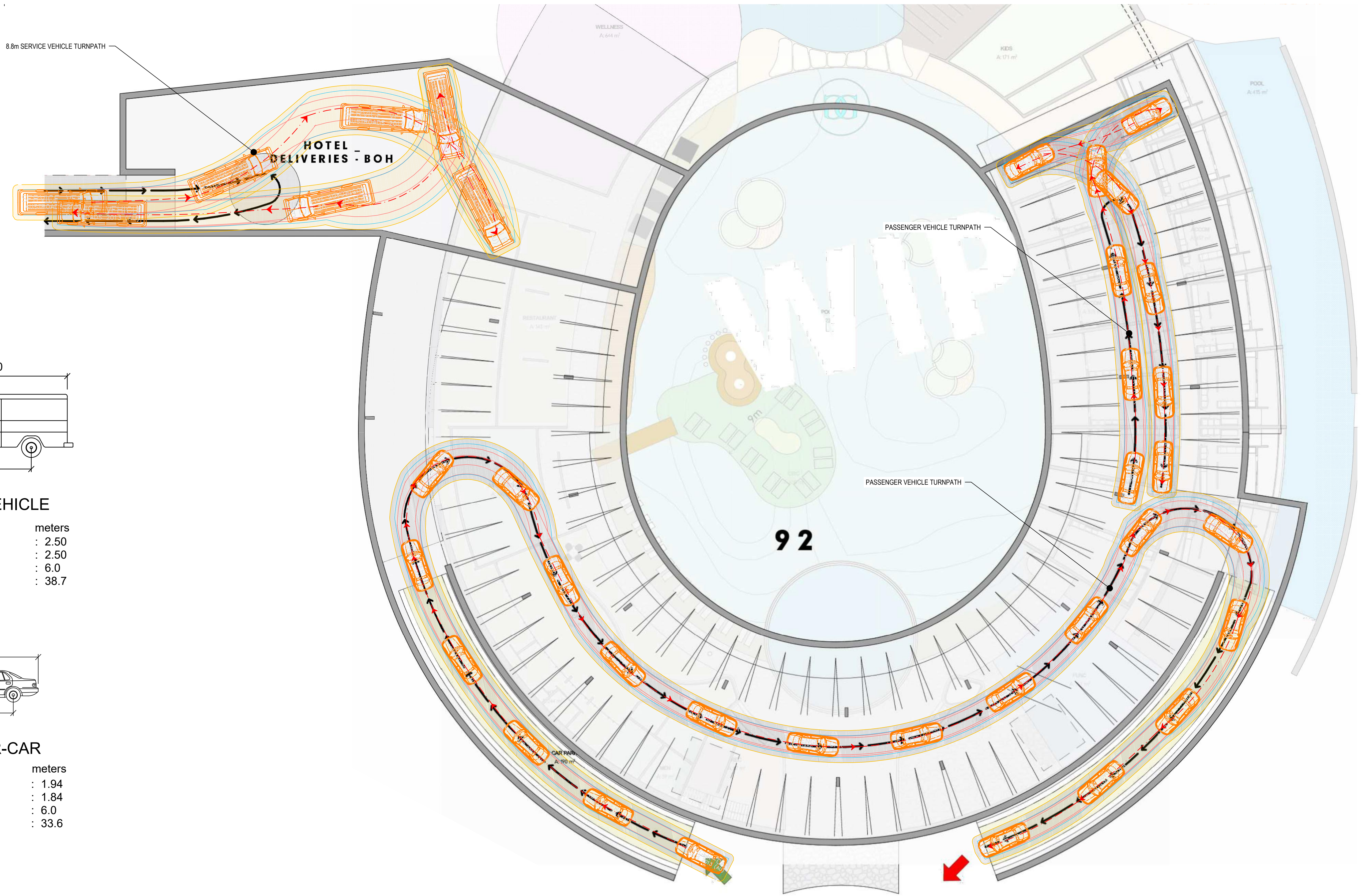
Project No.
12601184

Client		
Project	PORT DOUGLAS	
Status	PRELIMINARY	Status Code -

Drawing Title
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PASSENGER VEHICLE

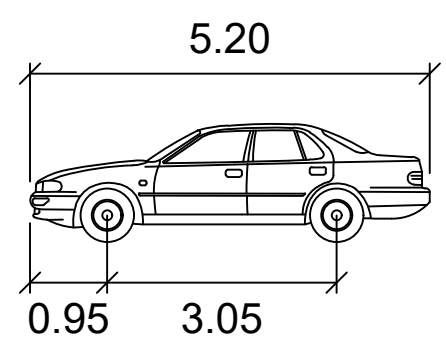
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SERVICE VEHICLE

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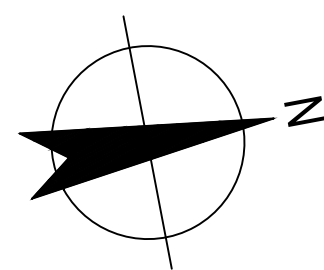
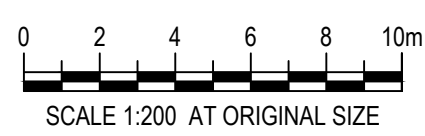
PASSENGER-CAR

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A PRELIMINARY				
Rev	Description	Checked	Approved	Date
Author	Y. XU	Drafting Check		
Designer		Design Check		

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Status	PRELIMINARY	Status Code -

Drawing Title
**TURNPATH ASSESSMENT
BASEMENT**

Drawing No.
12601184-SK004

Size
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Rev
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Attachment 7

Geotechnical Report



DEVELOPMENT & PROPERTY SERVICES

REPORT

Geotechnical Investigation

Proposed Development
The Davidson by GURNER™
97-113 Davidson Street
Port Douglas QLD 4877

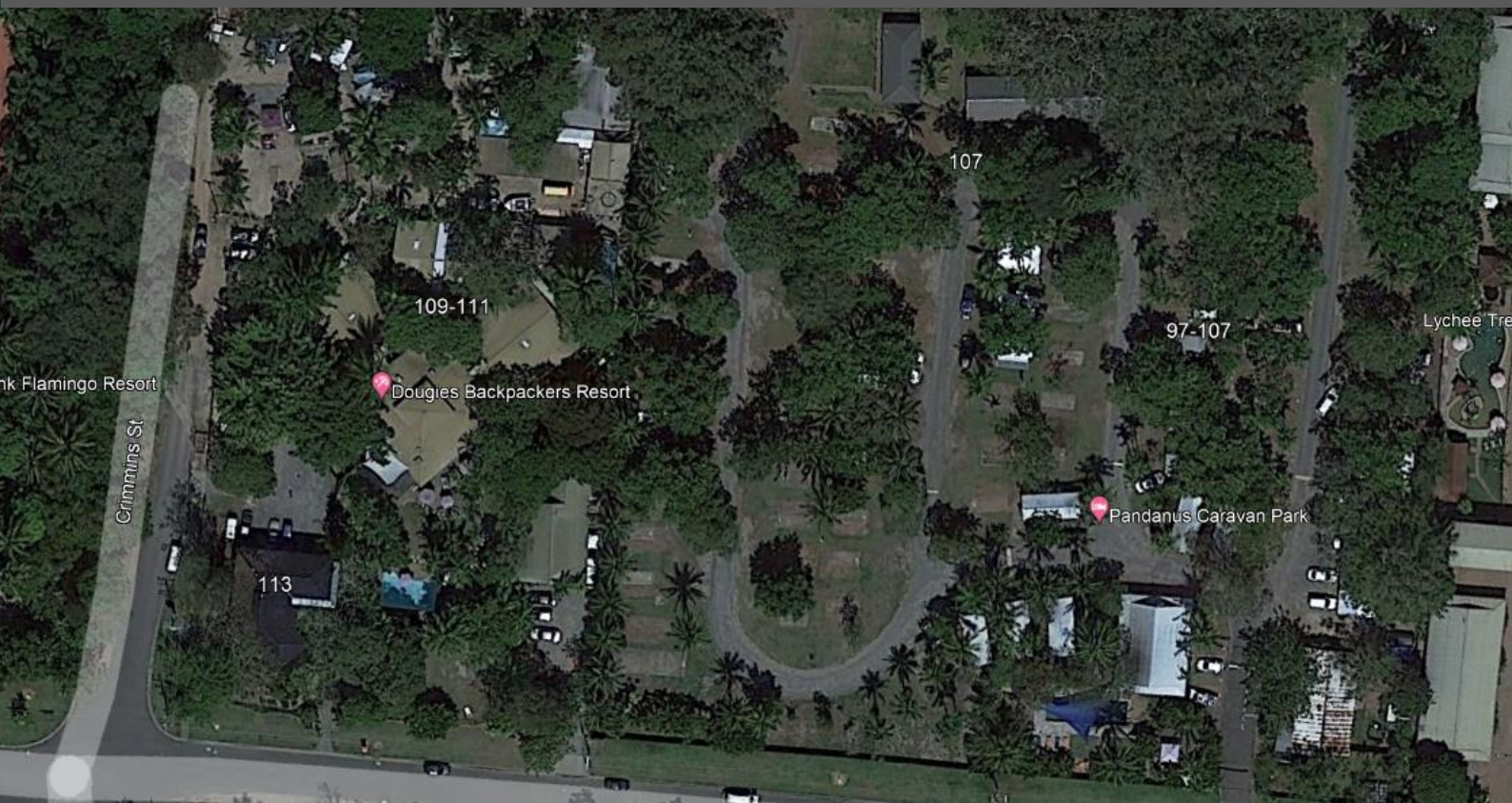


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List of Appendices

Appendix A	Site Plan and Inferred Cross Sections
Appendix B	Results of Fieldwork
Appendix C	Results of Laboratory Testing

1.0 Introduction

GEO Design has carried out a geotechnical investigation for a proposed development located at 97-113 Davidson Street, Port Douglas. The geotechnical investigation was carried out at the request of Davidson Street Port Douglas Developments Pty Ltd.

It is understood that the proposed development comprises the construction of new short term accommodation and residential buildings with associated swimming pools and lagoon, car parking and landscaped areas. It is further understood that it is proposed to construct a new basement 120 car park over at least part of the site.

The aims of the geotechnical investigation were as follows:

- Evaluate the subsurface conditions in the area of the proposed development.
- Comment on footing options and provide geotechnical design parameters for structural design of buildings.
- Comment on ground improvement options if suitable.
- Comment on potential total and differential settlements under the expected loads.
- Comment on basement construction and provide geotechnical design parameters.
- Comment on dewatering and likely inflows into excavations.
- Comment on retaining wall (temporary and permanent) that may be required and provide geotechnical design parameters for design.
- Provide subgrade CBR values to allow pavement design.
- Comment on earthworks procedures and site preparation.
- Comment on the likely presence of Acid Sulphate Soils (ASS) and potential disturbance from the proposed development.
- Comment on likely ASS management procedures if present.

The results of the investigation together with the engineering comments outlined above are presented in the following sections.

2.0 Fieldwork

The fieldwork for the current investigation comprised the following:

- A walkover assessment, carried out by an experienced Engineering Geologist.
- Performance of nine (9) electronic Cone Penetration Tests (CPT's) to a maximum of 12 m or prior refusal.
- Drilling of six (6) geotechnical boreholes to a depth of about 15 m with in-situ SPT/U50 sampling at 1.5 m intervals together with ASS sampling to 4.5 m below the existing ground surface level.
- Excavation of eight (8) test pits to a maximum depth of 3 m.
- Completion of field pH testing (pH_F and pH_{FOX}) on samples recovered for the preliminary assessment of ASS.
- Combination of samples for Chromium Suite testing.
- Collection of samples for geotechnical and chemical testing.

Fieldwork was carried out by an experienced field technician under the direction of a geotechnical engineer. The location of all testing is presented in Appendix A and shown below in Figure 1. Inferred cross sections are also presented in Appendix A. The inferred cross sections are based upon the provided Earthworks Cut Fill Sections (Drawing 200372-DA-C03.11 (Revision 2)).

Co-ordinates for the test locations are summarised in Table 1. A site plan showing the location of the proposed development and the test locations is presented in Figure 1 and in Appendix A. The results of the fieldwork are presented in Appendix B.

Table 1: Summary of Test Locations*

Test Location	Easting (m)	Northing (m)	Completed Depth (m)	Approximate Surface RL (m-AHD)
BH01	335980.0	8175732.0	14.95	4.32
BH02	335881.0	8175754.0	14.95	2.85
BH03	335961.0	8175637.0	14.95	4.21
BH04	335867.0	8175652.0	14.95	2.98
BH05	335641.0	8175562.0	14.95	4.17
BH06	335864.0	8175566.0	14.95	3.75
TP01	335959.0	8175704.0	1.40	4.04
TP02	335988.0	8175644.0	1.70	4.62
TP03	335929.0	8175637.0	1.40	3.98

Test Location	Easting (m)	Northing (m)	Completed Depth (m)	Approximate Surface RL (m-AHD)
TP04	335898.0	8175644.0	1.00	3.40
TP05	335938.0	8175678.0	1.10	3.91
TP06	335894.0	8175725.0	0.90	3.13
TP07	335977.0	8175603.0	1.80	4.51
TP08	335907.0	8175557.0	1.40	4.01
CPT01	336005.0	8175713.0	11.9	4.89
CPT02	335928.0	8175746.0	10.1	3.65
CPT03	335989.0	8175656.0	11.5	4.52
CPT04	335932.0	8175932.0	10.5	3.93
CPT05	335881.0	8175682.0	9.6	3.29
CPT06	335928.0	8175627.0	11.6	4.01
CPT07	335972.0	8175604.0	11.3	4.66
CPT08	335860.0	8175643.0	11.6	2.90
CPT09	335910.0	8175561.0	9.7	4.07

*Co-ordinates in MGA2020: Zone 55. RL's estimated from provided site plan

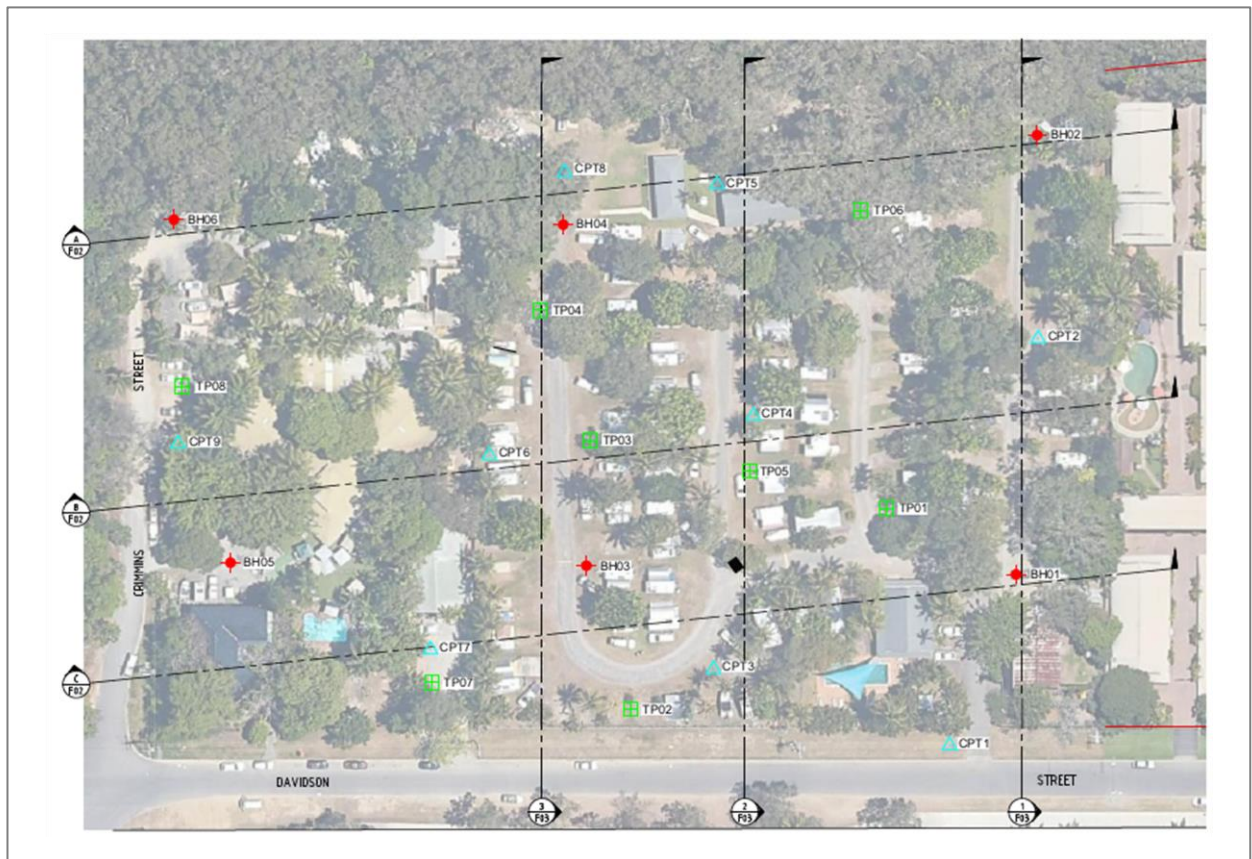


Figure 1: Test Location Plan

3.0 Results of Fieldwork

3.1 Surface Conditions

The subject development site is located at 97-113 Davidson Street Port Douglas. The proposed development parcel of land covers the following allotments:

- Lot 1 on RP723702
- Lot 2 on RP723702
- Lot 3 on RP909815
- Lot 4 on RP909815

The allotments are currently occupied by accommodation and commercial businesses including a backpacker accommodation and caravan park. The existing infrastructure includes various buildings, swimming pools, sealed and unsealed roads, and landscaped areas.

The overall parcel of land is bound to the west by the Railway Service Line, to the south by Crimmins Street, to the north by an existing commercial development, and to the east by Davidson Street.

Photographs of the site taken during fieldwork are presented in Figures 2 to 6.



Figure 2: Site Photographs



Figure 3: Site Photographs



Figure 4: Site Photographs



Figure 5: Site Photographs



Figure 6: Site Photographs

3.2 Subsurface Conditions

The subsurface conditions encountered within the boreholes, test pits and inferred from the results of the CPT's were generally consistent and comprised Quaternary aged unconsolidated alluvial sediments. The conditions encountered were consistent with those encountered on previous geotechnical investigations in this area of Port Douglas.

From a geotechnical point of view, the subsurface materials can be largely classified into three main material zones. For reporting purposes, these are referred to as Zones 1 to 3.

Inferred subsurface profiles are presented in Appendix A.

3.2.1 Subsurface Zone 1

Zone 1 extends from the current ground surface to a depth of between about 1.6 m to 7.0 m (RL 1.4 m to -2.7 m). This zone is dominated by lightly to darkly hued Loose to Medium Dense/Dense sands with some minor lightly to darkly hued Soft to Firm clay layers.

Some surface fill was noted across the site and is likely related to the existing development at the site. The fill generally comprised sandy and clayey materials. No deleterious materials were observed within the fill.

3.2.2 Subsurface Zone 2

Zone 2 comprises the Soft to Firm compressible clay layer with organics (Marine Clay) that is dominant in this area of Port Douglas. The results of the investigation indicate that the Marine Clay layer extends below the Zone 1 units to depths of about 7.0 m to 9.5 m below the current ground surface (RL -2.8 m to -6.4 m).

Zone 2 also includes some interbedded sand layers within the marine clay.

The soft to firm compressible clay layers provide issues with settlement for buildings and placement of new filling. These materials are also generally Potentially Acid Sulfate Soils (PASS) and require treatment if excavated.

3.2.3 Subsurface Zone 3

Zone 3 generally comprises Firm to Hard clays and Loose to Medium Dense sands that extend to depth below the soft to firm compressible clay layers. These layers were encountered to the maximum depths investigated.

3.2.4 Groundwater

At the time of fieldwork groundwater was encountered at a depth of between about 0.1 m to 2.2 m below the current ground level. These levels correspond to around RL 1.6 m to 2.1 m. A summary of the approximate groundwater levels observed at the time of fieldwork is summarised in Table 2 below.

Table 2: Summary of Groundwater Levels

Test Location	Groundwater Level (m-bgl)	Groundwater Level RL-m AHD
BH01	1.80	2.52
BH02	0.80	2.05
BH03	1.30	2.91
BH04	0.90	2.08
BH05	1.0	3.17
BH06	0.80	2.95
TP01	1.00	3.04
TP02	1.60	3.02
TP03	1.20	2.78
TP04	0.80	2.60
TP05	1.10	3.81
TP06	0.70	2.43
TP07	1.80	2.71
TP08	1.40	2.61

In addition to the above, Odyssey water level monitors were installed within boreholes BH03 and BH06. The monitors were installed upon completion of fieldworks and remained collecting groundwater data from 23 February to 18 April 2023.

The groundwater monitoring results are presented in Appendix B and are summarised below in Figure 7. The groundwater levels shown are in accordance with RL – m AHD.

It can be seen that the groundwater levels fluctuate based on rainfall and tidal effects and generally vary between about RL 0.8 m to 1.1 m in BH06 and RL 0 m to 1.0 m in BH03 throughout the period.

It is not uncommon for ground water to reach higher levels and approach the natural ground surface level following periods of prolonged rainfall, particularly when coinciding with high tides.

It is considered that an upper groundwater level of around RL 1.8 – 2.0 m should be adopted for all design and construction planning.

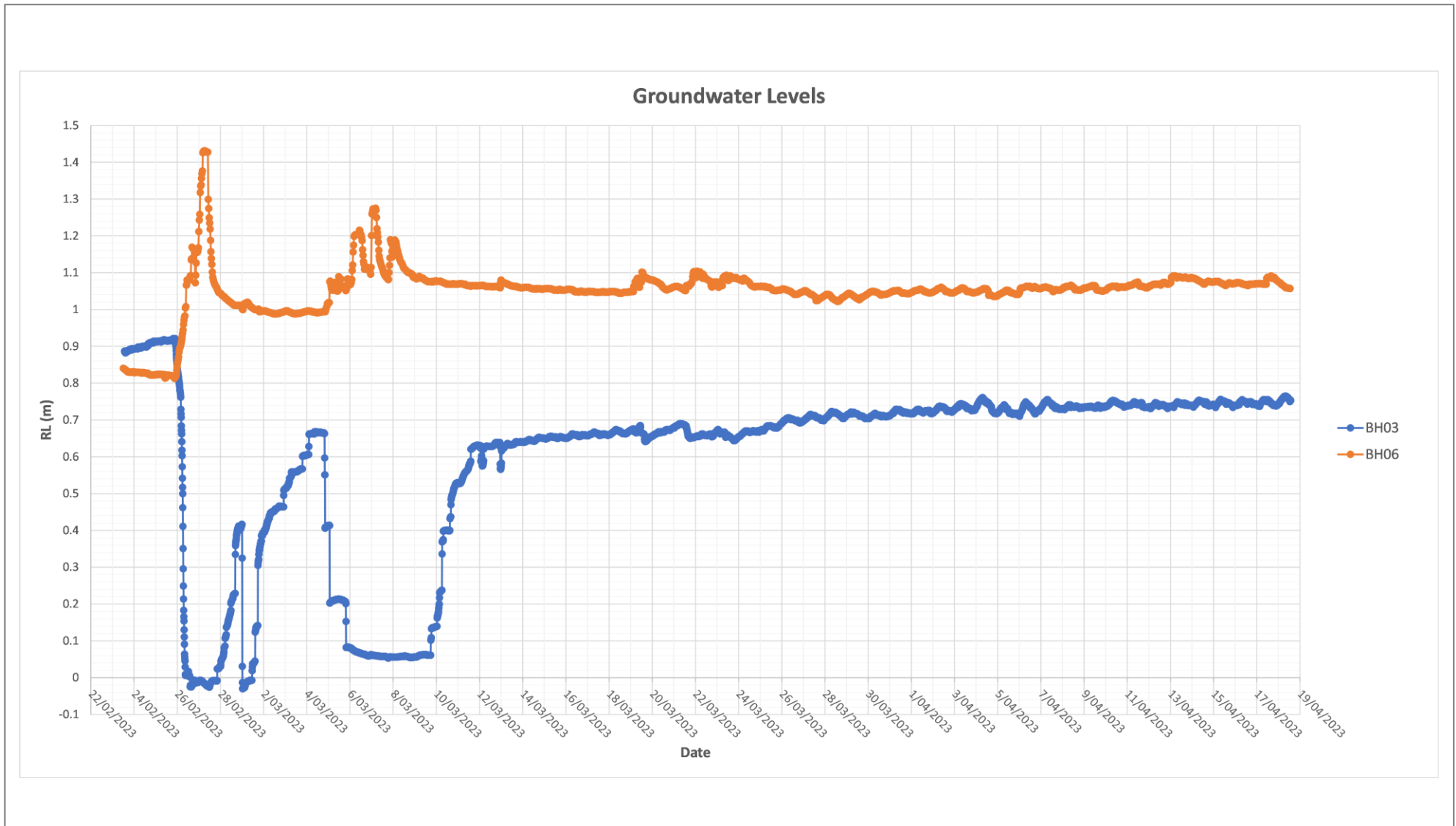
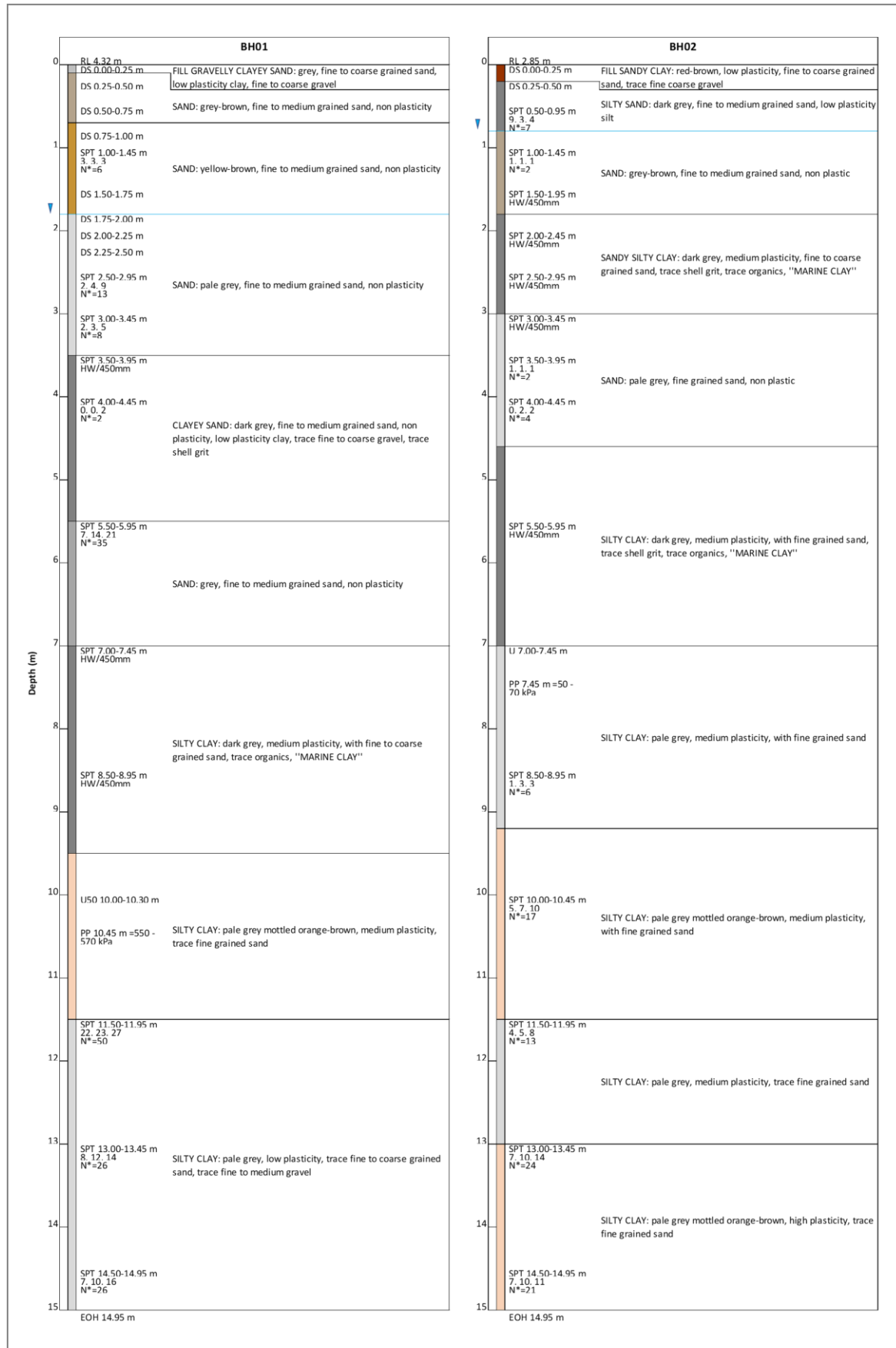


Figure 7: Summary of Groundwater Monitoring Results



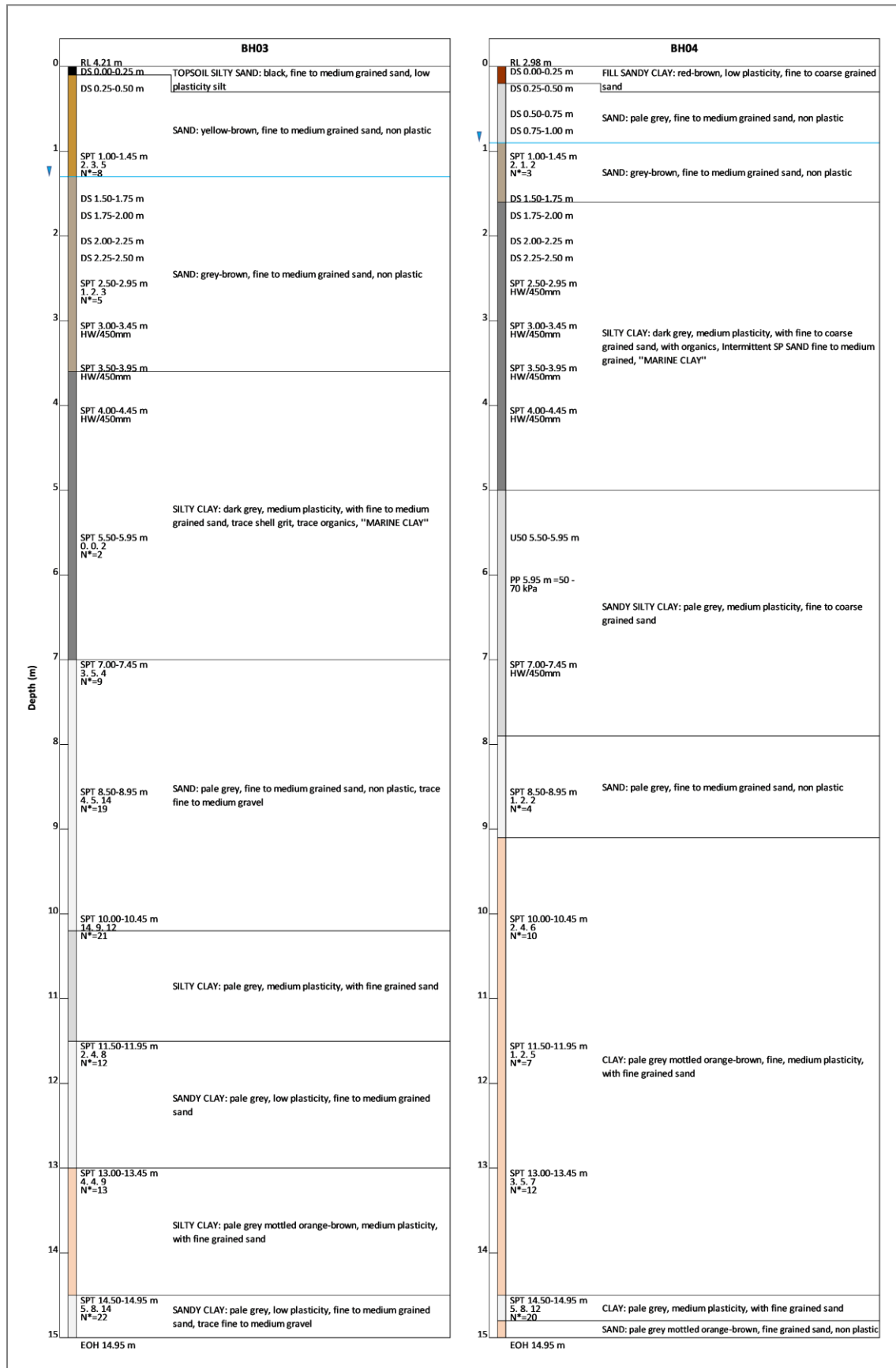


Figure 9: Summary of BH03 and BH04 Results

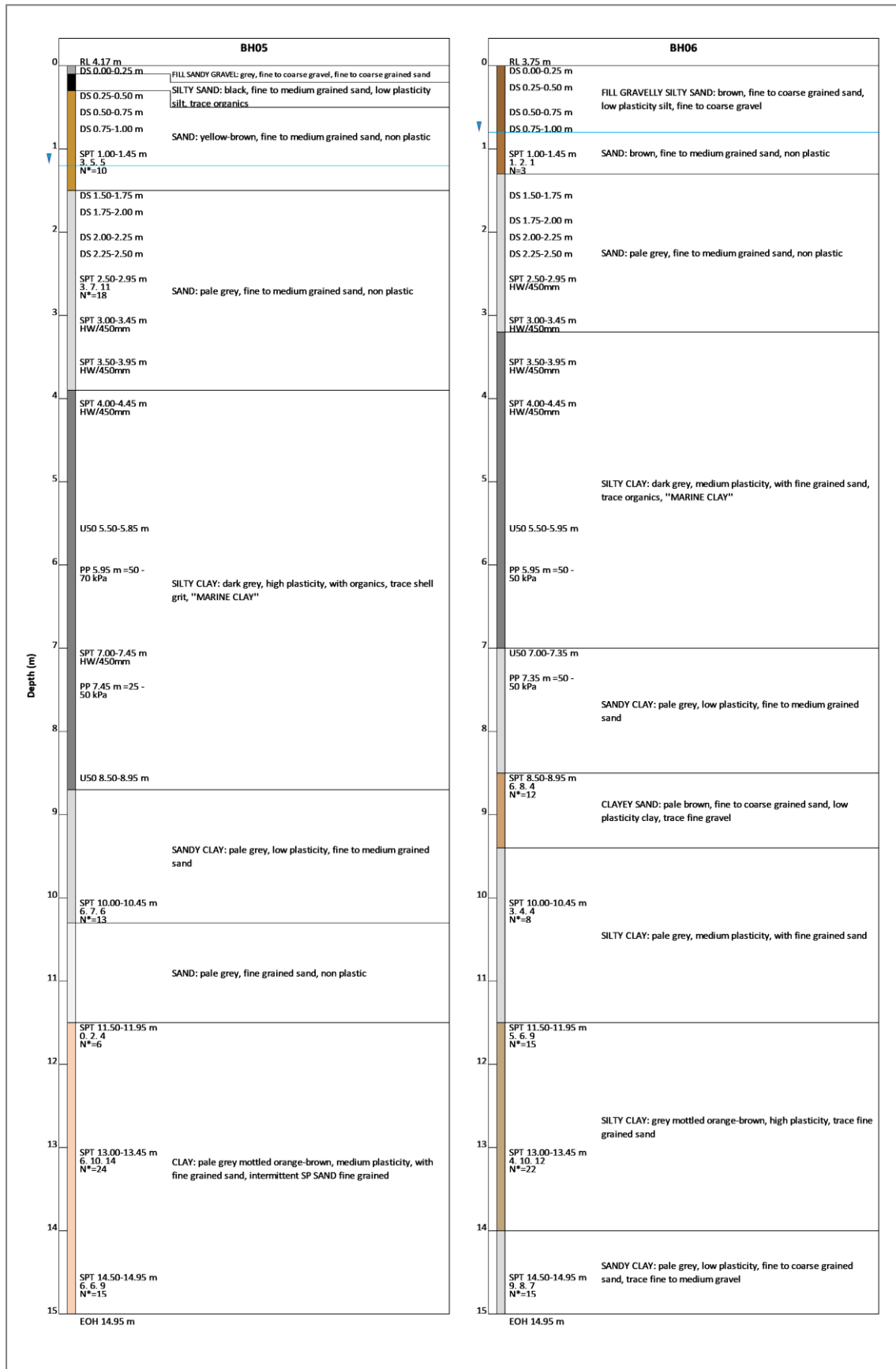


Figure 10: Summary of BH05 and BH06 Results

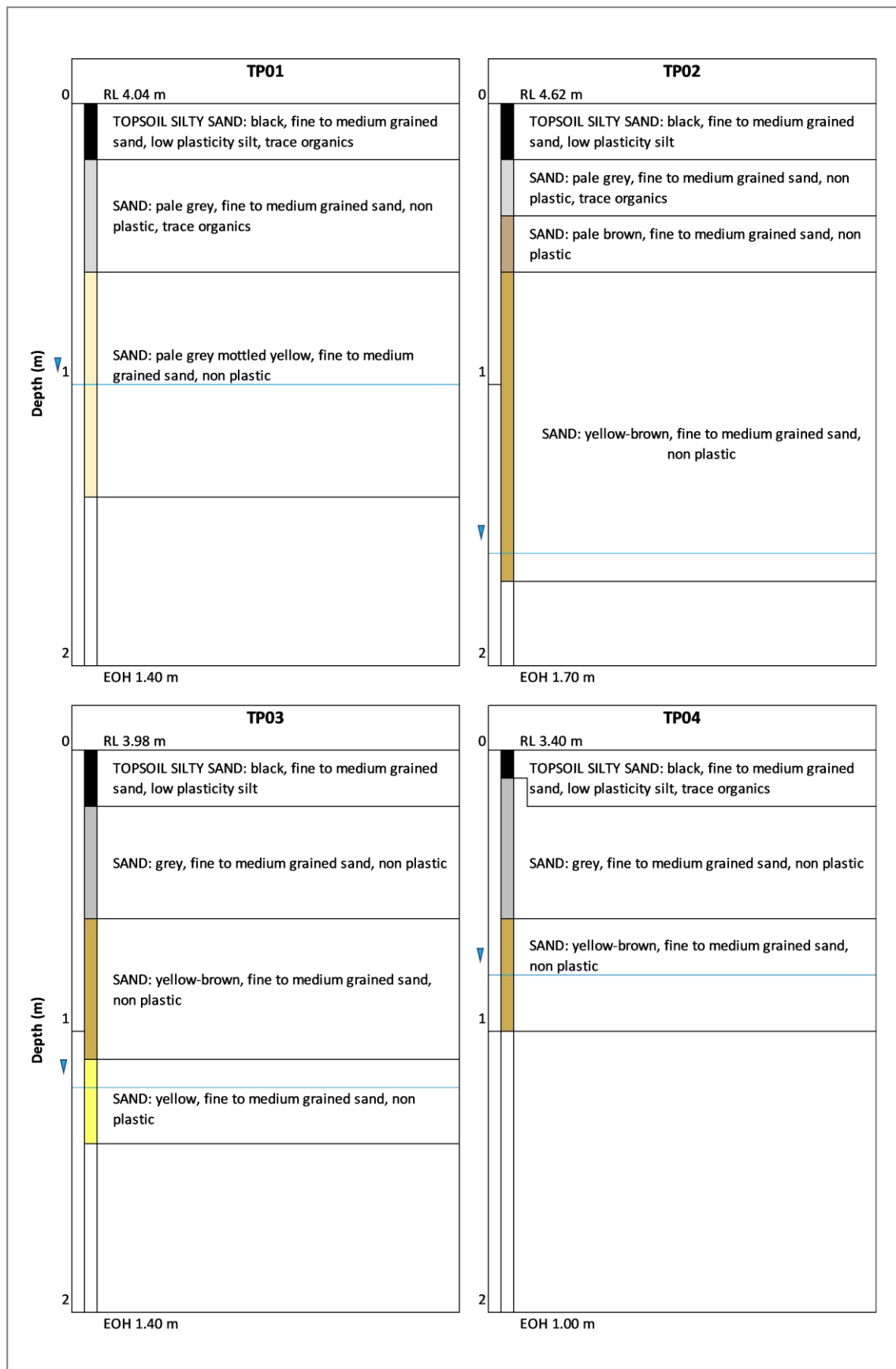


Figure 11: Summary of TP01 to TP04 Results

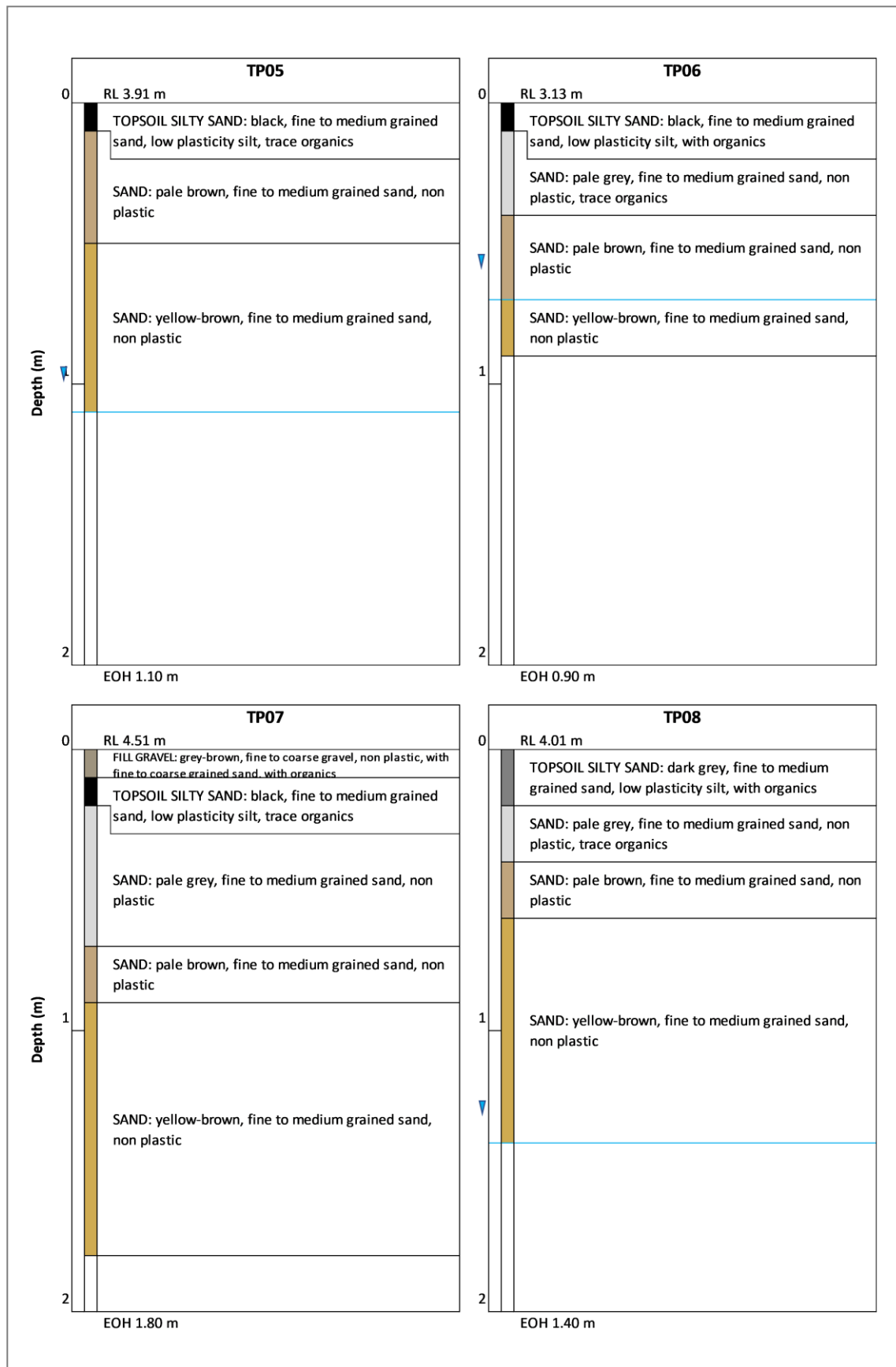


Figure 12: Summary of TP05 to TP08 Results

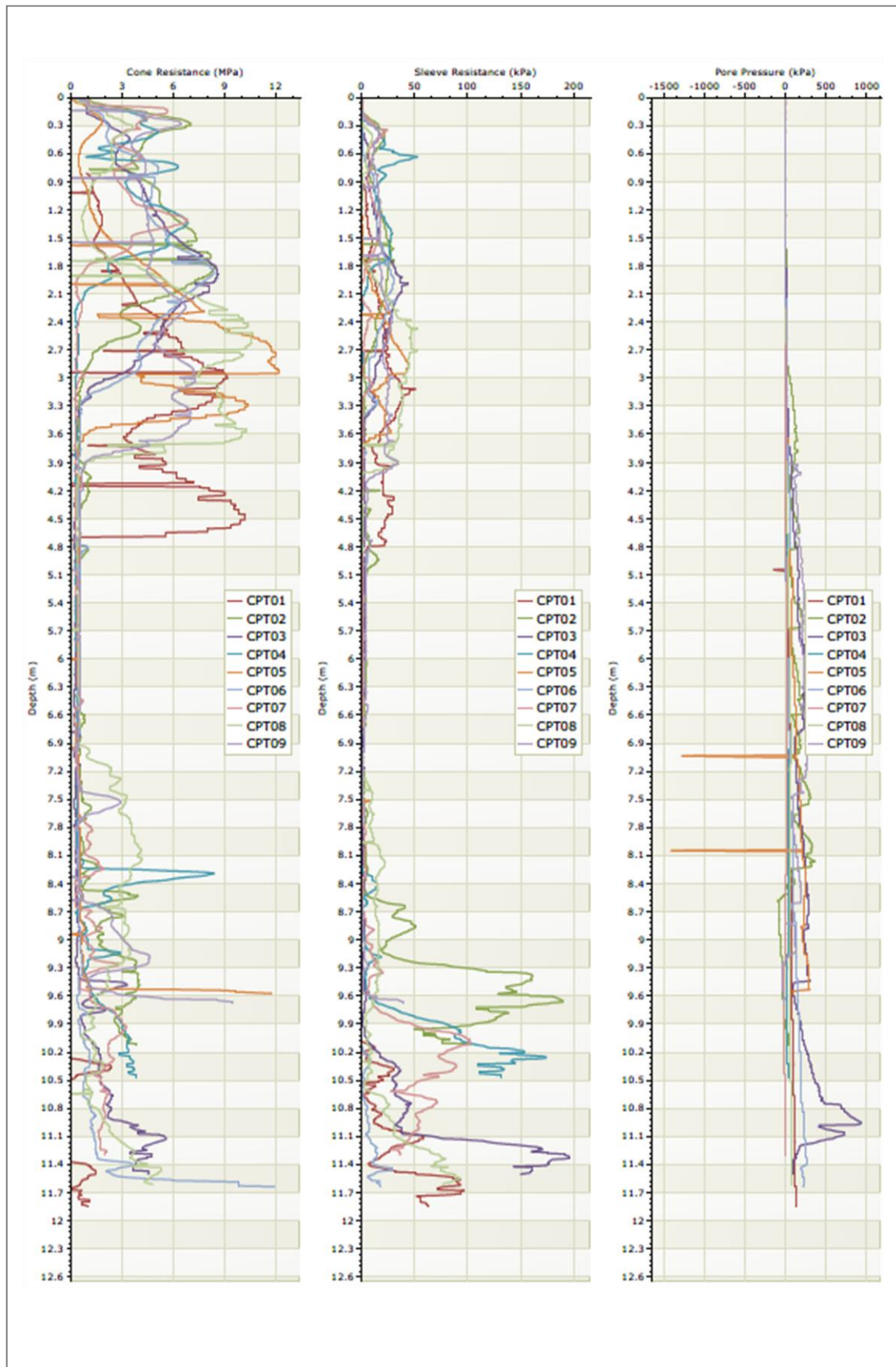


Figure 13: Summary of CPT Results

4.0 Laboratory Testing

4.1 Geotechnical Testing

The results of the geotechnical laboratory testing are presented in Appendix C. The laboratory testing was carried out by Soil Engineering Services and Earth Test in their NATA accredited laboratories.

A summary of the results is presented in Tables 3 and 4 below.

Table 3: Summary of Test Pit Geotechnical Laboratory Testing

Test Location	TP01	TP02	TP05	TP07
Depth (m)	0.2-0.6	0.6-1.0	0.1-0.5	0.7-0.9
Liquid Limit (%)	31	30	31	33
Plastic Limit (%)	NO	NO	NO	NO
Plasticity Index	NP	NP	NP	NP
Linear Shrinkage (%)	0	0	0	0
% <0.075 mm	6	3	5	2
Moisture Content (%)	14.5	13.1	13.2	10.2
CBR (%)	25.0	13.0	25.0	5.0

NP- Non Plastic; NO= Not Obtainable

Table 4: Summary of Borehole Geotechnical Laboratory Testing

Test Location	BH01	BH04	BH04	BH06
Depth (m)	7.0-7.45	5.5-5.95	10.0-10.45	14.5-14.95
Liquid Limit (%)	40	38	50	38
Plastic Limit (%)	19	19	17	14
Plasticity Index	21	19	33	24
Linear Shrinkage (%)	11	9	16	9.5
% <0.075 mm	70	59	80	24
Moisture Content (%)	47.6	51.0	22.0	17.0
CBR (%)	NT	NT	NT	NT

5.0 Proposed Development

As outlined previously, it is understood that the proposed development comprises a main building of up to about four levels in height plus basement, together with smaller buildings with finished floor levels around RL 5.70 m to 6.30 m.

Based on the plans provided, the currently planned finished floor levels for the proposed main building are summarised in Table 5.

Table 5: Approximate Proposed FFL

Level	Finished Floor Level (RL-m)
Service Area Basement	1.00
Basement/Carpark	1.80
Ground Level (Level 00)	5.90
First Floor (Level 01)	11.40
Second Floor (Level 02)	15.15
Third Floor (Level 03)	18.90
Fourth Floor (Level 04)	22.40

In addition to the above, it is understood that the proposed development comprises a large swimming pool along with smaller pools associated with the smaller accommodation buildings, paved access roads and driveways, and landscaped areas.

5.1 Proposed Earthworks

Based on the plans provided, it is understood that significant cut and fill earthworks are proposed at the site including excavation for the basements and pools, and filling to raise the building platform level.

The current ground surface levels outside the areas of previous development generally range between about RL 2.9 m to RL 4.9 m.

It is considered that excavation for basement construction will extend to about 1 m below the basement FFL, to about RL 0 m. However, excavations depths may be locally increased to allow construction of the foundations, services and ancillary structures.

Based on preliminary evaluation, an estimate of the total cut and fill works are summarised in Table 6 below.

Table 6: Estimated Total Cut and Fill at the Site

Earthworks	Volume (m ³)
Total Cut	9,500
Total Fill	24,500

Figures 14 and 15 below show preliminary earthworks plans and indicative earthworks cross sections provided to us. It is understood that further modifications to these plans will be undertaken following design finalisation and based on construction requirements.

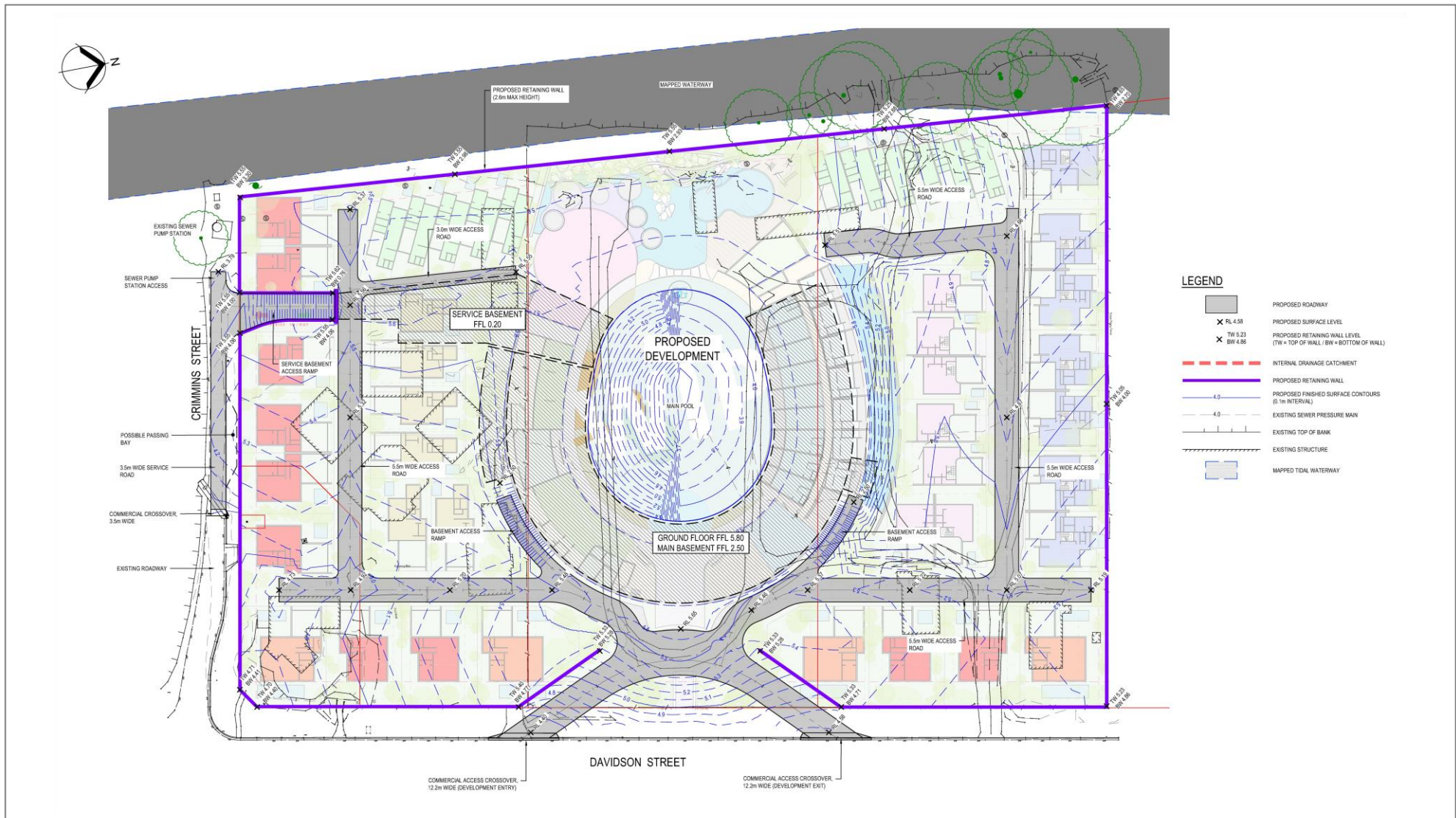


Figure 14: Cut and Fill Plan

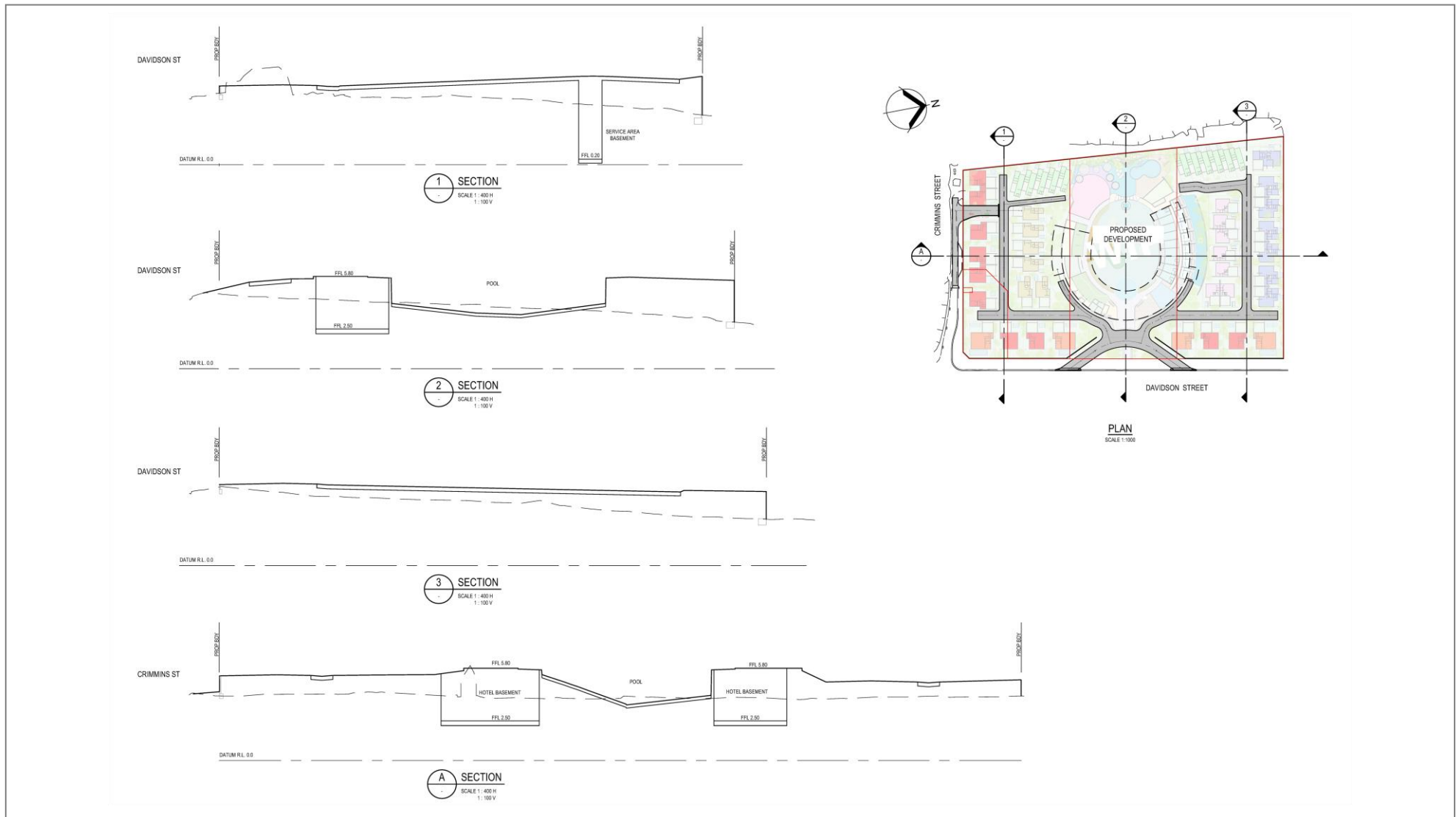


Figure 15: Cut and Fill Section

6.0 Engineering Comments

Engineering comments relating to site preparation and earthworks procedures, foundation options, expected settlements under fill and building loads, and comments regarding retaining wall design are presented in the following sections.

6.1 Cut and Fill Earthworks

As outlined above, significant civil earthworks will be carried out as part of the development.

For areas of filling, site preparation and earthworks procedures should involve the following:

- Strip and remove existing debris/materials, topsoil and soil containing significant amounts of organic materials.
- Strip and remove all cobble and boulders >150 mm in diameter from the surface.
- Compact the subgrade with a heavy roller to reveal soft or loose materials. Soft or loose material that cannot be improved by compaction should be removed and replaced with engineered fill.
- Place fill where required in uniform horizontal layers not exceeding 200 mm loose thickness and compact to achieve a relative dry density ratio of at least 95% using Standard Compaction. Each layer of filling should be keyed into natural ground. Filling should be placed at least 1 m beyond the design profile and then trimmed to the design profile.

It is considered that the upper sand and clay materials could be re-used as engineered fill. Additional imported fill materials should have a Plasticity Index less than 20 and a soaked CBR value of >15%.

It is recommended that all earthworks procedures be carried out in accordance with AS 3798-2007 "Guidelines on Earthworks for Commercial and Residential Developments" and local authority requirements. It is recommended that the earthworks contractor be familiar with site conditions.

6.2 Excavation Conditions

Excavations for the proposed basement and other structures are likely to encounter predominantly sand and clay materials. As such, excavation should be readily achievable with standard excavation equipment such as a >20T excavator.

Excavations below around RL 1.8-2.0 m are likely to encounter groundwater within the upper Zone 1 materials which will result in collapsing conditions. For all excavations below about RL 1.8-2.0 m, temporary or permanent shoring is likely to be required. This could be in the form of sheet piles or soldier piles for deep excavations, or excavation boxes/bracing for shallow excavations.

Localised dewatering of the upper sand layers may also be required to allow construction works to be carried out.

All dewatering and excavation works should consider the potential disturbance of ASS. This is further discussed in Section 7.

Consideration on the effects of dewatering activities on adjacent properties should also be considered. Lowering of the groundwater level in the upper sands of Zone 1 may induce additional settlements. These settlements could impact adjacent structures or buildings, particularly where founded on high level footings.

6.3 Settlements Under New Filling

It is understood that up to about 2.0 m of new filling is to be placed across the site. The placement of new filling will result in consolidation settlement within the soft to firm compressible marine clays at depth.

As a guide, the placement of 1 m of new fill across the site, following site preparation, is likely to induce between about 50 mm to 90 mm in settlement. Differential settlements could be in the order of 40 to 50 mm.

On this basis, the placement of up to 2 m of filling could induce around 100 to 180 mm of total settlement and 80 to 100 mm of differential settlements.

These settlements will be additional to settlements induced by new building loads. The majority of settlements are expected to occur within two years of placement of fill. Additional minor settlements associated with long term creep are expected to occur over a long period (3-20 years).

The impact of these long-term settlements will also need to be considered for the placement of services, including evaluation of potential negative skin friction on some structures.

Potential settlement mitigation options are presented in the following sections.

6.4 Footings

6.4.1 High Level Footings – Main Building

Based on the results of the investigation and the proposed building finished floor levels, the basement areas of the main building will be founded about on or near the soft compressible marine clay layer (Zone 2 materials). Other portions of the proposed main building are envisaged to be founded at about RL 5.0 to 5.5 m.

Preliminary advice on potential new building loads indicate that the main building is likely to have a distributed load of around 65 kPa, with column loads of around 3,600 kN and wall loads of around 250 kN/m.

Estimated settlements for the proposed main building adopting the above loads are in the order of >180 mm with differential settlements in the order of 90 to 140 mm.

On this basis, high level footings are not considered appropriate for the main structure without ground improvement and/or settlement mitigation options being implemented. Without ground improvement, the main structure will need to be founded on pile footings.

If ground improvement or settlement mitigation options are considered, the main structure could be founded on a high-level footing system such as a raft, strip or pad type footings dependent on overall loads. Ground improvement and settlement mitigation options are discussed further below.

6.4.2 High Level Footings – Villas and Smaller Structures

Based on the plans provided, it is understood that the proposed two-level villas and other smaller structures located around the main building will be founded on the constructed filled building platform. On this basis, the buildings will be founded at around RL 5.5 m to 6.0 m.

As outlined previously, settlements under new filling could be in the order of around 50 mm to 90 mm for every 1 m of new fill. It is expected that most (around 70%) of settlement will occur within the initial 6 months of fill placement leaving up to 15 mm to 30 mm of settlement to occur over an extended period for each 1 m of new fill. The majority of settlement will be complete after around 2 years.

Preliminary estimates of loadings of the two-level villas indicate distributed loads of around 23 kPa. On this basis, total and differential settlements for the two-level villas and other low-level structures founded on a raft type footing could be in the order of around 40 to 80 mm. These settlements would be in addition to the settlements associated with the placement of new filling.

Settlements under high level strip or pad footings (<1.4 m square) founded on the proposed building platform are likely to induce about <20 mm of total and differential settlement, in addition to settlements associated with the placement of fill.

If adopted, high level footings founded on the placed engineered fill could be designed using an allowable bearing pressure of 100 kPa. For the purposes of AS2870-2011, high level pad or strip footings constructed in accordance with the above could be designed in accordance with a Class S site.

Alternatively, the structures could be founded on deep footings.

Ground improvement and settlement mitigation options are presented in the following sections.

6.5 Deep Footings

6.5.1 General

The proposed main structure should be founded on pile footings such as driven enlarged base cast-in-situ ('Franki') piles (or similar), driven precast concrete, or bored pile footings. The two-level villas and other structures could also be founded on pile type footings depending on the construction options selected.

Comments are provided in the following sections on appropriate unfactored ultimate loadings ($R_{d,ug}$) for bored pier and driven piles, and driven enlarged base 'Franki' piles, which are the predominant pile type used in the area.

The design geotechnical strength ($R_{d,g}$) may then be obtained after multiplying $R_{d,ug}$ by a geotechnical strength reduction factor (ϕ_g). Based on the overall design average risk rating (ARR) as outlined in AS 2159-2009, a ϕ_g value of 0.48 to 0.52 is suggested for the design of piles at this site.

A higher geotechnical strength reduction factor may be applied if the installed piles are subjected to load testing to confirm pile capacities. This higher value will depend upon the percentage of piles to be tested, and the test type utilised.

For working stress design of piles, the unfactored ultimate end bearing and skin friction values may be divided by a factor of safety of 2.5 in order to obtain the allowable working pressures.

It is suggested that specialist contractors be approached to comment on predicted loads for their pile types, ability to penetrate soil layers, and the possibility of vibrations affecting nearby structures, since some of these are proprietary pile types and load capacities may vary dependent upon how the pile shaft and enlarged base are formed.

It is recommended that pile load testing be carried out on all piles installed to confirm their structural capacity. All pile load testing should be carried out in accordance with the relevant standards/guidelines.

6.5.2 Franki Piles

Minimum 400 mm diameter Franki piles founded at least three times their diameter into the very stiff to hard clay or medium dense sands below about RL-10.0 m can be designed using an unfactored ultimate compressive loading of 1500 kN and shaft adhesion of 100 kN/m. Franki piles should have a minimum enlarged base of 1.5 times the tube diameter.

6.5.3 Driven Piles

Driven piles founded at least three times their diameter into the very stiff to hard clay or medium dense sands below about RL-10.0 m may be designed using an unfactored ultimate end bearing pressure of 1800 kPa and shaft friction of 70 kPa, neglecting the contribution of the upper 1 m of material.

Vibration induced damage on adjacent structures associated with piling will need to be considered.

6.5.4 Bored Piles

Bored pier footings founded at least three times their diameter into the very stiff to hard clay or medium dense sands below about RL-10.0 m may be designed using an unfactored ultimate bearing pressure of 1000 kPa and shaft adhesion of 40 kPa neglecting the contribution of the upper 1 m of the pile shaft.

Given the materials encountered, it is considered that bored pile installation will require the use of liners. Alternatively, Continuous Flight Auger (CFA) piles could be adopted.

6.5.5 Summary

Further to the above, the design parameters which could be adopted for the design of piles for the proposed buildings are summarised below in Table 7.

Table 7: Summary of Geotechnical Pile Design Parameters

Pile Type	Ultimate End Bearing Capacity	Ultimate Shaft Friction
Franki Pile (400 mm with Enlarged Base)	1500 kN	100 kN/m
Driven Piles	1800 kPa	70 kPa
Bored Piles	1000 kPa	40 kPa

It should be noted that pile load tests should be carried out to evaluate actual pile capacities. Pile construction should be carried out under the supervision and direction of a suitably experienced engineer.

6.5.6 Negative Skin Friction

Settlement within the soft to firm compressible clay will result in the development of negative skin friction along the shaft of installed piles. The negative skin friction applies an additional load to the piles, thus reducing the piles capacity to carry the proposed building loads.

Negative skin friction will likely occur throughout the period of settlement of the marine clays as the consolidation rate of the surrounding soil mass is greater than that of the piles.

It is estimated that negative skin friction could be in the order of up to 60 kN for installed piles.

6.6 Settlement Mitigation Measures

Options to mitigate potential settlements associated with the placement of new fill and the proposed new structures and increase ground bearing pressures could be considered. These include preloading, surcharging and ground improvement.

6.6.1 Preloading/Surcharging

To limit the effects of settlement on the proposed buildings, surcharging or preloading in these areas could be carried out.

Surcharging involves the placement of fill or surface loads higher than those expected under the proposed new filling and building loads. The placed higher load increases the consolidation of the soft marine clays allowing higher settlements to occur within a shorter timeframe. Surcharging generally continues until the estimated remaining settlements are within tolerable levels.

At this site, a surcharge load of >80 kPa is expected to be required to achieve the settlements required within a 6 month period. This would equate to the placement of around 4 m of filling across the site.

Preloading involves loading the site with an equivalent design load to allow expected settlements to occur before constructing the buildings or other structures.

As outlined previously, up to about 70% of total and differential settlements are expected to occur within 6 months of fill placement. This would result in <30% of the total settlement should occur within the first 2 years of fill placement.

Given the time and construction restraints involved with surcharging or preloading, it is considered that surcharging or preloading are not expected to be viable options in this instance.

6.6.2 Ground Improvement

Based on the results of the investigation, it is considered that ground improvement works could be adopted at the site. Ground improvement works could comprise the installation of Deep Soil Mixing (DSM) columns or similar to increase the bearing capacity and reduce potential settlements induced by building and fill loads through the increase of overall stiffness of the underlying compressible marine clay.

The process of DSM comprises the in-situ mixing of the existing soils with a cement based slurry. The slurry injection and mixing process is achieved through the use of a specialised mixing paddle and grouting system. The DSM system is widely used in the construction industry worldwide with many examples of successful use.

The design and installation of DSM systems are through accepted and approved design and construction standards adopted throughout the industry by government departments and specialised contractors. Quality control and assurance is provided through continuous logging of the installed columns using an on-board computer-controlled system and through the post construction evaluation of the mixed columns. The post construction evaluation usually comprises the coring of some installed columns and laboratory testing of the recovered core samples to confirm the strengths and mixing ratios are within design limits.

The aims of the ground improvement works through the installation of DSM columns would be to form a stiff block of soil below founding level which would allow the adoption of a high level raft type footing in lieu of piled footings. This would be achieved through the installation of DSM columns (of a minimum 600 mm diameter) on a nominal grid over the site. The columns should extend to into or below the soft compressible clay layer and be placed in areas of filling and building areas including the basement. A nominal design of DSM columns installed on a 2.0 m grid to a depth of about 6-8 m could be adopted for initial estimation purposes.

In areas of filling, it is considered that following site preparation DSM columns could be installed at the prepared subgrade level. Filling would then be placed over to reach the design heights.

If DSM ground improvement is considered, a detailed design analyses should be undertaken to confirm viability and design specifics. The detailed design should also include finite element modelling of the ground improvement system considering the loads of the proposed structure and the effects of the DSM soils on potential surface movements and overall capacity.

6.6.3 High Level Footings Following DSM Ground Improvement

Following DSM ground improvement works as outlined above, a high-level footing system could be adopted. The high-level footing system should include a stiffened raft type footing founded on the prepared building platform. A high-level stiffened raft, founded in this manner and following ground improvement works could be designed using an allowable bearing pressure of 150 kPa.

Total and differential settlements for the site following filling and the placement of a stiffened raft footing founded in the above manner, and following the installation of a suitable ground improvement system are expected to be less than 40 mm.

6.7 Pavement Design

It is envisaged that new pavements will be primarily founded within the upper sand horizons or engineered fill. As such, in accordance with the Austroads guidelines, it is recommended that a subgrade CBR of 10% could be adopted for the natural sandy subgrades or engineered fill for design of pavements at the site.

6.8 Basement Construction

As outlined above, it is understood that the proposed development includes the construction of a basement car parking area and back of house facilities with a maximum finished floor level of around RL 1.0 m. On this basis, the basement will be formed near the natural groundwater level which is likely to result in the requirement for dewatering. The basement is also likely to be founded near the upper surface or within the soft marine clay.

The temporary batters of the proposed basement excavation will need to be supported. It is envisaged that the support is likely to be in the form of temporary or permanent sheet piles or similar placed around the perimeter of the proposed basement area. Design parameters for the design of sheet piles or similar braced walls are outlined the following sections.

The basement should be designed to be fully tanked and able to withstand expected hydrostatic pressures based on an assumed groundwater level near the proposed finished surface level. The basement walls should also consider external loadings behind the crest of the walls.

Given that the basement will be founded within or near the soft compressible marine clay, or within loose wet sand, a working platform will be required to allow access for construction equipment and to maintain an acceptable level of workability.

A working platform comprising the placement of Tensar geogrid reinforced geofabric layers and crushed rock materials such as a -70 mm quarry product could be considered. A typical design would include the placement of a layer of Tensar geogrid reinforced geofabric on the exposed subgrade and then the placement of 150 mm thick layer of compacted gravel. This process should be completed for a minimum thickness of 450 mm overall (3 layers of Tensar geogrid reinforced geofabric – base, 150 mm and 300 mm heights).

Further advice for the design of the working platform can be provided if required. The design will need to take into consideration the proposed equipment and access requirements (such as for pile rigs, trucks etc) to the base of the excavation.

6.9 Retaining Structures

The excavation for the proposed basement will require the installation of temporary or permanent batter support to allow construction. It is envisaged likely that the support will likely be in the form of sheet piles installed around the perimeter of the basement excavation.

Other retaining walls where they are part of landscaping or other structures could be founded on high level or deep footings. High level footings (strip/pad or slab on ground) should be founded in the loose to medium dense upper sands or engineered fill following site preparation. High level footings for the retaining walls founded in this manner could be designed with an allowable bearing pressure of 100 kPa.

Bored pier footings for retaining walls should be founded at least three times their diameter into the loose to medium dense sands or very stiff sandy clays below the marine clay layer. Bored pier footings founded in this manner can be designed using an allowable end bearing pressure of 250 kPa and an allowable shaft adhesion of up to 40 kPa, neglecting the contribution of the upper 1 m of the shaft.

It is recommended that all new temporary and permanent retaining structures be designed using the design parameters provided in Table 8 including at rest (K_0), active (K_a) and passive (K_p) earth pressure coefficients.

Table 8: Retaining Wall Design Parameters

Material Description	Density γ'	K_0	K_a	K_p
Loose to Medium Dense Sand	20 kN/m ³	0.35	0.55	2.75
Soft to Firm Clay	18 kN/m ³	0.60	0.75	NA
Stiff to Very Stiff Clays	20 kN/m ³	0.4	0.6	2.0

All retaining walls should include any surcharge loads imposed on the walls.

All retaining walls should be designed by a Structural Engineer.

7.0 Acid Sulfate Soils (ASS)

7.1 General

The proposed development comprises significant cut earthworks as part of the construction of the building and pool areas. Based on our experience in this area of Port Douglas and the subsurface conditions encountered as part of this investigation, it is considered that the presence of Potential Acid Sulfate Soils (PASS) is likely to be encountered as part of the excavation works.

In general, darkly hued marine clays and sands typical for this area of Port Douglas and within the upper 10 m of the soil profile are likely to be PASS. Disturbances to these materials through excavation works are likely to result in the requirement for treatment and the adoption of an Acid Sulfate Soils Management Plan in accordance with the Queensland Acid Sulfate Soil Technical Manual.

7.2 ASS Sampling

Sampling for ASS was carried out in accordance with the state guidelines within boreholes BH01 to BH06 to depths of about 4.5 m below the current ground surface (approximately RL-1.6 m to 0.3 m).

In general, samples were collected at 0.25 m intervals through collection of materials from the auger in the upper soil profile and through the performance of continuous Standard Penetration Test (SPT) sampling or undisturbed tube (U50) sampling thereafter. Samples were placed in sealed plastic sample bags and placed on ice for storage. Upon return to the office, the samples were stored in a freezer until transported for laboratory testing.

7.3 Field Testing

Field pH testing (pH_F and pH_{FOX}) were carried out on the collected 0.25 m samples. The results of the field testing are presented in Tables 11 to 16 and are summarised in Table 17 below.

The results are presented in general accordance with Section H (Field Tests) of the Acid Sulfate Soil Laboratory Method Guidelines Version 2.1 -June, 2004). The descriptive of the Reaction Strength and evaluations of the conditions indicating PASS or AASS (Conditions a to c) are in accordance with the above guide and are summarised in Tables 9 and 10 below.

Table 9: Summary of Reaction Strengths

Reaction Strength				
Reaction Strength Number	1	2	3	4
Description	Slight	Moderate	High	Very Vigorous

Table 10: Evaluations of the Conditions Indicating PASS or AASS

Interpretation of Field Tests	
Condition a	The strength of the reaction with peroxide is a useful indicator but cannot be used alone. Organic matter and other soil constituents such as manganese oxides can also cause a reaction.
Condition b	A pH_{FOX} value at least one unit below pH_F may indicate a potential acid sulfate soil (PASS). The greater the difference between the two measurements, the more indicative the value is of a PASS. The lower the final pH_{FOX} value is, the better the
Condition c	If the $pH_{FOX} < 3$, and the other two conditions apply, then it strongly indicates a PASS. The more the pH_{FOX} drops below 3, the more positive the presence of sulfides.

Table 11: Borehole BH01 Field pH Test Results

BH01								
Top (mbgl)	Bottom (mbgl)	Material Type	Reaction Strength	pH _F	pH _{Fox}	Condition a	Condition b	Condition c
0.00	0.25	Moderately Hued SAND	4	5.49	4.48	Y	Y	
0.25	0.50	Lightly Hued SAND	4	5.52	4.51	Y	Y	
0.50	0.75	Lightly Hued SAND	1	5.19	5.19			
0.75	1.00	Lightly Hued SAND	1	5.17	5.18			
1.00	1.25	Lightly Hued SAND	1	5.90	5.87			
1.25	1.50	Lightly Hued SAND	1	5.90	5.88			
1.50	1.75	Lightly Hued SAND	1	5.63	6.00			
1.75	2.00	Lightly Hued SAND	1	5.64	6.01			
2.00	2.25	Lightly Hued SAND	1	6.25	5.46			
2.25	2.50	Lightly Hued SAND	1	6.25	5.47			
2.50	2.75	Lightly Hued SAND	1	6.55	5.95			
2.75	3.00	Lightly Hued SAND	1	6.54	5.95			
3.00	3.25	Lightly Hued SAND	1	6.92	6.27			
3.25	3.50	Lightly Hued SAND	1	6.93	6.28			
3.50	3.75	Darkly Hued SAND	4	4.99	1.49	Y	Y	Y
3.75	4.00	Darkly Hued SAND	4	5.01	1.50	Y	Y	Y
4.00	4.25	Darkly Hued SAND	4	4.89	1.30	Y	Y	Y
4.25	4.50	Darkly Hued SAND	4	4.89	1.30	Y	Y	Y

Table 12: Borehole BH02 Field pH Test Results

BH02								
Top (mbgl)	Bottom (mbgl)	Material Type	Reaction Strength	pH _F	pH _{Fox}	Condition a	Condition b	Condition c
0.00	0.25	Moderately Hued SAND Fill	1	5.64	4.27		Y	
0.25	0.50	Dark Hued SAND	1	5.98	4.33		Y	
0.50	0.75	Dark Hued SAND	1	5.54	5.24			
0.75	1.00	Dark Hued CLAY	1	5.51	5.26			
1.00	1.25	Dark Hued CLAY	1	5.55	5.56			
1.25	1.50	Dark Hued CLAY	1	5.67	5.54			
1.50	1.75	Dark Hued CLAY	1	5.36	5.51			
1.75	2.00	Dark Hued CLAY	1	5.37	5.51			
2.00	2.25	Dark Hued CLAY	1	5.44	5.53			
2.25	2.50	Dark Hued CLAY	1	5.62	5.56			
2.50	2.75	Dark Hued CLAY	1	6.47	5.72			
2.75	3.00	Dark Hued CLAY	1	6.44	5.70			
3.00	3.25	Lightly Hued SAND	4	4.57	1.33	Y	Y	Y
3.25	3.50	Lightly Hued SAND	4	4.55	1.31	Y	Y	Y
3.50	3.75	Lightly Hued SAND	4	3.88	1.33	Y	Y	Y
3.75	4.00	Lightly Hued SAND	4	3.92	1.32	Y	Y	Y
4.00	4.25	Lightly Hued SAND	4	5.67	1.18	Y	Y	Y
4.25	4.50	Lightly Hued SAND	4	5.71	1.16	Y	Y	Y

Table 13: Borehole BH03 Field pH Test Results

BH03								
Top (mbgl)	Bottom (mbgl)	Material Type	Reaction Strength	pH _F	pH _{Fox}	Condition a	Condition b	Condition c
0.00	0.25	Dark Hued SAND	2	4.86	4.39			
0.25	0.50	Lightly Hued SAND	2	4.86	4.37			
0.50	0.75	Lightly Hued SAND	2	4.95	3.71		Y	
0.75	1.00	Lightly Hued SAND	2	4.93	3.69		Y	
1.00	1.25	Lightly Hued SAND	2	4.81	2.79		Y	Y
1.25	1.50	Lightly Hued SAND	2	4.83	2.81		Y	Y
1.50	1.75	Lightly Hued SAND	2	4.97	3.89		Y	
1.75	2.00	Lightly Hued SAND	2	4.96	3.89		Y	
2.00	2.25	Lightly Hued SAND	2	4.99	2.97		Y	Y
2.25	2.50	Lightly Hued SAND	2	4.99	2.99		Y	Y
2.50	2.75	Lightly Hued SAND	4	5.24	1.29	Y	Y	Y
2.75	3.00	Lightly Hued SAND	4	5.21	1.27	Y	Y	Y
3.00	3.25	Lightly Hued SAND	4	5.87	1.10	Y	Y	Y
3.25	3.50	Lightly Hued SAND	4	5.88	1.11	Y	Y	Y
3.50	3.75	Dark Hued CLAY	4	5.38	1.13	Y	Y	Y
3.75	4.00	Dark Hued CLAY	4	5.40	1.13	Y	Y	Y
4.00	4.25	Dark Hued CLAY	4	4.31	1.13	Y	Y	Y
4.25	4.50	Dark Hued CLAY	4	4.33	1.13	Y	Y	Y

Table 14: Borehole BH04 Field pH Test Results

BH04								
Top (mbgl)	Bottom (mbgl)	Material Type	Reaction Strength	pH _F	pH _{Fox}	Condition a	Condition b	Condition c
0.00	0.25	Moderately Hued CLAY Fill	2	4.67	4.19			
0.25	0.50	Lightly Hued SAND	2	4.48	4.22			
0.50	0.75	Lightly Hued SAND	1	5.11	4.60			
0.75	1.00	Lightly Hued SAND	1	5.13	4.61			
1.00	1.25	Lightly Hued SAND	2	5.52	3.33		Y	
1.25	1.50	Lightly Hued SAND	2	5.52	3.34		Y	
1.50	1.75	Dark Hued CLAY	4	4.97	1.21	Y	Y	Y
1.75	2.00	Dark Hued CLAY	4	4.95	1.19	Y	Y	Y
2.00	2.25	Dark Hued CLAY	4	5.02	1.12	Y	Y	Y
2.25	2.50	Dark Hued CLAY	4	4.99	1.10	Y	Y	Y
2.50	2.75	Dark Hued CLAY	4	5.61	1.12	Y	Y	Y
2.75	3.00	Dark Hued CLAY	4	5.61	1.11	Y	Y	Y
3.00	3.25	Dark Hued CLAY	4	5.74	1.53	Y	Y	Y
3.25	3.50	Dark Hued CLAY	4	5.73	1.52	Y	Y	Y
3.50	3.75	Dark Hued CLAY	4	6.39	1.53	Y	Y	Y
3.75	4.00	Dark Hued CLAY	4	6.39	1.52	Y	Y	Y
4.00	4.25	Dark Hued CLAY	4	6.44	1.64	Y	Y	Y
4.25	4.50	Dark Hued CLAY	4	6.42	1.63	Y	Y	Y

Table 15: Borehole BH05 Field pH Test Results

BH05								
Top (mbgl)	Bottom (mbgl)	Material Type	Reaction Strength	pH _F	pH _{Fox}	Condition a	Condition b	Condition c
0.00	0.25	Moderately Hued SAND/GRAVEL	2	7.08	5.51		Y	
0.25	0.50	Lightly Hued SAND	2	7.05	5.49		Y	
0.50	0.75	Lightly Hued SAND	1	6.83	6.16			
0.75	1.00	Lightly Hued SAND	1	6.84	6.15			
1.00	1.25	Lightly Hued SAND	1	7.15	6.42			
1.25	1.50	Lightly Hued SAND	1	7.13	6.40			
1.50	1.75	Lightly Hued SAND	1	6.46	5.98			
1.75	2.00	Lightly Hued SAND	1	6.47	5.99			
2.00	2.25	Lightly Hued SAND	1	6.62	5.94			
2.25	2.50	Lightly Hued SAND	1	6.59	5.94			
2.50	2.75	Lightly Hued SAND	1	6.94	6.08			
2.75	3.00	Lightly Hued SAND	1	6.93	6.06			
3.00	3.25	Lightly Hued SAND	4	5.25	2.08	Y	Y	Y
3.25	3.50	Lightly Hued SAND	4	5.25	2.05	Y	Y	Y
3.50	3.75	Lightly Hued SAND	4	5.81	1.23	Y	Y	Y
3.75	4.00	Lightly Hued SAND	4	5.79	1.21	Y	Y	Y
4.00	4.25	Dark Hued CLAY	4	7.11	1.55	Y	Y	Y
4.25	4.50	Dark Hued CLAY	4	7.10	1.54	Y	Y	Y

Table 16: Borehole BH06 Field pH Test Results

BH06								
Top (mbgl)	Bottom (mbgl)	Material Type	Reaction Strength	pH _F	pH _{Fox}	Condition a	Condition b	Condition c
0.00	0.25	Moderately Hued SAND Fill	1	6.78	5.52		Y	
0.25	0.50	Moderately Hued SAND Fill	1	6.68	5.34		Y	
0.50	0.75	Moderately Hued SAND Fill	1	5.88	4.71		Y	
0.75	1.00	Lightly Hued SAND	1	5.75	4.42		Y	
1.00	1.25	Lightly Hued SAND	1	5.83	5.21			
1.25	1.50	Lightly Hued SAND	1	5.77	4.29		Y	
1.50	1.75	Lightly Hued SAND	1	5.81	4.90			
1.75	2.00	Lightly Hued SAND	1	5.80	4.89			
2.00	2.25	Lightly Hued SAND	1	5.97	5.05			
2.25	2.50	Lightly Hued SAND	1	5.96	5.42			
2.50	2.75	Lightly Hued SAND	1	6.31	5.34			
2.75	3.00	Lightly Hued SAND	1	6.16	5.34			
3.00	3.25	Lightly Hued SAND	1	5.65	3.66		Y	
3.25	3.50	Dark Hued CLAY	1	5.61	3.10		Y	
3.50	3.75	Dark Hued CLAY	4	6.47	0.47	Y	Y	Y
3.75	4.00	Dark Hued CLAY	4	6.19	0.48	Y	Y	Y
4.00	4.25	Dark Hued CLAY	4	6.40	0.57	Y	Y	Y
4.25	4.50	Dark Hued CLAY	4	6.50	0.54	Y	Y	Y

7.4 Chromium Suite Testing

Following a review of the field pH testing, samples were selected for Chromium Suite testing. Based on the results, together with experience with similar materials in the Port Douglas area, Chromium Suite testing was carried out on selected composite samples within the proposed excavation disturbance area. The aim was to characterise the general nature of the predominant materials in this zone in terms of the actual and potential acidity.

The laboratory testing was carried out by Eurofins in their NATA accredited laboratory. The results of the laboratory testing are presented in Appendix C and summarised in Tables 17 to 20 below.

Table 17: Summary of Chromium Suite Results

Test Location	BH01	BH01	BH02	BH02
Sample Depth (m)	3.0-3.5	3.5-4.0	1.0-1.5	1.5-2.0
Material Type	Lightly Hued SAND	Darkly Hued SAND	Dark Hued CLAY	Dark Hued CLAY
Net Acidity (% S) Excluding ANC	<0.02	0.53	0.07	0.05
Net Acidity (moles H+/T) Excluding ANC	<10	330	41	29
Liming Rate (kg CaCO ₃ /T) Excluding ANC	<1	25	3.1	2.1
pH KCl	5.8	4.0	4.6	4.6
TAA (% pyrite S)	<0.003	0.10	0.036	0.027
Chromium Reducible Sulfur (Scr) (%)	0.007	0.43	0.029	0.018
Chromium Reducible Sulfur (Scr) (moles H+/T)	4.1	270	18	11
Acid Neutralisation Capacity (ANCBT) (% CaCO ₃)	N/A	N/A	N/A	N/A
Liming Rate (kg CaCO ₃ /T)	<1	25	3.1	2.1

Table 18: Summary of Chromium Suite Results

Test Location	BH02	BH02	BH02	BH03
Sample Depth (m)	2.0-2.5	2.5-3.0	3.0-3.5	3.5-4.0
Material Type	Dark Hued CLAY	Dark Hued CLAY	Lightly Hued SAND	Dark Hued CLAY
Net Acidity (% S) Excluding ANC	0.74	0.98	0.14	1.8
Net Acidity (moles H+/T) Excluding ANC	460	610	90	1100
Liming Rate (kg CaCO ₃ /T) Excluding ANC	35	46	6.8	85
pH KCl	4.0	3.9	5.0	3.7
TAA (% pyrite S)	0.16	0.15	0.017	0.30
Chromium Reducible Sulfur (Scr) (%)	0.58	0.82	0.13	1.5
Chromium Reducible Sulfur (Scr) (moles H+/T)	360	510	80	950
Acid Neutralisation Capacity (ANCBT) (% CaCO ₃)	N/A	N/A	N/A	N/A
Liming Rate (kg CaCO ₃ /T)	35	46	6.8	85

Table 19: Summary of Chromium Suite Results

Test Location	BH04	BH04	BH04	BH04
Sample Depth (m)	1.0-1.5	1.5-2.0	2.0-2.5	2.5-3.0
Material Type	Lightly Hued SAND	Dark Hued CLAY	Dark Hued CLAY	Dark Hued CLAY
Net Acidity (% S) Excluding ANC	0.03	1.4	0.09	1.6
Net Acidity (moles H+/T) Excluding ANC	18	890	55	980
Liming Rate (kg CaCO ₃ /T) Excluding ANC	1.3	67	4.2	74
pH KCl	5.1	4.0	4.5	4.3
TAA (% pyrite S)	0.016	0.28	0.033	0.18
Chromium Reducible Sulfur (Scr) (%)	0.012	1.1	0.055	1.4
Chromium Reducible Sulfur (Scr) (moles H+/T)	7.6	710	35	870
Acid Neutralisation Capacity (ANCBT) (% CaCO ₃)	N/A	N/A	N/A	N/A
Liming Rate (kg CaCO ₃ /T)	1.3	67	4.2	74

Table 20: Summary of Chromium Suite Results

Test Location	BH04	BH04	BH05	BH06
Sample Depth (m)	3.0-3.5	3.5-4.0	3.0-3.5	3.5-4.0
Material Type	Dark Hued CLAY	Dark Hued CLAY	Lightly Hued SAND	Dark Hued CLAY
Net Acidity (% S) Excluding ANC	0.06	1.5	1.3	2.4
Net Acidity (moles H+/T) Excluding ANC	37	930	790	1500
Liming Rate (kg CaCO ₃ /T) Excluding ANC	2.8	70	59	110
pH KCl	5.4	5.0	4.5	4.4
TAA (% pyrite S)	0.006	0.091	0.12	0.18
Chromium Reducible Sulfur (Scr) (%)	0.053	1.4	1.2	2.3
Chromium Reducible Sulfur (Scr) (moles H+/T)	33	870	720	1400
Acid Neutralisation Capacity (ANCBT) (% CaCO ₃)	N/A	N/A	N/A	N/A
Liming Rate (kg CaCO ₃ /T)	2.8	70	59	110

7.5 Summary of Results

7.5.1 Proposed Excavation Works

As outlined above, the proposed development includes significant cut and fill earthworks to be carried out to allow construction of the proposed basement and building platform, associated landscaping and access construction.

Within the proposed basement areas, the bulk excavation levels appear to be a maximum of around RL 0 m.

This the depth of cut within the building area generally varies between about 3.5 m to 4.0 m. Excavations for the installation of services and for lift wells may extend to greater depths locally. There appears to be minimal bulk excavation works outside the basement and pool areas.

It is estimated that up to about 20,000 t of soil is to be excavated.

It is considered that there will be no alteration to the permanent water table as a result of the proposed works.

7.5.2 Presence of ASS

The results of the field and laboratory testing indicate that the darkly hued marine clays of Zone 2 are Potential Acid Sulfate Soils (PASS) with net acidity above the >0.03 % S action criteria for excavations >1000 t as outlined in Table 4-1 of the Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines.

The results also indicate that some of the upper lightly to darkly hued sands are PASS, however, most of the Zone 1 materials are not PASS, nor Actual Acid Sulfate Soils (AASS). Some of the Chromium Suite test results indicate that the upper sands and fills are slightly PASS, however they are below the action criteria guidelines. These soils contain some natural acid neutralising capacity likely in the form of shell fragments and carbonaceous materials.

Some of the darkly hued marine clays also show evidence of containing acid neutralising capacity materials. This ANC is likely related to the presence of shell grit and fragments within the marine clay. The shell grit and fragments were noted as relatively thin lenses within the boreholes and were noted to occur sporadically throughout the encountered marine clay profile. On this basis, the ANC within these materials should not be considered in terms of the adoption of a suitable management plan such as for lime treatment.

Comments on potentially suitable management options for the treatment of the inferred PASS materials are outlined in the following sections.

7.5.3 PASS/AASS Materials Disturbed by Excavation Works

As outlined in Section 3.2, the subsurface conditions at the site generally comprises three distinct subsurface zones. Zone 1 comprises some filling and lightly hued sands with subordinate moderately to darkly hued materials, overlying Zone 2 materials comprising darkly hued marine clays that extend to depths below the proposed bulk excavation levels. A summary of the approximate top and base levels (RL-m) of the upper sands/fill and marine clay layers are presented in Table 21.

Table 21: Summary of Subsurface Materials Likely to be Disturbed in Bulk Excavation Works

Material	Top (RL -m)	Base (RL -m)
Zone 1	Surface (2.9 to 4.8)	1.4 to -2.7
Zone 2	1.4 to -2.7	-2.8 to -6.4

Based on the above, the basement excavation will extend between about 1.4 m to 2.7 m into the darkly hued marine clay.

Given the above, it is estimated that >1000 t of potential PASS material will be excavated as part of the works. On this basis, an action criteria of 0.03% S has been adopted.

The proposed placement of filling is not expected to result in further disturbance to the local groundwater regime or expunge additional acid generating material or result in exposure of PASS materials that would lead to the generation of associated acidic soils or groundwaters.

Inferred cross sections showing the extents of PASS and excavation levels is presented in Appendix A. The alignment of the inferred cross section is shown in Figure 1 of Appendix A.

7.5.4 Risk Categorisation

Based on the subsurface sections and the extent of proposed excavation works, it is estimated that up to around 2000 t of PASS materials may be disturbed. As such, and in accordance with Table 4-2 of the Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines, the proposed disturbance can be classified as requiring a High (H) to Extra High (XH) level of treatment.

For illustration purposes, a summary of the assessed treatment category for each sample tested as outlined above in Section 7.4 and based on an excavation amount of 10,000 t of each tested material is presented in Tables 22 to 24 below.

As outlined above, the ANC of the material has not been included as it is considered to be sporadic and non-uniform through the marine clay profile.

Table 22: Risk category for Treatment of Darkly Hued Clays Based on 10,000 T of Excavation.

Test Location	BH01	BH02	BH02	BH02	BH03
Sample Depth (m)	3.5-4.0	2.0-2.5	2.5-3.0	3.0-3.5	3.5-4.0
Net Acidity (% S) Excluding ANC	0.53	0.74	0.98	0.14	1.8
Liming Rate (kg CaCO ₃ /T) Excluding ANC	25	35	46	6.8	85
Treatment Category	XH EXTRA HIGH	XH EXTRA HIGH	XH EXTRA HIGH	XH EXTRA HIGH	XH EXTRA HIGH

Table 23: Risk category for Treatment of Darkly Hued Clays Based on 10,000 T of Excavation.

Test Location	BH04	BH04	BH04	BH04
Sample Depth (m)	1.0-1.5	1.5-2.0	2.0-2.5	2.5-3.0
Net Acidity (% S) Excluding ANC	0.03	1.4	0.09	1.6
Liming Rate (kg CaCO ₃ /T) Excluding ANC	1.3	67	4.2	74
Treatment Category	H HIGH	XH EXTRA HIGH	VH VERY HIGH	XH EXTRA HIGH

Table 24: Risk category for Treatment of Darkly Hued Clays Based on 10,000 T of Excavation.

Test Location	BH04	BH04	BH05	BH06
Sample Depth (m)	3.0-3.5	3.5-4.0	3.0-3.5	3.5-4.0
Net Acidity (% S) Excluding ANC	0.06	1.5	1.3	2.4
Liming Rate (kg CaCO ₃ /T) Excluding ANC	2.8	70	59	110
Treatment Category	VH VERY HIGH	XH EXTRA HIGH	XH EXTRA HIGH	XH EXTRA HIGH

Actual treatment of the PASS will be in accordance with the developed management plan and based on site testing as excavation works are carried out.

7.6 ASS Treatment

7.6.1 PASS/AASS

In accordance with the Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines, for the disturbance of ASS materials that require up to Extra High level of treatment, a comprehensive environmental management plan must be created. The detailed management plan must include the following as a minimum:

- Plans for ongoing management and monitoring of the disturbance of ASS throughout the construction works.
- All management procedures for various construction stages.
- Details of treatment options and how containment and treatment would be carried out.
- Details of testing and compliance of excavated and treated materials during works.
- Details of surface and groundwater controls and management strategies.

In addition to the above, a detailed closure report would be required following completion of works and include the following:

- Total volumes and dimensions of disturbed ASS materials.
- Extent and duration of dewatering and how extracted water was treated and disposed of.
- Details of soil management strategies adopted at the site during the works including location maps and details.
- Location and details of an offsite management site and the works carried out.
- All compliance soil test results of untreated and treated of disturbed ASS materials.

- Details of surface and groundwater monitoring including groundwater wells, chemical testing and groundwater levels.
- Proposed future monitoring and reporting of the site and any offsite treatment areas.

GEO are able to assist in the development and onsite management of the required environmental management plan.

Treatment options that may be considered as part of the environmental management plan include neutralisation onsite or at an offsite facility and/or burial under permanent water (surface or groundwater). An option that may be considered, if sufficient volume is available would be to over excavate the upper non-ASS lightly hued sands and replace with a portion of the excavated PASS marine clay below the groundwater level.

The proposed placement of filling is not expected to result in further disturbance to the local groundwater regime or expunge additional acid generating material.

It is considered that the proposed works will not impact the permanent water table which may lead to further exposure of the PASS materials.

7.6.2 Groundwater

A groundwater sample was collected from BH02. Laboratory analyses was carried out on the samples. The results are summarised below in Table 25 and are presented in Appendix C.

Table 25: Summary of Groundwater Testing Results

Test Location	BH02
Material	Water
pH	7.7
Conductivity @ 25 C	700
Sulphate (as S) (mg/L)	7.3

It is envisaged that dewatering will be required to allow construction of the proposed basement and to allow other excavations below the groundwater level. At the time of fieldwork, the groundwater levels within the boreholes generally varied between about RL 2 m to RL 3 m. However, the long term data loggers indicated groundwater levels of between about RL 0 m to RL 1.1.

It is considered that an upper groundwater level of around RL 1.8 – 2.0 m should be adopted for all design and construction planning.

The fluctuation in groundwater levels is based on tidal and rainfall events, local subsurface conditions and influence or surrounding disturbances. Groundwater levels observed during the fieldwork were likely influenced by drilling operations at the time.

For the purposes of ASS treatment, it is considered that the proposed basement will be supported through the installation of temporary sheet piling or similar. The sheet piling will likely extend from the existing surface or a prepared building surface to below the base of the marine clay layer.

Based on the above, it is considered that dewatering of the upper sands could be carried out without affecting the groundwater levels (saturation) of the marine clay at depth, thus preventing further oxidation of the marine clay outside the proposed excavation limits and limiting the potential generation of acid.

As such, dewatering of the upper sands outside of the sheet pile wall or similar structure could be carried out through the installation of shallow dewatering spears. Groundwater infiltration through the exposed marine clay at the base of the excavation could be carried out by in-pit sump pumping to maintain water levels within the basement excavation below the working platform level. This should maintain the saturation of the marine clay at the base of the basement excavation and limit acid generation.

All removed groundwater should be collected and tested for acidity prior to release to an approved receptor. This would form part of the approved environmental management plan.

8.0 Limitations

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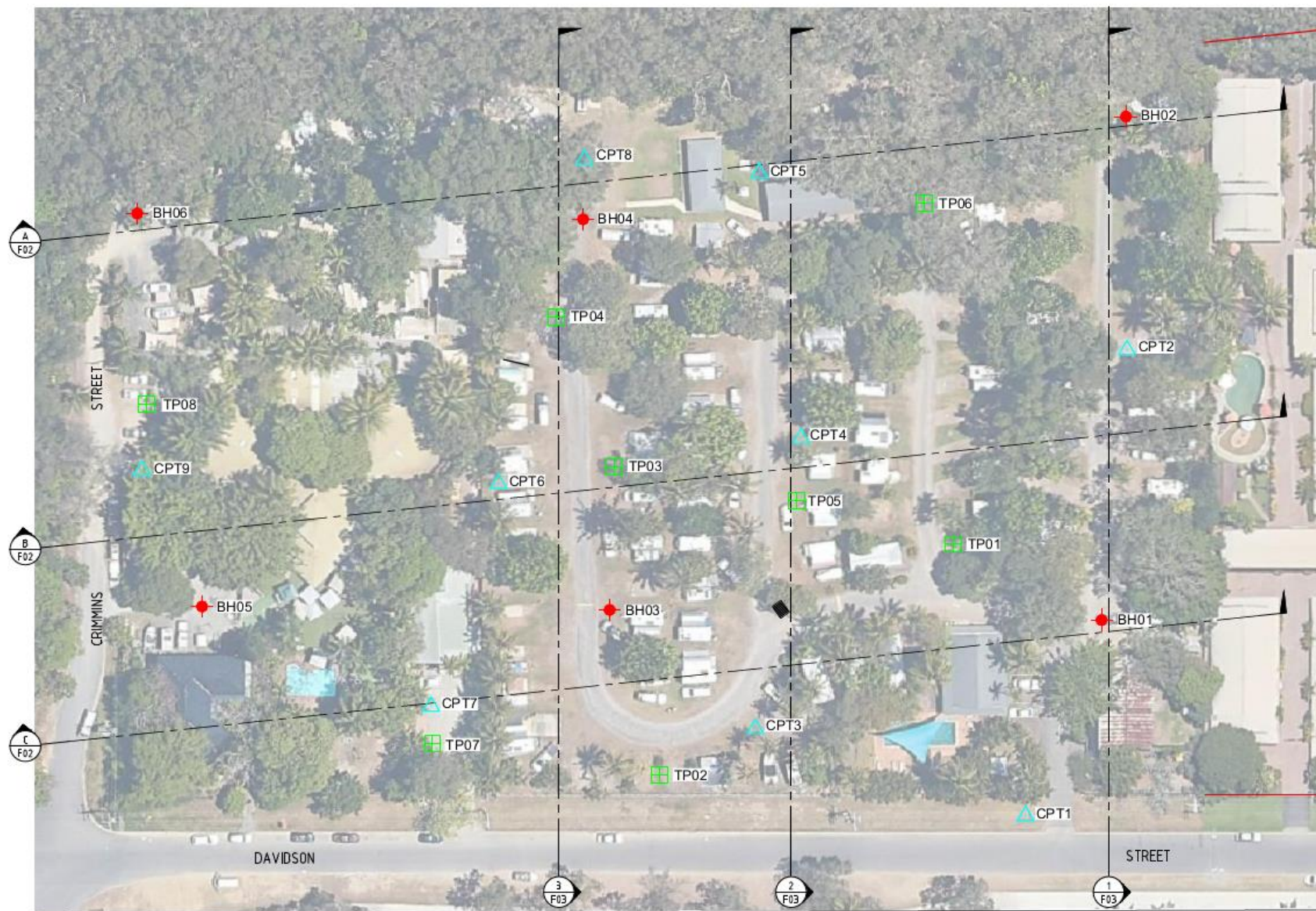
Regards,

A handwritten signature in black ink, appearing to read 'S Ford', written in a cursive style.

Steve Ford
Principal Geotechnical Engineer
BSc (Geo) BSc Hons (Geo) MEngSc (Geotechnical) MMinEng (Geomechanics)
RPEQ 25762

Appendix A

Site Plan and Inferred Cross Sections



- LEGEND**
- APPROXIMATE LOCATION BOREHOLE
 - ▲ APPROXIMATE LOCATION CPT
 - APPROXIMATE LOCATION TEST PIT

GEO | design

Client: GURNER

Drawn: SRF

Scale: NTS

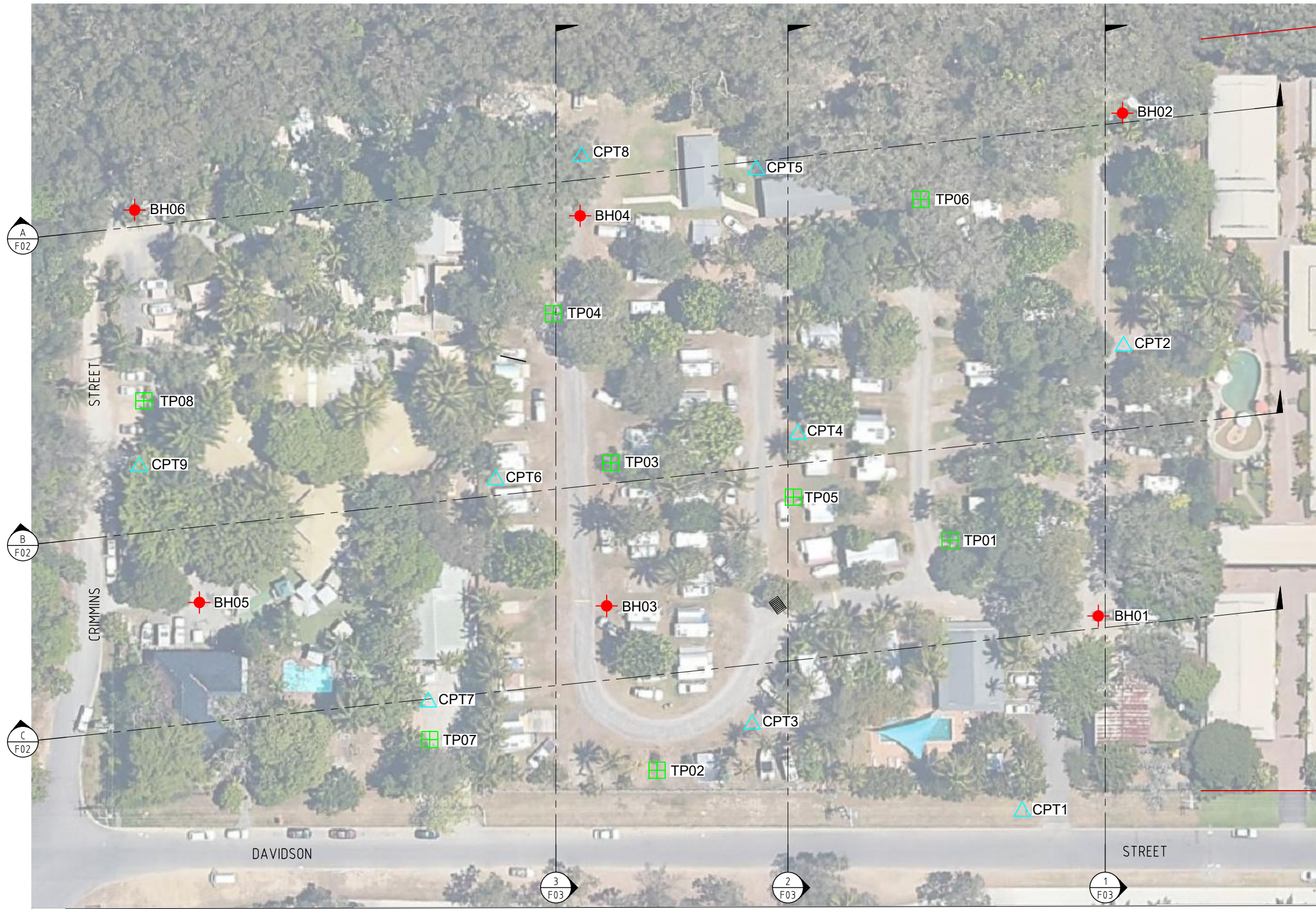
Project No: 23003AA-D-FIGURE 1-V2

GEOTECHNICAL INVESTIGATION

97-113 DAVIDSON STREET, PORT DOUGLAS

**FIGURE 1
SITE PLAN**

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- LEGEND
- APPROXIMATE LOCATION BOREHOLE
 - APPROXIMATE LOCATION CPT
 - APPROXIMATE LOCATION TEST PIT

PLAN:
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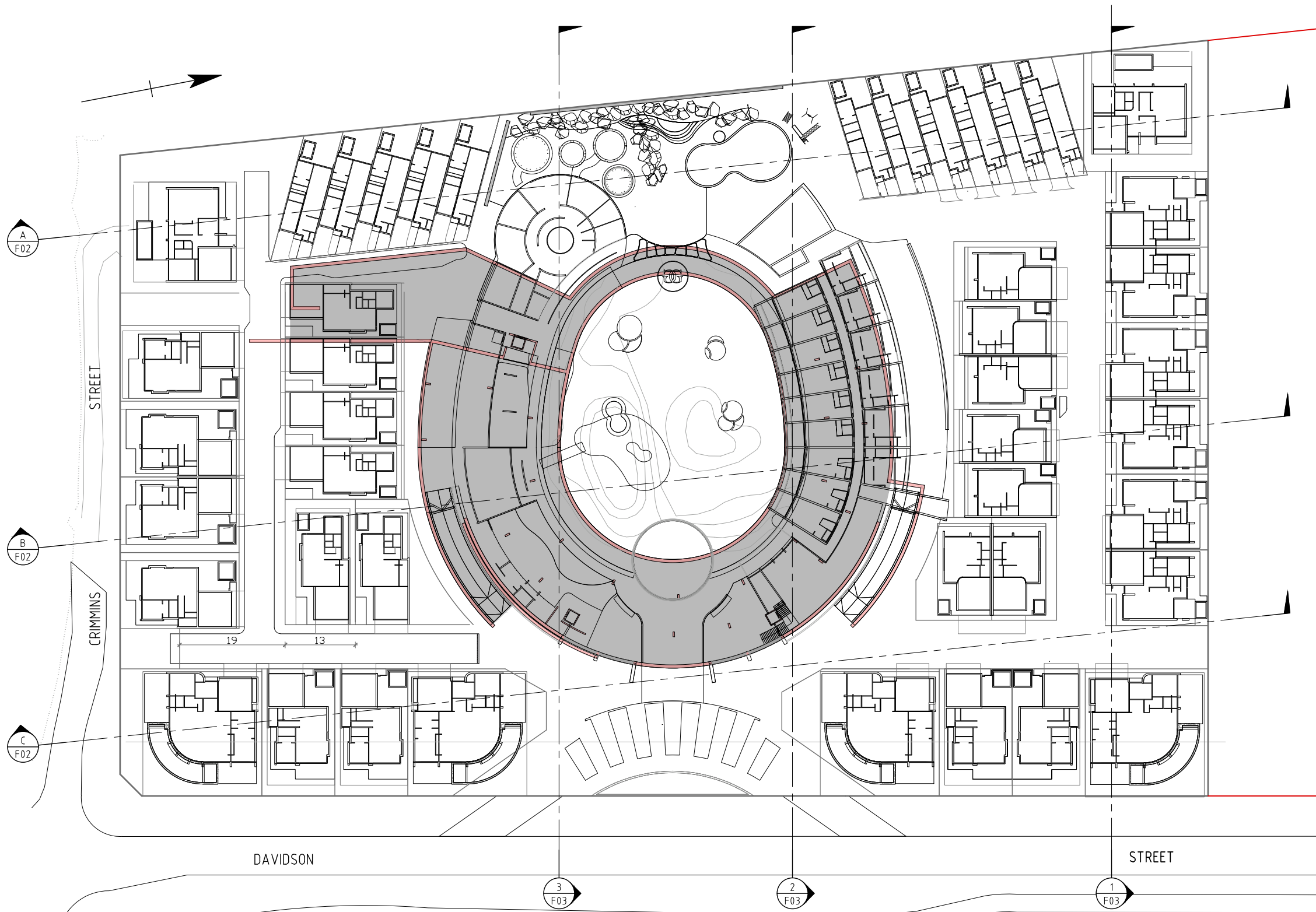
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A	INITIAL ISSUE		05/05/23

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DRAWN KCDD		DATE 05/05/23		TITLE SITE PLAN					
CHECKED SRF		DATE 05/05/23							
SCALE 1:750 (A3)				PROJECT No 23003AA-D		FIGURE No FIG 1		REV A	A3

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PLAN:
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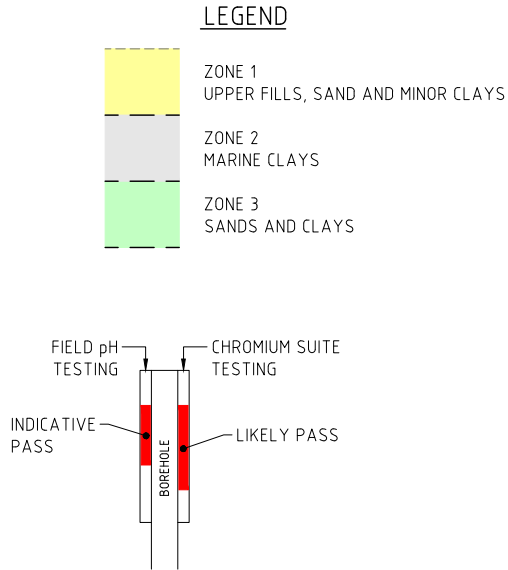
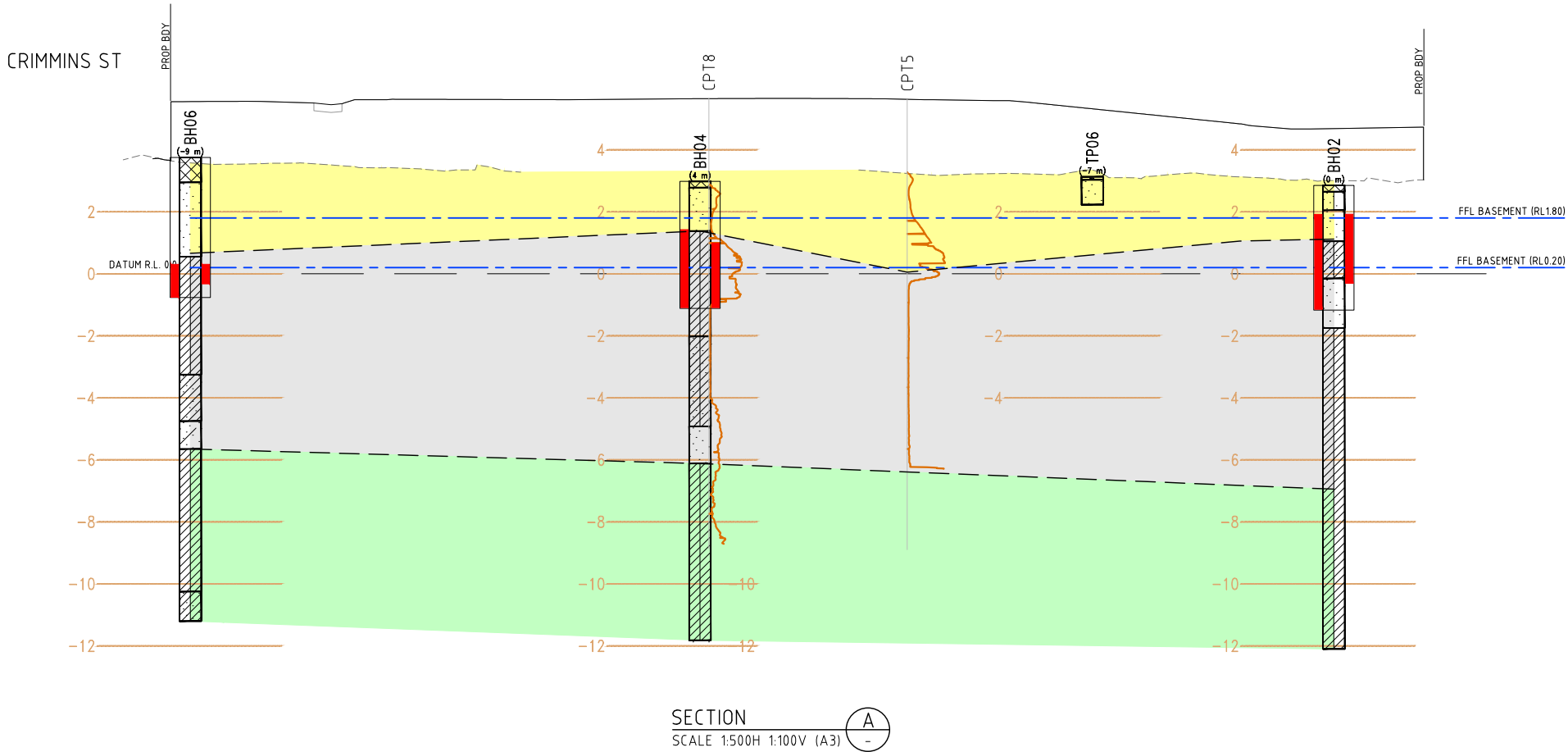
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SCALE	1:750 (A3)		

PROJECT		DEVELOPMENT AT 97-113 DAVIDSON STREET PORT DOUGLAS	
TITLE		DEVELOPMENT LAYOUT PLAN	
PROJECT No	23003AA-D	FIGURE No	FIG 2
REV	A	A3	

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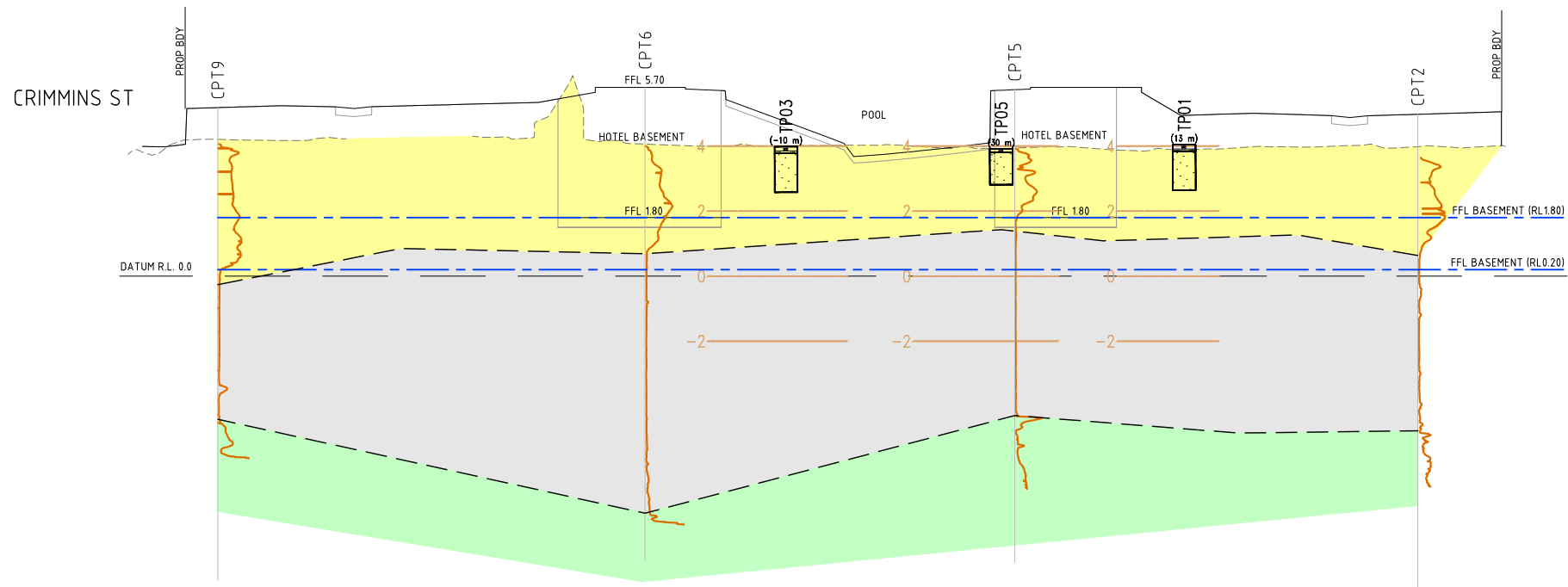
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DRAWN	KCDD	DATE	05/05/23	TITLE	INTERPRETATIVE CROSS SECTION A
CHECKED	SRF	DATE	05/05/23	PROJECT No	23003AA-D
SCALE	1:750 (A3)		FIGURE No	FIG 3A	REV A A3

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LEGEND

- ZONE 1
UPPER FILLS, SAND AND MINOR CLAYS
- ZONE 2
MARINE CLAYS
- ZONE 3
SANDS AND CLAYS

SECTION
SCALE 1:500H 1:100V (A3)

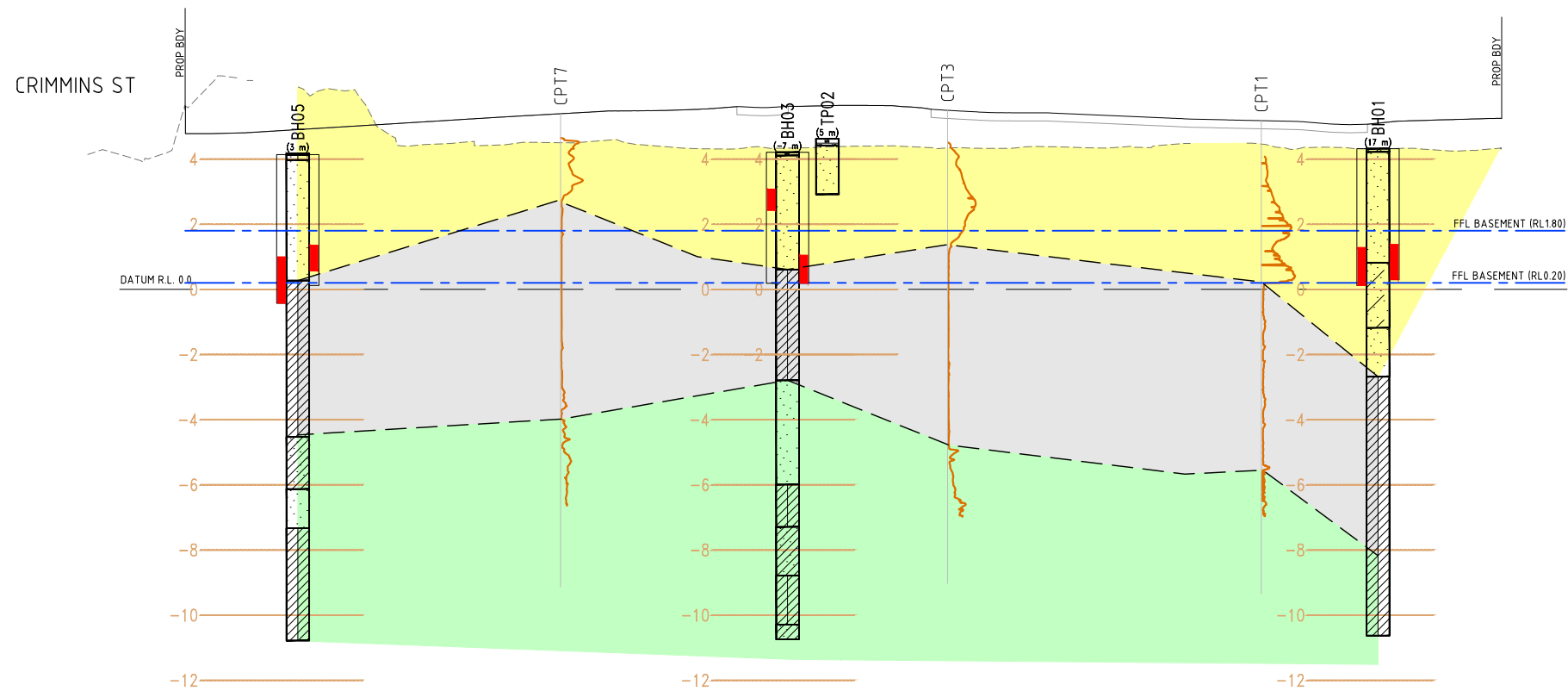
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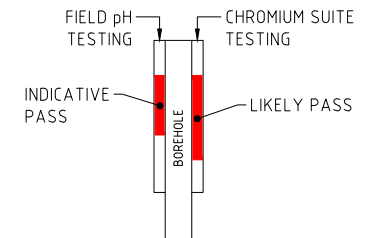
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DRAWN KCDD	DATE 05/05/23	TITLE INTERPRETATIVE CROSS SECTION B	
CHECKED SRF	DATE 05/05/23		
SCALE 1:750 (A3)		PROJECT No 23003AA-D	FIGURE No FIG 3B
		REV A	A3

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LEGEND

- ZONE 1
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- ZONE 2
MARINE CLAYS
- ZONE 3
SANDS AND CLAYS



SECTION
SCALE 1:500H 1:100V (A3)

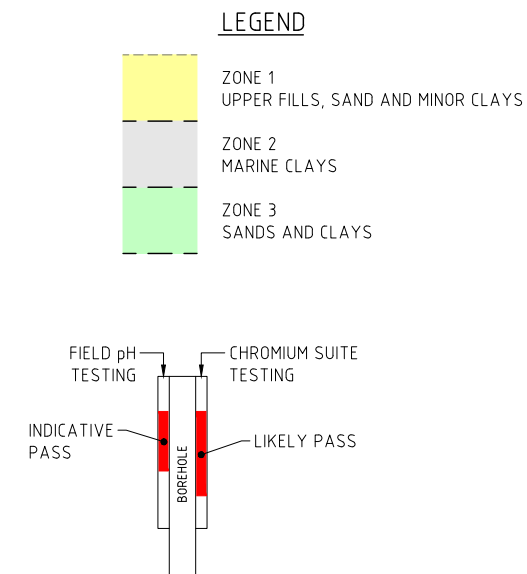
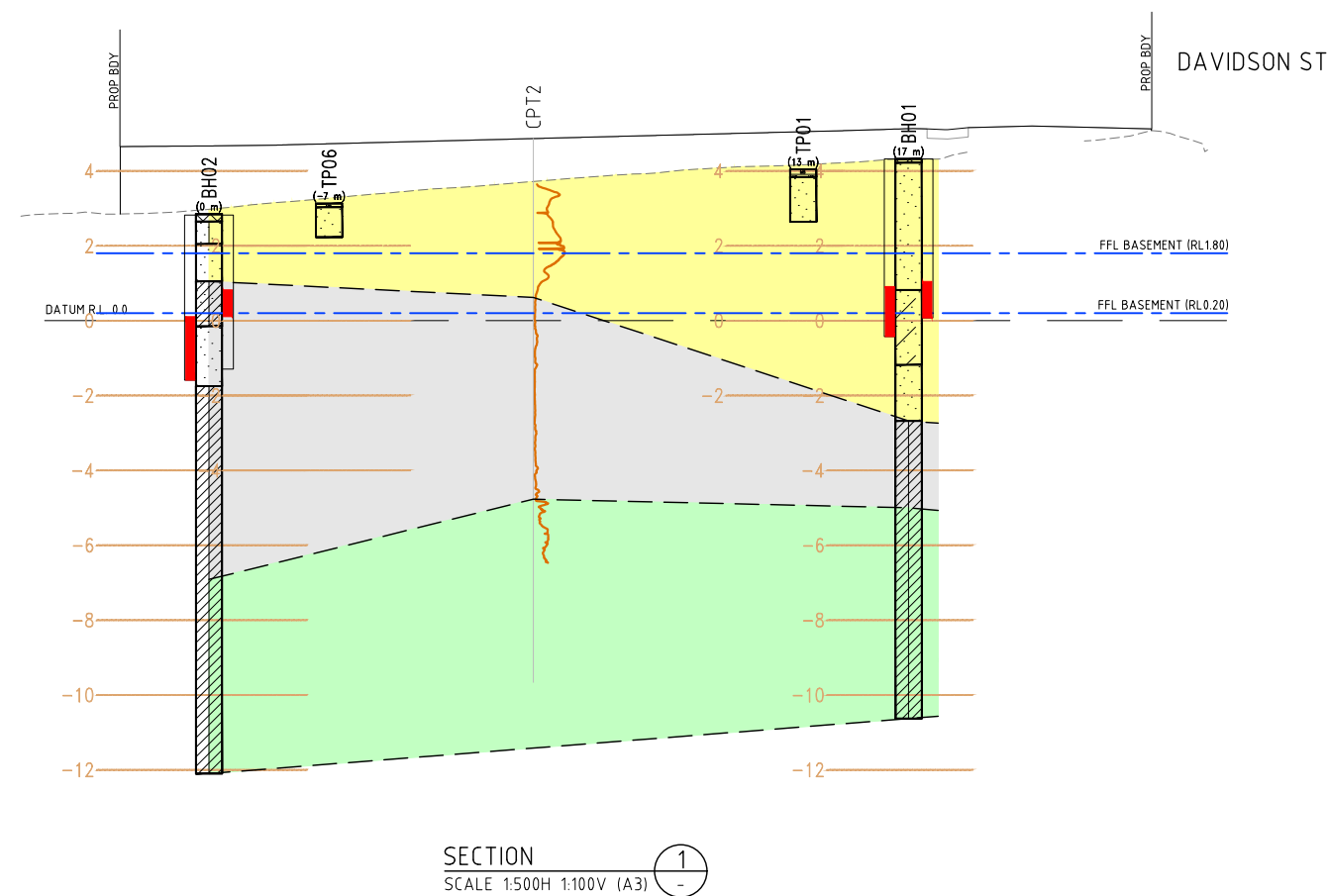
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A	INITIAL ISSUE		05/05/23

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DRAWN	KCDD	DATE	05/05/23	TITLE INTERPRETATIVE CROSS SECTION C		
CHECKED	SRF	DATE	05/05/23			
SCALE 1:750 (A3)			PROJECT No 23003AA-D		FIGURE No FIG 3C	REV A A3

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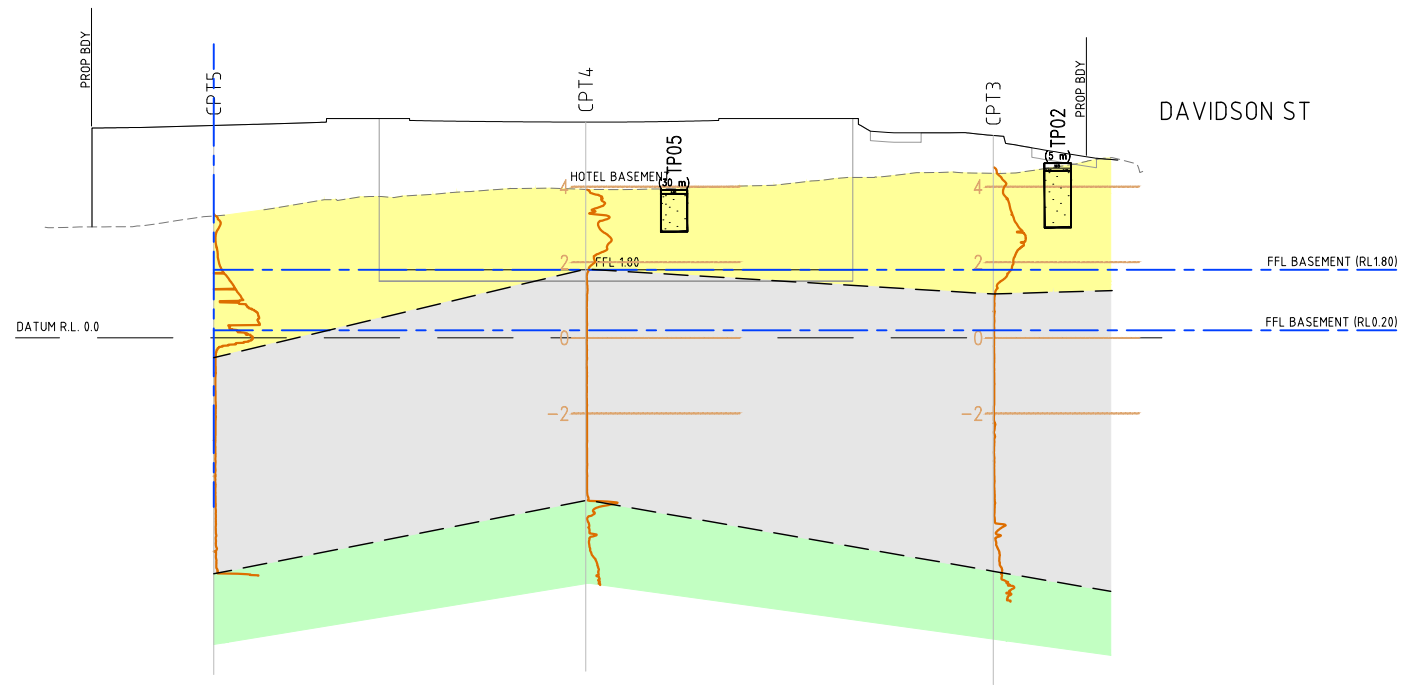
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DRAWN	KCDD	DATE	05/05/23	TITLE INTERPRETATIVE CROSS SECTION 1		
CHECKED	SRF	DATE	05/05/23			
SCALE 1:750 (A3)			PROJECT No 23003AA-D	FIGURE No FIG 4A	REV A	A3

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LEGEND

ZONE 1
UPPER FILLS, SAND AND MINOR CLAYS

ZONE 2
MARINE CLAYS

ZONE 3
SANDS AND CLAYS

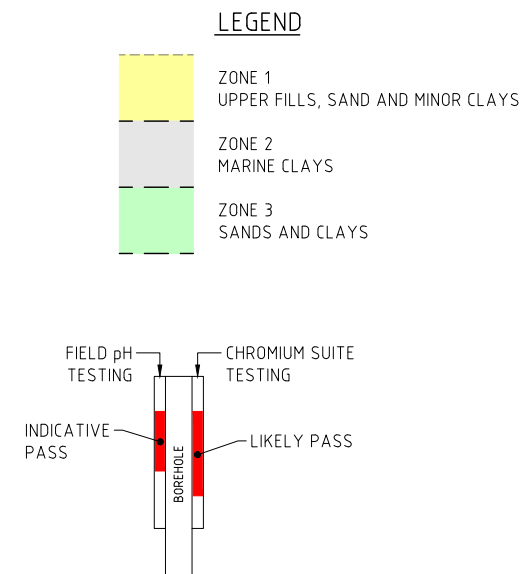
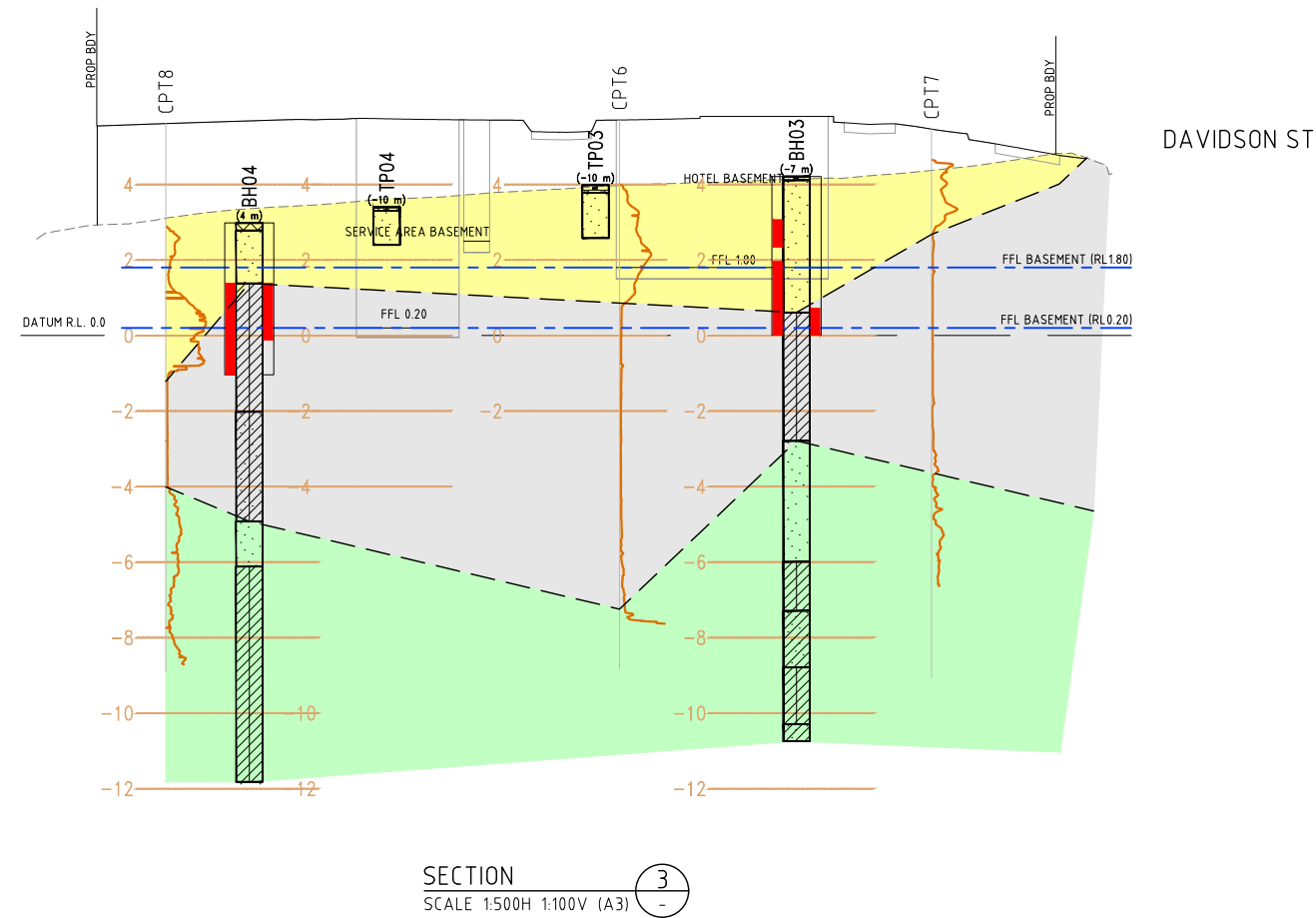
SECTION 2
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	SCALE 1:750 (A3)		PROJECT No 23003AA-D		FIGURE No FIG 4B	REV A A3

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DRAWN	KCDD	DATE	05/05/23	TITLE INTERPRETATIVE CROSS SECTION 3						
CHECKED	SRF	DATE	05/05/23							
SCALE		1:750 (A3)		PROJECT No	23003AA-D	FIGURE No	FIG 4C	REV	A	A3

Appendix B

Results of Fieldwork

Project Geotechnical Investigation East 335980.0 m
Site 97 - 111 Davidson Street North 8175732.0 m MGA2020 56
Location Port Douglas Surface RL 4.32 m AHD
Position Refer to Site Plan Contractor GEO Investigate
Job No. 23003AA-D Drill Rig DT1200
Client GURNER Inclination -90°

Sheet 1 OF 1

Date Started 30/1/23

Date Completed 30/1/23

Logged DLH

Drilling					Sampling		Field Material Description								
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS			
ADT			0		DS 0.00-0.25 m				FILL GRAVELLY CLAYEY SAND: grey, fine to coarse grained sand, low plasticity clay, fine to coarse gravel	M	MD to L				
			4.22	DS 0.25-0.50 m	SP				SAND: grey-brown, fine to medium grained sand, non plasticity						
			0.70	DS 0.50-0.75 m											
			3.62	DS 0.75-1.00 m	SP				SAND: yellow-brown, fine to medium grained sand, non plasticity						
				SPT 1.00-1.45 m 3, 3, 3 N*=6											
			1.80	DS 1.50-1.75 m											
			2.52	DS 1.75-2.00 m	SP				SAND: pale grey, fine to medium grained sand, non plasticity						
				DS 2.00-2.25 m											
				DS 2.25-2.50 m											
				SPT 2.50-2.95 m 2, 4, 9 N*=13											
				SPT 3.00-3.45 m 2, 3, 5 N*=8											
			3.50	SPT 3.50-3.95 m HW/450mm	SC				CLAYEY SAND: dark grey, fine to medium grained sand, non plasticity, low plasticity clay, trace fine to coarse gravel, trace shell grit						
			0.82	SPT 4.00-4.45 m 0, 0, 2 N*=2											
				5.50	SPT 5.50-5.95 m 7, 14, 21 N*=35				SP				SAND: grey, fine to medium grained sand, non plasticity		D to MD
				-1.18											
WB					SPT 7.00-7.45 m HW/450mm				SILTY CLAY: dark grey, medium plasticity, with fine to coarse grained sand, trace organics, "MARINE CLAY"	W	S to F				
			-2.68		CI										
L-M									SILTY CLAY: pale grey mottled orange-brown, medium plasticity, trace fine grained sand	VSt to H					
					CI										
									SILTY CLAY: pale grey, low plasticity, trace fine to coarse grained sand, trace fine to medium gravel	VSt					
					CL										

Project Geotechnical Investigation East 335881.0 m
Site 97 - 111 Davidson Street North 8175754.0 m MGA2020 56
Location Port Douglas Surface RL 2.85 m AHD
Position Refer to Site Plan Contractor GEO Investigate
Job No. 23003AA-D Drill Rig DT1200
Client GURNER Inclination -90°

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT			0	0.20	DS 0.00-0.25 m			CL	FILL SANDY CLAY: red-brown, low plasticity, fine to coarse grained sand, trace fine coarse gravel	M	F	
			2.65	DS 0.25-0.50 m			SM	SILTY SAND: dark grey, fine to medium grained sand, low plasticity silt	L			
			0.80	SPT 0.50-0.95 m			SP	SAND: grey-brown, fine to medium grained sand, non plastic				
			2.05	N*=7								
			1.80	SPT 1.00-1.45 m			CI	SANDY SILTY CLAY: dark grey, medium plasticity, fine to coarse grained sand, trace shell grit, trace organics, "MARINE CLAY"	S to F			
			1.05	N*=2								
			2	SPT 1.50-1.95 m			CI	SANDY SILTY CLAY: dark grey, medium plasticity, fine to coarse grained sand, trace shell grit, trace organics, "MARINE CLAY"	S to F			
			1.05	HW/450mm								
			3.00	SPT 2.00-2.45 m			SP	SAND: pale grey, fine grained sand, non plastic	VL to L			
			-0.15	HW/450mm								
			4	SPT 2.50-2.95 m			CI	SILTY CLAY: dark grey, medium plasticity, with fine grained sand, trace shell grit, trace organics, "MARINE CLAY"	S to F			
			-1.75	HW/450mm								
			4.60	SPT 3.00-3.45 m			CI	SILTY CLAY: dark grey, medium plasticity, with fine grained sand, trace shell grit, trace organics, "MARINE CLAY"	S to F			
			-1.75	HW/450mm								
			6	SPT 3.50-3.95 m			CI	SILTY CLAY: dark grey, medium plasticity, with fine grained sand, trace shell grit, trace organics, "MARINE CLAY"	S to F			
				N*=2								
7.00	SPT 4.00-4.45 m		CI	SILTY CLAY: dark grey, medium plasticity, with fine grained sand, trace shell grit, trace organics, "MARINE CLAY"	S to F							
-4.15	N*=4											
8	SPT 5.50-5.95 m		CI	SILTY CLAY: dark grey, medium plasticity, with fine grained sand, trace shell grit, trace organics, "MARINE CLAY"	S to F							
	HW/450mm											
9.20	U 7.00-7.45 m		CI	SILTY CLAY: pale grey, medium plasticity, with fine grained sand	VSt							
-6.35												
11.50	PP 7.45 m =50 - 70 kPa		CI	SILTY CLAY: pale grey mottled orange-brown, medium plasticity, with fine grained sand	St							
-8.65												
13.00	SPT 8.50-8.95 m		CI	SILTY CLAY: pale grey mottled orange-brown, medium plasticity, with fine grained sand	VSt							
-10.15	N*=6											
14.95	SPT 10.00-10.45 m		CI	SILTY CLAY: pale grey mottled orange-brown, medium plasticity, with fine grained sand	VSt							
	N*=17											
	SPT 11.50-11.95 m		CI	SILTY CLAY: pale grey, medium plasticity, trace fine grained sand	VSt							
	N*=13											
	SPT 13.00-13.45 m		CH	SILTY CLAY: pale grey mottled orange-brown, high plasticity, trace fine grained sand	VSt							
	N*=24											
	SPT 14.50-14.95 m		CH	SILTY CLAY: pale grey mottled orange-brown, high plasticity, trace fine grained sand	VSt							
	N*=21											

Comments

Checked SRF
Date 1/3/23

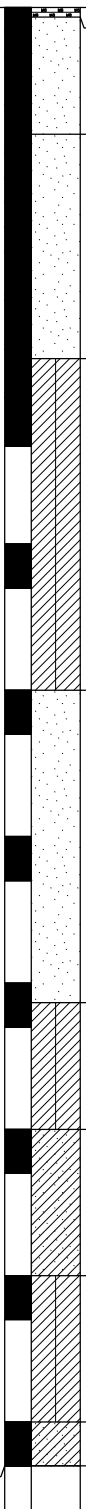
Project Geotechnical Investigation East 335961.0 m
Site 97 - 111 Davidson Street North 8175637.0 m MGA2020 56
Location Port Douglas Surface RL 4.21 m AHD
Position Refer to Site Plan Contractor GEO Investigate
Job No. 23003AA-D Drill Rig DT1200
Client GURNER Inclination -90°

Sheet 1 OF 1

Date Started 31/1/23

Date Completed 31/1/23

Logged DLH

Drilling				Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	▽		0		DS 0.00-0.25 m		SM SP	TOPSOIL SILTY SAND: black, fine to medium grained sand, low plasticity silt	M			
			4.11	DS 0.25-0.50 m			SAND: yellow-brown, fine to medium grained sand, non plastic					
			1.30	SPT 1.00-1.45 m	SP		SAND: grey-brown, fine to medium grained sand, non plastic					
			2.91	2, 3, 5								
				DS 1.50-1.75 m								
				DS 1.75-2.00 m								
				DS 2.00-2.25 m								
					DS 2.25-2.50 m							
				SPT 2.50-2.95 m								
				1, 2, 3								
				N*=5								
				SPT 3.00-3.45 m								
				HW/450mm								
			3.60	SPT 3.50-3.95 m	CI		SILTY CLAY: dark grey, medium plasticity, with fine to medium grained sand, trace shell grit, trace organics, "MARINE CLAY"					
			0.61	HW/450mm								
				SPT 4.00-4.45 m								
	HW/450mm											
	SPT 5.50-5.95 m											
	0, 0, 2											
	N*=2											
7.00	SPT 7.00-7.45 m	SP	SAND: pale grey, fine to medium grained sand, non plastic, trace fine to medium gravel									
-2.79	3, 5, 4											
	N*=9											
	SPT 8.50-8.95 m											
	4, 5, 14											
	N*=19											
10.20	SPT 10.00-10.45 m	CI	SILTY CLAY: pale grey, medium plasticity, with fine grained sand									
-5.99	14, 9, 12											
	N*=21											
11.50	SPT 11.50-11.95 m	CL	SANDY CLAY: pale grey, low plasticity, fine to medium grained sand									
-7.29	2, 4, 8											
	N*=12											
13.00	SPT 13.00-13.45 m	CI	SILTY CLAY: pale grey mottled orange-brown, medium plasticity, with fine grained sand									
-8.79	4, 4, 9											
	N*=13											
14.50	SPT 14.50-14.95 m	CL	SANDY CLAY: pale grey, low plasticity, fine to medium grained sand, trace fine to medium gravel									
-10.29	5, 8, 14											
	N*=22											
14.95	BOREHOLE TERMINATED AT 14.95 m Target depth											

Comments

Checked SRF
Date 1/3/23

Project Geotechnical Investigation East 335867.0 m
Site 97 - 111 Davidson Street North 8175652.0 m MGA2020 56
Location Port Douglas Surface RL 2.98 m AHD
Position Refer to Site Plan Contractor GEO Investigate
Job No. 23003AA-D Drill Rig DT1200
Client GURNER Inclination -90°

Sheet 1 OF 1

Date Started 3/2/23

Date Completed 3/2/23

Logged DLH

Drilling				Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT			0	0.20	DS 0.00-0.25 m		CL	FILL SANDY CLAY: red-brown, low plasticity, fine to coarse grained sand	M	F	
			2.78	2.78	DS 0.25-0.50 m		SP	SAND: pale grey, fine to medium grained sand, non plastic			
			0.90	0.90	DS 0.50-0.75 m		SP	SAND: grey-brown, fine to medium grained sand, non plastic		L	
			2.08	2.08	SPT 1.00-1.45 m 2, 1, 2 N*=3						
			1.60	1.60	DS 1.50-1.75 m		CI	SILTY CLAY: dark grey, medium plasticity, with fine to coarse grained sand, with organics, Intermittent SP SAND fine to medium grained, "MARINE CLAY"			
			1.38	1.38	DS 1.75-2.00 m						
			2		DS 2.00-2.25 m						
					DS 2.25-2.50 m						
					SPT 2.50-2.95 m HW/450mm						
					SPT 3.00-3.45 m HW/450mm						
					SPT 3.50-3.95 m HW/450mm						
					SPT 4.00-4.45 m HW/450mm						
			5.00	5.00			CI	SANDY SILTY CLAY: pale grey, medium plasticity, fine to coarse grained sand	S to F		
			-2.02	-2.02	U50 5.50-5.95 m						
			6		PP 5.95 m =50 - 70 kPa						
					SPT 7.00-7.45 m HW/450mm						
			7.90	7.90			SP	SAND: pale grey, fine to medium grained sand, non plastic	W		
			-4.92	-4.92							
					SPT 8.50-8.95 m 1, 2, 2 N*=4					L	
			9.10	9.10			CI	CLAY: pale grey mottled orange-brown, fine, medium plasticity, with fine grained sand			
			-6.12	-6.12							
			10		SPT 10.00-10.45 m 2, 4, 6 N*=10					St	
					SPT 11.50-11.95 m 1, 2, 5 N*=7						
			12							F	
					SPT 13.00-13.45 m 3, 5, 7 N*=12						
			14							St to VSt	
			14.50	14.50	SPT 14.50-14.95 m 5, 8, 12 N*=20		CI	CLAY: pale grey, medium plasticity, with fine grained sand			
							SP	SAND: pale grey mottled orange-brown, fine grained sand, non plastic			
								BOREHOLE TERMINATED AT 14.95 m Target depth			

Comments

Checked SRF
Date 1/3/23

Project Geotechnical Investigation East 335641.0 m
Site 97 - 111 Davidson Street North 8175562.0 m MGA2020 56
Location Port Douglas Surface RL 4.17 m AHD
Position Refer to Site Plan Contractor GEO Investigate
Job No. 23003AA-D Drill Rig DT1200
Client GURNER Inclination -90°

Sheet 1 OF 1

Date Started 3/2/23

Date Completed 3/2/23

Logged DLH

Drilling				Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	▽		0		DS 0.00-0.25 m		GP	FILL SANDY GRAVEL: grey, fine to coarse gravel, fine to coarse grained sand	M	L to MD		
			3.97	DS 0.25-0.50 m	SM		SILTY SAND: black, fine to medium grained sand, low plasticity silt, trace organics					
				DS 0.50-0.75 m	SP		SAND: yellow-brown, fine to medium grained sand, non plastic					
				DS 0.75-1.00 m								
				SPT 1.00-1.45 m								
				3, 5, 5								
				N*=10								
			1.50	DS 1.50-1.75 m	SP		SAND: pale grey, fine to medium grained sand, non plastic					
			2.67	DS 1.75-2.00 m								
				DS 2.00-2.25 m								
				DS 2.25-2.50 m								
				SPT 2.50-2.95 m								
				3, 7, 11								
				N*=18								
				SPT 3.00-3.45 m								
WB	L-M				HW/450mm			W	VL to L			
			3.90	SPT 3.50-3.95 m								
				HW/450mm								
			0.27	SPT 4.00-4.45 m	CH	SILTY CLAY: dark grey, high plasticity, with organics, trace shell grit, "MARINE CLAY"						
				HW/450mm								
				U50 5.50-5.85 m								
				PP 5.95 m =50 - 70 kPa								
				SPT 7.00-7.45 m								
				HW/450mm								
				PP 7.45 m =25 - 50 kPa								
				U50 8.50-8.95 m								
			8.70		CL	SANDY CLAY: pale grey, low plasticity, fine to medium grained sand						
				SPT 10.00-10.45 m								
				6, 7, 6	SP	SAND: pale grey, fine grained sand, non plastic						
				N*=13								
								MD	F			
			11.50	SPT 11.50-11.95 m	CI	CLAY: pale grey mottled orange-brown, medium plasticity, with fine grained sand, intermittent SP SAND fine grained						
				0, 2, 4								
				N*=6								
				SPT 13.00-13.45 m								
					6, 10, 14			VSt				
					N*=24							
					SPT 14.50-14.95 m							
					6, 6, 9							
					N*=15							
			14.95					BOREHOLE TERMINATED AT 14.95 m Target depth				

Comments

Checked SRF
Date 1/3/23

Project Geotechnical Investigation East 335864.0 m
Site 97 - 111 Davidson Street North 8175566.0 m MGA2020 56
Location Port Douglas Surface RL 3.75 m AHD
Position Refer to Site Plan Contractor GEO Investigate
Job No. 23003AA-D Drill Rig DT1200
Client GURNER Inclination -90°

Sheet 1 OF 1

Date Started 6/2/23

Date Completed 6/2/23

Logged DLH

Drilling				Sampling		Field Material Description							
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION		MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADT	▽		0	3.75	DS 0.00-0.25 m		SM	FILL GRAVELLY SILTY SAND: brown, fine to coarse grained sand, low plasticity silt, fine to coarse gravel		M	MD		
			0.80	2.95	DS 0.25-0.50 m								
			0.80	2.95	DS 0.50-0.75 m								
			1.30	2.45	DS 0.75-1.00 m		SP	SAND: brown, fine to medium grained sand, non plastic					
			1.30	2.45	SPT 1.00-1.45 m 1, 2, 1 N=3		SP	SAND: pale grey, fine to medium grained sand, non plastic					
			2		DS 1.50-1.75 m					VL to L			
					DS 1.75-2.00 m								
					DS 2.00-2.25 m								
					DS 2.25-2.50 m								
					SPT 2.50-2.95 m HW/450mm								
				3.20	SPT 3.00-3.45 m HW/450mm		CI	SILTY CLAY: dark grey, medium plasticity, with fine grained sand, trace organics, "MARINE CLAY"					
				0.55	SPT 3.50-3.95 m HW/450mm								
					SPT 4.00-4.45 m HW/450mm								
					U50 5.50-5.95 m					S to F			
			WB	L-M				7.00	U50 7.00-7.35 m		CL		SANDY CLAY: pale grey, low plasticity, fine to medium grained sand
	-3.25	PP 7.35 m =50 - 50 kPa											
	8.50	SPT 8.50-8.95 m 6, 8, 4 N*=12				SC	CLAYEY SAND: pale brown, fine to coarse grained sand, low plasticity clay, trace fine gravel				St		
	9.40	SPT 9.40-9.75 m											
	-5.65	SPT 10.00-10.45 m 3, 4, 4 N*=8				CI	SILTY CLAY: pale grey, medium plasticity, with fine grained sand				F		
		SPT 11.50-11.95 m 5, 6, 9 N*=15				CH	SILTY CLAY: grey mottled orange-brown, high plasticity, trace fine grained sand				VSt		
		SPT 13.00-13.45 m 4, 10, 12 N*=22											
	14.00	SPT 14.50-14.95 m 9, 8, 7 N*=15				CL	SANDY CLAY: pale grey, low plasticity, fine to coarse grained sand, trace fine to medium gravel				VSt		
	-10.25												
	14.95												
							BOREHOLE TERMINATED AT 14.95 m Target depth						

Comments

Checked SRF
Date 1/3/23





Project Geotechnical Investigation East 335959.0 m
 Site 97 - 111 Davidson Street North 8175704.0 m MGA2020 56
 Location Port Douglas Surface RL 4.04 m AHD
 Position Refer to Site Plan Contractor GEO Design
 Job No. 23003AA-D Machine 4-6t Excavator
 Client GURNER Bucket Size

TEST PIT: TP01

Sheet 1 OF 1

Date 1/2/23

Logged DLH

Excavation				Sampling		Field Material Description												
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	DCP TEST (AS 1289.6.3.2-1997) Blows per 100 mm					
												0	5	10	15	20	25	
EX	L	▽	0.0	4.04	DS 0.20-0.60 m			SM	TOPSOIL SILTY SAND: black, fine to medium grained sand, low plasticity silt, trace organics	M	L to MD							
			0.20					SP	SAND: pale grey, fine to medium grained sand, non plastic, trace organics									
			0.60					SP	SAND: pale grey mottled yellow, fine to medium grained sand, non plastic									
								1.40		DS 1.10-1.40 m				W				
			1.5						TEST TERMINATED AT 1.40 m Collapse									
			2.0															
			2.5															

Sketch & Other Observations



Comments

Checked

SRF

Date

1/3/23

Project Geotechnical Investigation East 335988.0 m
 Site 97 - 111 Davidson Street North 8175644.0 m MGA2020 56
 Location Port Douglas Surface RL 4.62 m AHD
 Position Refer to Site Plan Contractor GEO Design
 Job No. 23003AA-D Machine 4-6t Excavator
 Client GURNER Bucket Size

TEST PIT: TP02

Sheet 1 OF 1

Date 1/2/23

Logged DLH

Excavation				Sampling		Field Material Description						
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY
												DCP TEST (AS 1289.6.3.2-1997) Blows per 100 mm
												0 5 10 15 20 25
EX	L	▽	0.0	4.62				SM	TOPSOIL SILTY SAND: black, fine to medium grained sand, low plasticity silt	M	L to MD	
			0.20									
			4.42		BDS 0.20-0.40 m			SP	SAND: pale grey, fine to medium grained sand, non plastic, trace organics			
			0.40									
			4.22		BDS 0.40-0.60 m			SP	SAND: pale brown, fine to medium grained sand, non plastic			
			0.60									
			4.02		BDS 0.60-1.00 m			SP	SAND: yellow-brown, fine to medium grained sand, non plastic			
			1.0		DS 1.00-1.40 m							
			1.5		DS 1.40-1.70 m							
			1.70							W		
									TEST TERMINATED AT 1.70 m Collapse			
			2.0									
			2.5									

Sketch & Other Observations



Comments

Checked

SRF

Date

1/3/23

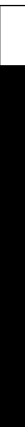




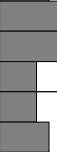

Project Geotechnical Investigation East 335929.0 m
 Site 97 - 111 Davidson Street North 8175637.0 m MGA2020 56
 Location Port Douglas Surface RL 3.98 m AHD
 Position Refer to Site Plan Contractor GEO Design
 Job No. 23003AA-D Machine 4-6t Excavator
 Client GURNER Bucket Size

TEST PIT: TP03

Sheet 1 OF 1

Date 1/2/23

Logged DLH

Excavation				Sampling		Field Material Description											
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DCP TEST (AS 1289.6.3.2-1997) Blows per 100 mm					
												0	5	10	15	20	25
EX	L	▽	0.0	3.98	BDS 0.20-0.60 m			SM	TOPSOIL SILTY SAND: black, fine to medium grained sand, low plasticity silt	M	L to MD						
			0.20	3.78			SP	SAND: grey, fine to medium grained sand, non plastic									
			0.5	0.60	BDS 0.60-1.10 m			SP	SAND: yellow-brown, fine to medium grained sand, non plastic								
			0.60	3.38													
			1.0	1.10	DS 1.10-1.40 m			SP	SAND: yellow, fine to medium grained sand, non plastic	W							
			1.10	2.88													
1.40					TEST TERMINATED AT 1.40 m Collapse												
1.5																	
			2.0														
			2.5														

Sketch & Other Observations



Comments

Checked

SRF

Date






























1/3/23

Project	Geotechnical Investigation	East	335898.0 m
Site	97 - 111 Davidson Street	North	8175644.0 m MGA2020 56
Location	Port Douglas	Surface RL	3.40 m AHD
Position	Refer to Site Plan	Contractor	GEO Design
Job No.	23003AA-D	Machine	4-6t Excavator
Client	GURNER	Bucket Size	

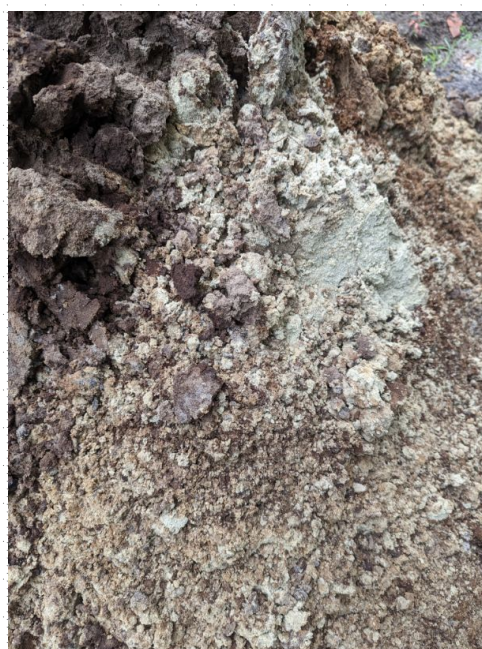
Sheet 1 OF 1

Date 1/2/23

Logged DLH

Excavation					Sampling		Field Material Description										
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	DCP TEST (AS 1289.6.3.2-1997) Blows per 100 mm					
												0	5	10	15	20	25
		▽	0.0	3.40 0.10	BDS 0.10-0.60 m			SP SM	TOPSOIL SILTY SAND: black, fine to medium grained sand, low plasticity silt, trace organics	M	L to MD						
			SP SM	SAND: grey, fine to medium grained sand, non plastic													
			0.5	0.60 2.80	DS 0.60-1.00 m			SP	SAND: yellow-brown, fine to medium grained sand, non plastic								
																	
			1.0	1.00						W							
									TEST TERMINATED AT 1.00 m Collapse								
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	
																	

Sketch & Other Observations



Comments

Checked	SRF
Date	1/3/23









Project Geotechnical Investigation East 335938.0 m
 Site 97 - 111 Davidson Street North 8175678.0 m MGA2020 56
 Location Port Douglas Surface RL 3.91 m AHD
 Position Refer to Site Plan Contractor GEO Design
 Job No. 23003AA-D Machine 4-6t Excavator
 Client GURNER Bucket Size

TEST PIT: TP05

Sheet 1 OF 1

Date 1/2/23

Logged DLH

Excavation				Sampling		Field Material Description											
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DCP TEST (AS 1289.6.3.2-1997) Blows per 100 mm					
												0	5	10	15	20	25
EX	L		0.0	3.91	BDS 0.10-0.50 m			SM	TOPSOIL SILTY SAND: black, fine to medium grained sand, low plasticity silt, trace organics	M	L to MD						
				0.10													
				3.81													
				0.50													
			0.5	3.41	BDS 0.50-1.00 m		SP	SAND: yellow-brown, fine to medium grained sand, non plastic									
			1.0	1.10	DS 1.00-1.10 m					W							
									TEST TERMINATED AT 1.10 m Collapse								
			1.5														
			2.0														
			2.5														

Sketch & Other Observations



Comments

Checked

SRF

Date

1/3/23

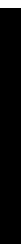
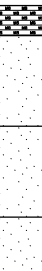

Project Geotechnical Investigation East 335894.0 m
 Site 97 - 111 Davidson Street North 8175725.0 m MGA2020 56
 Location Port Douglas Surface RL 3.13 m AHD
 Position Refer to Site Plan Contractor GEO Design
 Job No. 23003AA-D Machine 4-6t Excavator
 Client GURNER Bucket Size

TEST PIT: TP06

Sheet 1 OF 1

Date 1/2/23

Logged DLH

Excavation				Sampling		Field Material Description															
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	DCP TEST (AS 1289.6.3.2-1997) Blows per 100 mm								
												0	5	10	15	20	25				
EX	L	▽	0.0	3.13	BDS 0.10-0.40 m			SM	TOPSOIL SILTY SAND: black, fine to medium grained sand, low plasticity silt, with organics	M	L to MD										
			0.10	3.03				SP	SAND: pale grey, fine to medium grained sand, non plastic, trace organics												
			0.40	2.73	BDS 0.40-0.70 m			SP	SAND: pale brown, fine to medium grained sand, non plastic												
			0.70	2.43	DS 0.70 m			SP	SAND: yellow-brown, fine to medium grained sand, non plastic	W											
			0.90						TEST TERMINATED AT 0.90 m Collapse												
								1.0													
			1.5																		
			2.0																		
			2.5																		

Sketch & Other Observations



Comments

Checked

SRF

Date

1/3/23

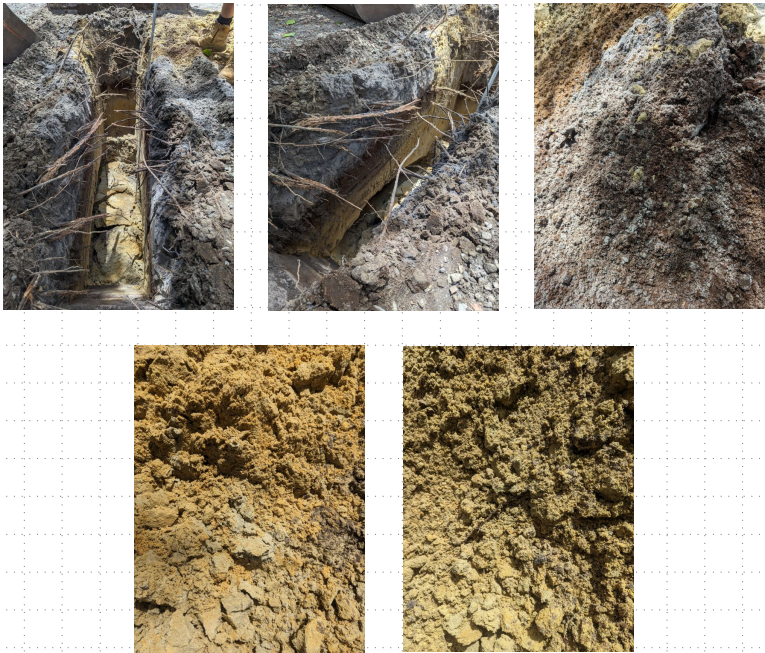
Project Geotechnical Investigation East 335977.0 m
 Site 97 - 111 Davidson Street North 8175603.0 m MGA2020 56
 Location Port Douglas Surface RL 4.51 m AHD
 Position Refer to Site Plan Contractor GEO Design
 Job No. 23003AA-D Machine 4-6t Excavator
 Client GURNER Bucket Size

TEST PIT: TP07

Sheet 1 OF 1
 Date 1/2/23
 Logged DLH

Excavation				Sampling		Field Material Description																								
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DCP TEST (AS 1289.6.3.2-1997) Blows per 100 mm																		
												0	5	10	15	20	25													
EX			0.0	4.51	BDS 0.20-0.70 m			GW	FILL GRAVEL: grey-brown, fine to coarse gravel, non plastic, with fine to coarse grained sand, with organics TOPSOIL SILTY SAND: black, fine to medium grained sand, low plasticity silt, trace organics SAND: pale grey, fine to medium grained sand, non plastic	VL																				
			0.10	4.41				SM																						
			0.20	4.31				SP																						
			0.5																											
			0.70																											
			3.81					BDS 0.70-0.90 m										SP	SAND: pale brown, fine to medium grained sand, non plastic											
			0.90					BDS 0.90-1.40 m										SP	SAND: yellow-brown, fine to medium grained sand, non plastic											
			3.61																											
			1.0																											
			1.5																											
			1.80																											
			2.0						TEST TERMINATED AT 1.80 m Collapse																					
			2.5																											

Sketch & Other Observations



Comments

Checked SRF
 Date 1/3/23









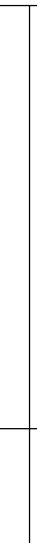

Project Geotechnical Investigation East 335907.0 m
 Site 97 - 111 Davidson Street North 8175557.0 m MGA2020 56
 Location Port Douglas Surface RL 4.01 m AHD
 Position Refer to Site Plan Contractor GEO Design
 Job No. 23003AA-D Machine 4-6t Excavator
 Client GURNER Bucket Size

TEST PIT: TP08

Sheet 1 OF 1

Date 1/2/23

Logged DLH

Excavation				Sampling		Field Material Description																								
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	DCP TEST (AS 1289.6.3.2-1997) Blows per 100 mm																	
													0	5	10	15	20	25												
EX	L		0.0	4.01	BDS 0.20-0.40 m			SM	TOPSOIL SILTY SAND: dark grey, fine to medium grained sand, low plasticity silt, with organics	M	L to MD																			
			<i>0.20</i>																											
			3.81																											
			<i>0.40</i>																											
			3.61																											
			0.5																											
			<i>0.60</i>																											
			3.41																											
			1.0																											
			1.40																											
			1.5						TEST TERMINATED AT 1.40 m Collapse																					
			2.0																											
			2.5																											

Sketch & Other Observations



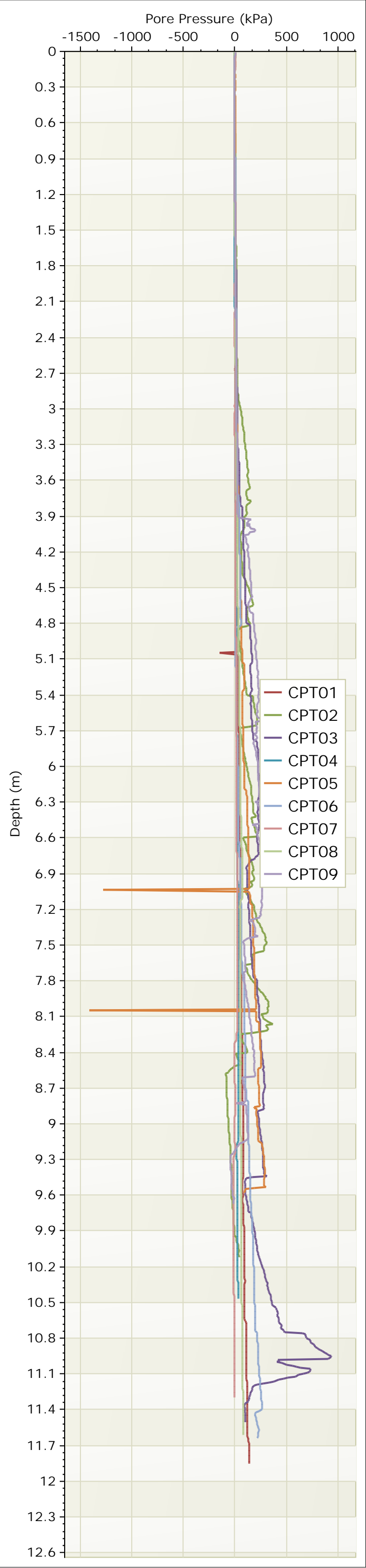
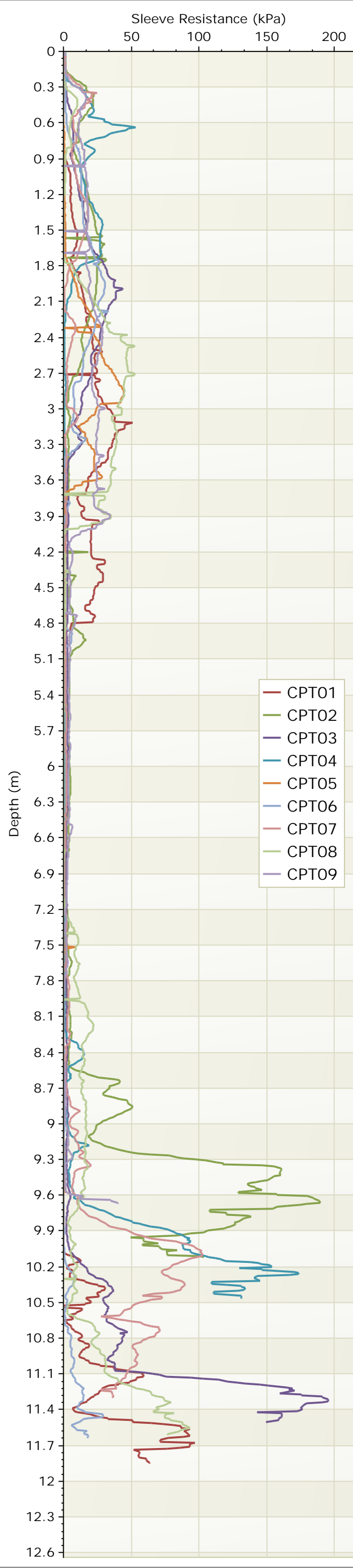
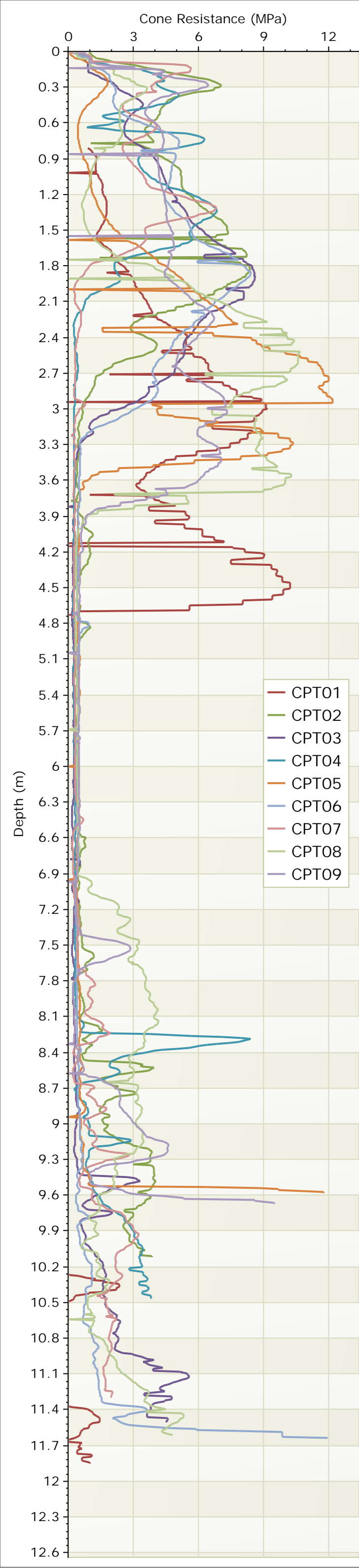
Comments

Checked

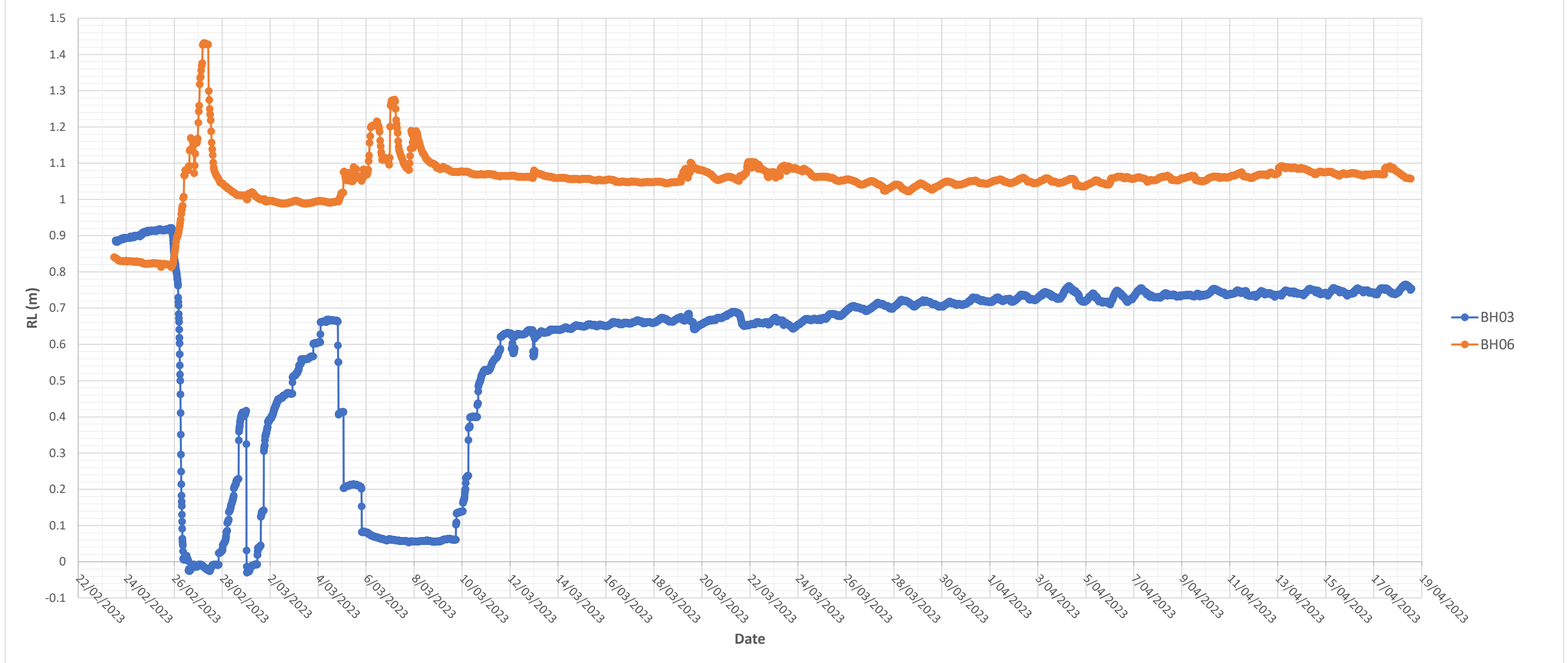
SRF

Date

1/3/23



Groundwater Levels



Appendix C

Results of Laboratory Testing



Consoil Solutions Pty. Ltd. T/A Earth Test
5 Costa Street, Tolga Industrial Estate
PO Box 1042, Tolga, QLD, 4882
Phone: 0740 954 734
Email: info@earthtest.com.au
NATA Accreditation No. 18563
ACN: 625 941 139 ABN: 17625941139
QBCC #: 15092731

Moisture Content Report

Client :	GEO Design	Report Number:	SI 096-23 - 1/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	24/02/2023
Project Name :	Geotechnical Investigation 23003AA-D	Order Number :	
Project Number :	SI 096-23	Test Method :	AS1289.2.1.1
Location:	97 111 Davidson St , Port Douglas	Page 1 of 1	

Sample Number :	T-16690	T-16691	T-16692	T-16693
Test Number :	1	2	3	4
Sampling Method :	As Received	As Received	As Received	As Received
Date Sampled :	30/01/2023	30/01/2023	30/01/2023	30/01/2023
Date Tested :	23/02/2023	23/02/2023	23/02/2023	23/02/2023
Material Type :				
Material Source :	Unknown	Unknown	Unknown	Unknown
Lot Number :				
Sample Location :	BH01 7.0 - 7.45	BH04 5.5 - 5.95	BH04 10.0 - 10.45	BH06 14.5 - 14.95
Oven Temperature (°C) :	105-110	105-110	105-110	105-110
Soil Description :				
Moisture Content (%) :	47.6	51.0	22.0	17.0
Remarks :	Test results only apply to the sample tested.			



Accredited for compliance with ISO/IEC 17025 - Testing

APPROVED SIGNATORY

GN - Laboratory Manager
NATA Accreditation Number
18563

Document Code RF120-9



Consoil Solutions Pty. Ltd. T/A Earth Test
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 PO Box 1042, Tolga, QLD, 4882
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 Email: info@earthtest.com.au
 NATA Accreditation No. 18563
 ACN: 625 941 139 ABN: 17625941139
 QBCC #: 15092731

Quality of Materials Report

Client :	GEO Design	Report Number:	SI 096-23 - 2/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	1/03/2023
Project Name :	Geotechnical Investigation 23003AA-D	Order Number :	
Project Number :	SI 096-23	Test Method :	AS1289.3.6.1
Location:	97 111 Davidson St , Port Douglas	Page 1 of 4	

Sample Number :	T-16690	SAMPLE LOCATION	
Sampling Method :	As Received	BH01	
Sampled By :	Client	7.0 - 7.45	
Date Sampled :	30/01/2023		
Date Tested :	28/02/2023		
Material Type :		Test Number :	1
Material Source :	Unknown	Lot Number :	
Remarks :	Test results only apply to the sample tested.	Specification Number :	

AS Sieve Size(mm)	Percent Passing	Specification Limits		
100				
75.0	100			
63.0				
53.0	100			
37.5	100			
26.5	100			
19.0	100			
16.0				
13.2	100			
9.5	100			
6.7				
4.75	100			
2.36	99			
1.18	97			
0.600	95			
0.425	92			
0.300	89			
0.150	80			
0.075	70			

		Test Method	Results		
Liquid Limit (%) :		AS1289.3.1.2, 3.2.1, 3.3.1, 3.4.1	40	Shrinkage Comments :	Crumbling Occurred
Plastic Limit (%) :			19	Mould Length (mm) :	125
Plasticity Index (%) :			21	Sample History	Oven Dried
Linear Shrinkage (%) :			11	Q252 Weighted PI (%) :	1932
Soil Description :					

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	<p>GN - Laboratory Manager NATA Accreditation Number 18563</p>	



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 NATA Accreditation No. 18563
 ACN: 625 941 139 ABN: 17625941139
 QBCC #: 15092731

Quality of Materials Report

Client :	GEO Design	Report Number:	SI 096-23 - 2/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	1/03/2023
Project Name :	Geotechnical Investigation 23003AA-D	Order Number :	
Project Number :	SI 096-23	Test Method :	AS1289.3.6.1
Location:	97 111 Davidson St , Port Douglas	Page 2 of 4	

Sample Number :	T-16691	SAMPLE LOCATION	
Sampling Method :	As Received	BH04	
Sampled By :	Client	5.5 - 5.95	
Date Sampled :	30/01/2023		
Date Tested :	28/02/2023		
Material Type :		Test Number :	2
Material Source :	Unknown	Lot Number :	
Remarks :	Test results only apply to the sample tested.	Specification Number :	

AS Sieve Size(mm)	Percent Passing	Specification Limits	
100			
75.0	100		
63.0			
53.0	100		
37.5	100		
26.5	100		
19.0	100		
16.0			
13.2	100		
9.5	100		
6.7			
4.75	100		
2.36	99		
1.18	97		
0.600	91		
0.425	89		
0.300	84		
0.150	71		
0.075	59		

Test Method		Results		
Liquid Limit (%) :		38	Shrinkage Comments :	Cracking Occurred
Plastic Limit (%) :		19	Mould Length (mm) :	250
Plasticity Index (%) :		19	Sample History	Oven Dried
Linear Shrinkage (%) :		9	Q252 Weighted PI (%) :	1691
Soil Description :				

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		<p>GN - Laboratory Manager NATA Accreditation Number 18563</p>	



Consoil Solutions Pty. Ltd. T/A Earth Test
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 PO Box 1042, Tolga, QLD, 4882
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 NATA Accreditation No. 18563
 ACN: 625 941 139 ABN: 17625941139
 QBCC #: 15092731

Quality of Materials Report

Client :	GEO Design	Report Number:	SI 096-23 - 2/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	1/03/2023
Project Name :	Geotechnical Investigation 23003AA-D	Order Number :	
Project Number :	SI 096-23	Test Method :	AS1289.3.6.1
Location:	97 111 Davidson St , Port Douglas	Page 3 of 4	

Sample Number :	T-16692	SAMPLE LOCATION	
Sampling Method :	As Received	BH04	
Sampled By :	Client	10.0 - 10.45	
Date Sampled :	30/01/2023		
Date Tested :	28/02/2023		
Material Type :		Test Number :	3
Material Source :	Unknown	Lot Number :	
Remarks :	Test results only apply to the sample tested.	Specification Number :	

AS Sieve Size(mm)	Percent Passing	Specification Limits		
100				
75.0	100			
63.0				
53.0	100			
37.5	100			
26.5	100			
19.0	100			
16.0				
13.2	100			
9.5	100			
6.7				
4.75	100			
2.36	100			
1.18	98			
0.600	93			
0.425	92			
0.300	90			
0.150	86			
0.075	80			

		Test Method	Results		
Liquid Limit (%) :		AS1289.3.1.2, 3.2.1, 3.3.1, 3.4.1	50	Shrinkage Comments :	Some Curling Occured
Plastic Limit (%) :			17	Mould Length (mm) :	125
Plasticity Index (%) :			33	Sample History	Oven Dried
Linear Shrinkage (%) :			16	Q252 Weighted PI (%) :	3036
Soil Description :					

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	 GN - Laboratory Manager NATA Accreditation Number 18563	



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 NATA Accreditation No. 18563
 ACN: 625 941 139 ABN: 17625941139
 QBCC #: 15092731

Quality of Materials Report

Client :	GEO Design	Report Number:	SI 096-23 - 2/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	1/03/2023
Project Name :	Geotechnical Investigation 23003AA-D	Order Number :	
Project Number :	SI 096-23	Test Method :	AS1289.3.6.1
Location:	97 111 Davidson St , Port Douglas	Page 4 of 4	

Sample Number :	T-16693	SAMPLE LOCATION	
Sampling Method :	As Received	BH06	
Sampled By :	Client	14.5 - 14.95	
Date Sampled :	30/01/2023		
Date Tested :	28/02/2023		
Material Type :		Test Number :	4
Material Source :	Unknown	Lot Number :	
Remarks :	Test results only apply to the sample tested.	Specification Number :	

AS Sieve Size(mm)	Percent Passing	Specification Limits		
100				
75.0	100			
63.0				
53.0	100			
37.5	100			
26.5	100			
19.0	100			
16.0				
13.2	100			
9.5	99			
6.7				
4.75	95			
2.36	89			
1.18	73			
0.600	55			
0.425	45			
0.300	37			
0.150	28			
0.075	24			

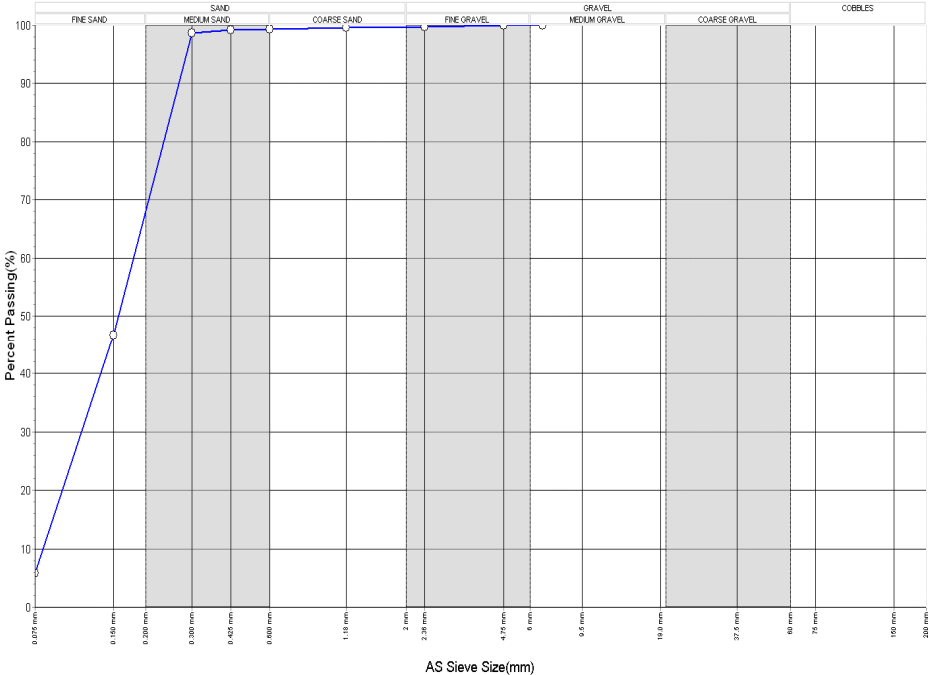
		Test Method	Results		
Liquid Limit (%) :		AS1289.3.1.2, 3.2.1, 3.3.1, 3.4.1	38	Shrinkage Comments :	No Cracking or Crumbling
Plastic Limit (%) :			14	Mould Length (mm) :	125
Plasticity Index (%) :			24	Sample History	Oven Dried
Linear Shrinkage (%) :			9.5	Q252 Weighted PI (%) :	1080
Soil Description :					

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	<p>GN - Laboratory Manager NATA Accreditation Number 18563</p>	



Quality of Materials Report

Client :	Geo Group	Report Number :	TS23223 - 1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	9/03/2023
Project Name :	Geotechnical Investigation/97-111 Davidson Street, Port Douglas	Order Number :	001
Project Number :	TS23223	Test Method :	AS1289.3.6.1
Location :	Port Douglas	Page 1 of 4	

Sample Number :	23-590	SAMPLE LOCATION	
Sampling Method :	As Received	Road Name: 97 - 111 Davidson Street	
Sampled By :	Client Sampled	Test Pit Number: TP01	
Date Sampled :	1/02/2023	Depth: 0.2m -0.6m	
Date Tested :	10/02/2023	Desc: Refer to logs	
Material Type :	Refer to logs	Test Number :	001
Material Source :	Insitu	Lot Number :	
Remarks :	Reissue of Report No. due to data change.	Specification Number :	

AS Sieve Size(mm)	Percent Passing	Specification Limits	
100			
75.0			
63.0			
53.0			
37.5			
26.5			
19.0			
16.0			
13.2			
9.5			
6.7	100		
4.75	100		
2.36	100		
1.18	100		
0.600	99		
0.425	99		
0.300	99		
0.150	47		
0.075	6		

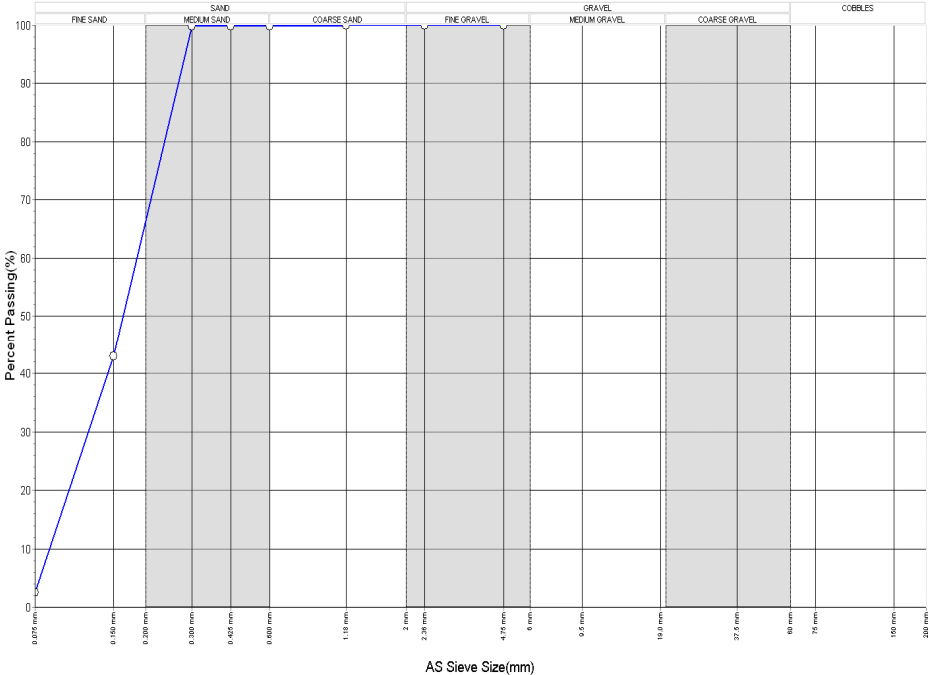
Test Method		Results		
Liquid Limit (%) :		31	Shrinkage Comments :	Crumbling Occurred
Plastic Limit (%) :		Not Obtainable	Mould Length (mm) :	250.6
Plasticity Index (%) :		NP (Non Plastic)	Sample History	Oven Dried
Linear Shrinkage (%) :		0	Sample Preparation:	Oven Dried
Soil Description :				

 <p>Accredited for compliance with ISO/IEC 17025 - Testing</p>	APPROVED SIGNATORY	
	 Lui Moti - Senior Technician NATA Accreditation Number 2856	



Quality of Materials Report

Client :	Geo Group	Report Number:	TS23223 - 1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	9/03/2023
Project Name :	Geotechnical Investigation/97-111 Davidson Street, Port Douglas	Order Number :	001
Project Number :	TS23223	Test Method :	AS1289.3.6.1
Location:	Port Douglas	Page 2 of 4	

Sample Number :	23-591	SAMPLE LOCATION	
Sampling Method :	As Received	Road Name: 97 - 111 Davidson Street	
Sampled By :	Client Sampled	Test Pit Number: TP02	
Date Sampled :	1/02/2023	Depth: 0.6m - 1.0m	
Date Tested :	10/02/2023	Desc: Refer to logs	
Material Type :	Refer to logs	Test Number :	001
Material Source :	Insitu	Lot Number :	
Remarks :	Reissue of Report No. due to data change.	Specification Number :	

AS Sieve Size(mm)	Percent Passing	Specification Limits	
100			
75.0			
63.0			
53.0			
37.5			
26.5			
19.0			
16.0			
13.2			
9.5			
6.7			
4.75	100		
2.36	100		
1.18	100		
0.600	100		
0.425	100		
0.300	100		
0.150	43		
0.075	3		

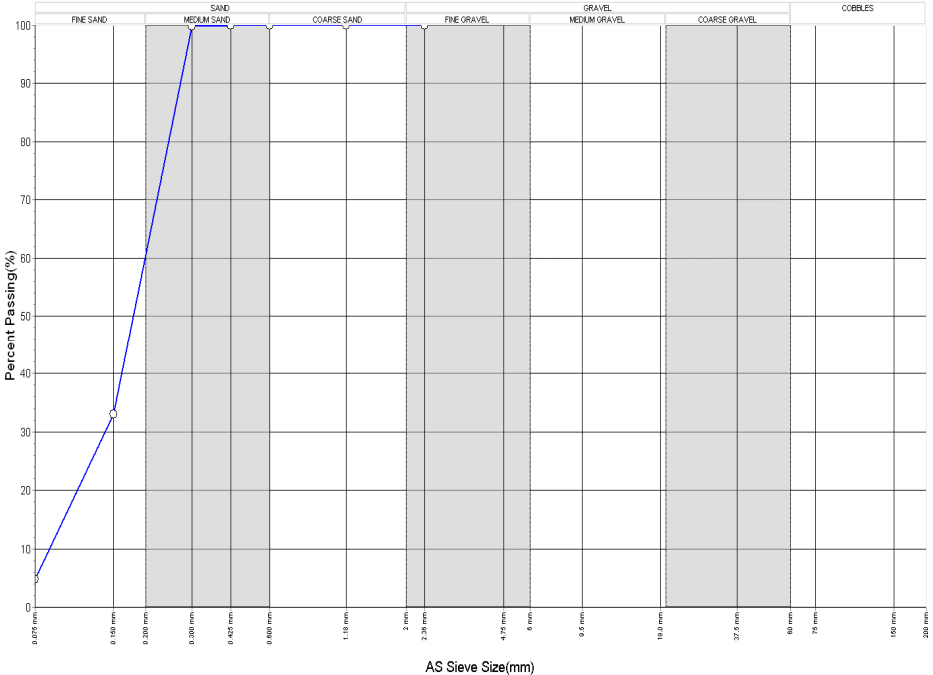
Test Method		Results		
Liquid Limit (%) :		30	Shrinkage Comments :	Crumbling Occurred
Plastic Limit (%) :		Not Obtainable	Mould Length (mm) :	250.3
Plasticity Index (%) :		NP (Non Plastic)	Sample History	Oven Dried
Linear Shrinkage (%) :		0	Sample Preparation:	Oven Dried
Soil Description :				

 <p>Accredited for compliance with ISO/IEC 17025 - Testing</p>	APPROVED SIGNATORY	
	 Lui Moti - Senior Technician NATA Accreditation Number 2856	



Quality of Materials Report

Client :	Geo Group	Report Number:	TS23223 - 1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	9/03/2023
Project Name :	Geotechnical Investigation/97-111 Davidson Street, Port Douglas	Order Number :	001
Project Number :	TS23223	Test Method :	AS1289.3.6.1
Location:	Port Douglas	Page 3 of 4	

Sample Number :	23-592	SAMPLE LOCATION	
Sampling Method :	As Supplied	Road Name: 97 - 111 Davidson Street	
Sampled By :	Client Sampled	Test Pit Number: TP05	
Date Sampled :	1/02/2023	Depth: 0.1m - 0.5m	
Date Tested :	10/02/2023	Desc: Refer to logs	
Material Type :	Refer to logs	Test Number :	001
Material Source :	Insitu	Lot Number :	
Remarks :	Reissue of Report No. due to data change.	Specification Number :	

AS Sieve Size(mm)	Percent Passing	Specification Limits	
100			
75.0			
63.0			
53.0			
37.5			
26.5			
19.0			
16.0			
13.2			
9.5			
6.7			
4.75			
2.36	100		
1.18	100		
0.600	100		
0.425	100		
0.300	100		
0.150	33		
0.075	5		

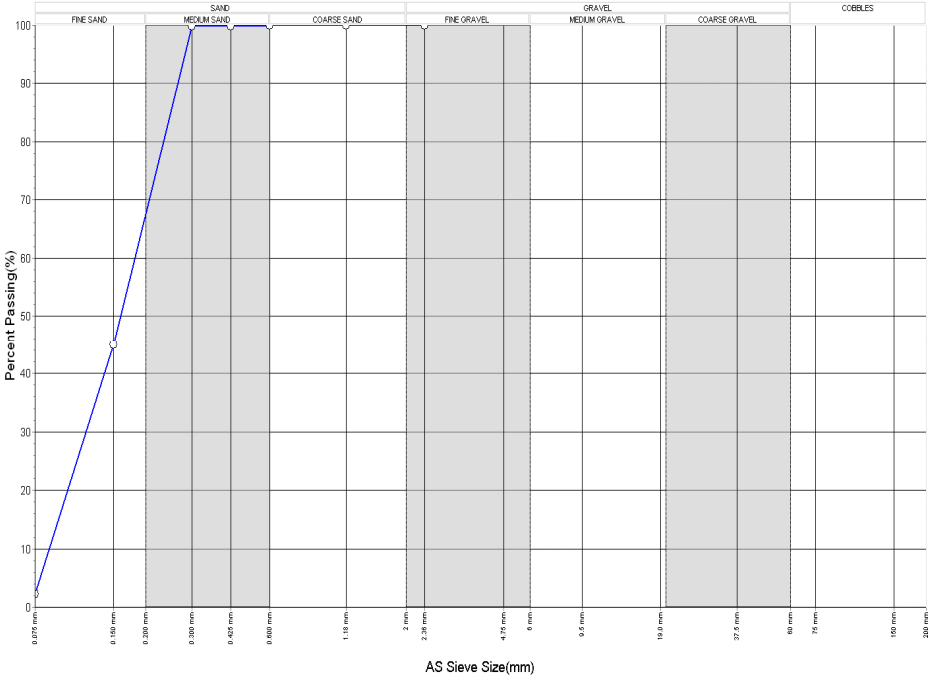
Test Method		Results		
Liquid Limit (%) :		31	Shrinkage Comments :	Crumbling Occurred
Plastic Limit (%) :		Not Obtainable	Mould Length (mm) :	250.6
Plasticity Index (%) :		NP (Non Plastic)	Sample History	Oven Dried
Linear Shrinkage (%) :		0	Sample Preparation:	Oven Dried
Soil Description :				

 <p>Accredited for compliance with ISO/IEC 17025 - Testing</p>	APPROVED SIGNATORY	
	 Lui Moti - Senior Technician NATA Accreditation Number 2856	



Quality of Materials Report

Client :	Geo Group	Report Number:	TS23223 - 1
Address :	14 Danbular Street, Smithfield, QLD, 4878	Report Date :	9/03/2023
Project Name :	Geotechnical Investigation/97-111 Davidson Street, Port Douglas	Order Number :	001
Project Number :	TS23223	Test Method :	AS1289.3.6.1
Location:	Port Douglas	Page 4 of 4	

Sample Number :	23-593	SAMPLE LOCATION	
Sampling Method :	As Received	Road Name: 97 - 111 Davidson Street	
Sampled By :	Client Sampled	Test Pit Number: TP07	
Date Sampled :	1/02/2023	Depth: 0.7m - 0.9m	
Date Tested :	10/02/2023	Desc: Refer to logs	
Material Type :	Refer to logs	Test Number :	001
Material Source :	Insitu	Lot Number :	
Remarks :	Reissue of Report No. due to data change.	Specification Number :	

AS Sieve Size(mm)	Percent Passing	Specification Limits	
100			
75.0			
63.0			
53.0			
37.5			
26.5			
19.0			
16.0			
13.2			
9.5			
6.7			
4.75			
2.36	100		
1.18	100		
0.600	100		
0.425	100		
0.300	100		
0.150	45		
0.075	2		

Test Method		Results		
Liquid Limit (%) :		33	Shrinkage Comments :	Crumbling Occurred
Plastic Limit (%) :		Not Obtainable	Mould Length (mm) :	250.6
Plasticity Index (%) :		NP (Non Plastic)	Sample History	Oven Dried
Linear Shrinkage (%) :		0	Sample Preparation:	Oven Dried
Soil Description :				

 <p>Accredited for compliance with ISO/IEC 17025 - Testing</p>	APPROVED SIGNATORY	
	 Lui Moti - Senior Technician NATA Accreditation Number 2856	

Moisture Content Report

Client :	Geo Group	Report Number:	TS23223 - 2/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date:	23/02/2023
Project Name :	Geotechnical Investigation/97-111 Davidson Street, Port Douglas	Order Number:	001
Job Number :	TS23223	Test Method:	-
Location:	Port Douglas	Page 1 of 1	

Sample Number :	23-590	23-591	23-592	23-593
Test Number:	001	001	001	001
Sampling Method :	As Received	As Received	As Supplied	As Received
Date Sampled :	1/02/2023	1/02/2023	1/02/2023	1/02/2023
Date Tested:	10/02/2023	10/02/2023	10/02/2023	10/02/2023
Material Type:	Refer to logs	Refer to logs	Refer to logs	Refer to logs
Material Source :	Insitu	Insitu	Insitu	Insitu
Lot Number :				
Sample Location :	Road Name: 97 - 111 Davidson Street Test Pit Number: TP01 Depth: 0.2m - 0.6m Desc: Refer to logs	Road Name: 97 - 111 Davidson Street Test Pit Number: TP02 Depth: 0.6m - 1.0m Desc: Refer to logs	Road Name: 97 - 111 Davidson Street Test Pit Number: TP05 Depth: 0.1m - 0.5m Desc: Refer to logs	Road Name: 97 - 111 Davidson Street Test Pit Number: TP07 Depth: 0.7m - 0.9m Desc: Refer to logs
Oven Temperature (C)	105-110	105-110	105-110	105-110
Soil Description:	Refer to logs	Refer to logs	Refer to logs	Refer to logs
Moisture Content:	14.5	13.1	13.2	10.2
Remarks:	Nata accreditation does not cover the performance of sampling.			



Accredited for compliance with ISO/IEC 17025 - Testing

APPROVED SIGNATORY:



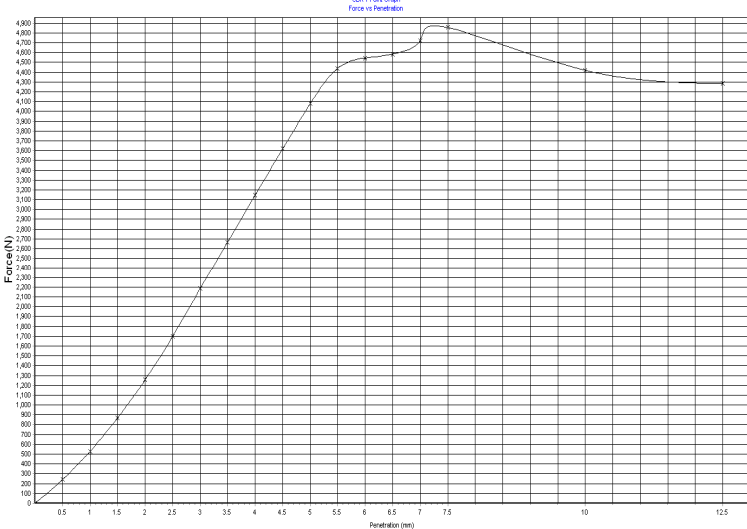
Lui Moti - Senior Technician
NATA Accreditation Number:
2856

Document Code: RF120-11

California Bearing Ratio Report (1 Point)

Client :	Geo Group	Report Number:	TS23223 - 3/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	23/02/2023
Project Number :	TS23223	Order Number :	
Project Name :	Geotechnical Investigation/97-111 Davidson Street, Port Douglas	Test Method :	AS1289.6.1.1
Location:	Port Douglas	Page 1 of 4	

Sample Number :	23-590	SAMPLE LOCATION	
Date Sampled :	1/02/2023	Road Name: 97 - 111 Davidson Street	
Date Tested :	18/02/2023	Test Pit Number: TP01	
Sampled By :	Client Sampled	Depth: 0.2m -0.6m	
Sampling Method :	As Received	Desc: Refer to logs	
Material Source :	Insitu	Lot Number :	
Material Type :	Refer to logs	Test Request Number : 001	
Remarks :	Nata accreditation does not cover the performance of sampling.		

Moisture Method :	AS1289.2.1.1		
Maximum Dry Density (t/m³) :	1.58		
Optimum Moisture Content (%) :	23.5		
Compactive Effort :	Standard		
Nominated Percentage of MDD :	98		
Nominated Percentage of OMC :	100		
Achieved Percentage of MDD :	98		
Achieved Percentage of OMC :	100.0		
Dry Density Before Soak (t/m³) :	1.55		
Dry Density After Soak (t/m³) :	1.55		
Moisture Content Before Soak (%) :	23.4		
Moisture Content After Soak (%) :	15.6		
Density Ratio After Soak (%) :	98.0		
Field Moisture Content (%) :	14.5		
Top Moisture Content - After Penetration (%) :	22.8		
Total Moisture Content - After Penetration (%) :	22.1		
Soak Condition :	Soaked		
Soak Period (days) :	4		
Swell (%) :	0.0		
CBR Surcharge (kg) :	4.5	Bearing Ratio 2.5mm (%) :	18.0
Oversize (%) :		Bearing Ratio 5.0mm (%) :	25.0
Oversize Material Replaced (%) :		CBR Value (%) :	25.0

Site Selection :	
Soil Description :	



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NATA Accreditation Number :
2856

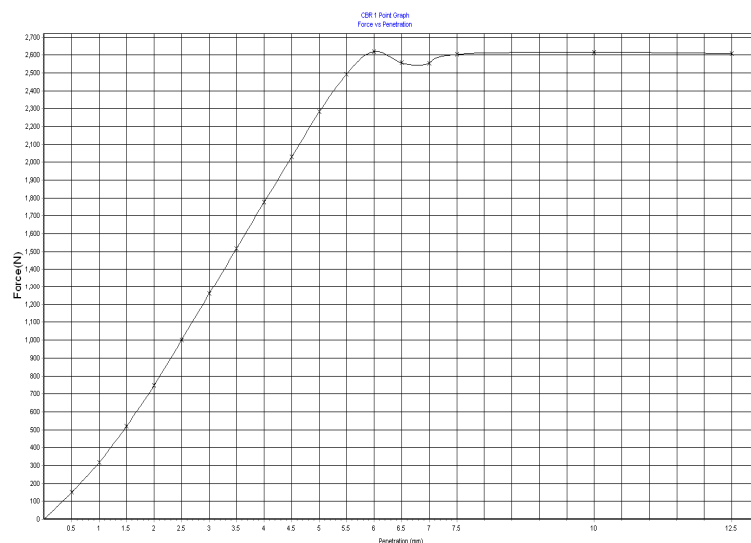
Document Code RF39-24

California Bearing Ratio Report (1 Point)

Client :	Geo Group	Report Number:	TS23223 - 3/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	23/02/2023
Project Number :	TS23223	Order Number :	
Project Name :	Geotechnical Investigation/97-111 Davidson Street, Port Douglas	Test Method :	AS1289.6.1.1
Location:	Port Douglas	Page 2 of 4	

Sample Number :	23-591	SAMPLE LOCATION
Date Sampled :	1/02/2023	
Date Tested :	18/02/2023	
Sampled By :	Client Sampled	
Sampling Method :	As Received	
Material Source :	Insitu	Lot Number :
Material Type :	Refer to logs	
Remarks :	Nata accreditation does not cover the performance of sampling.	
		Test Request Number : 001

Moisture Method :	AS1289.2.1.1
Maximum Dry Density (t/m ³) :	1.58
Optimum Moisture Content (%) :	25.5
Compactive Effort :	Standard
Nominated Percentage of MDD :	98
Nominated Percentage of OMC :	100
Achieved Percentage of MDD :	98
Achieved Percentage of OMC :	100.0
Dry Density Before Soak (t/m ³) :	1.55
Dry Density After Soak (t/m ³) :	1.55
Moisture Content Before Soak (%) :	25.4
Moisture Content After Soak (%) :	20.0
Density Ratio After Soak (%) :	98.0
Field Moisture Content (%) :	13.1
Top Moisture Content - After Penetration (%) :	25.0
Total Moisture Content - After Penetration (%) :	24.3
Soak Condition :	Soaked
Soak Period (days) :	4
Swell (%) :	0.0
CBR Surcharge (kg) :	4.5
Oversize (%) :	
Oversize Material Replaced (%) :	



Bearing Ratio 2.5mm (%) :	10.0
Bearing Ratio 5.0mm (%) :	13.0
CBR Value (%) :	13.0

Site Selection :	
Soil Description :	



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NATA Accreditation Number :
2856

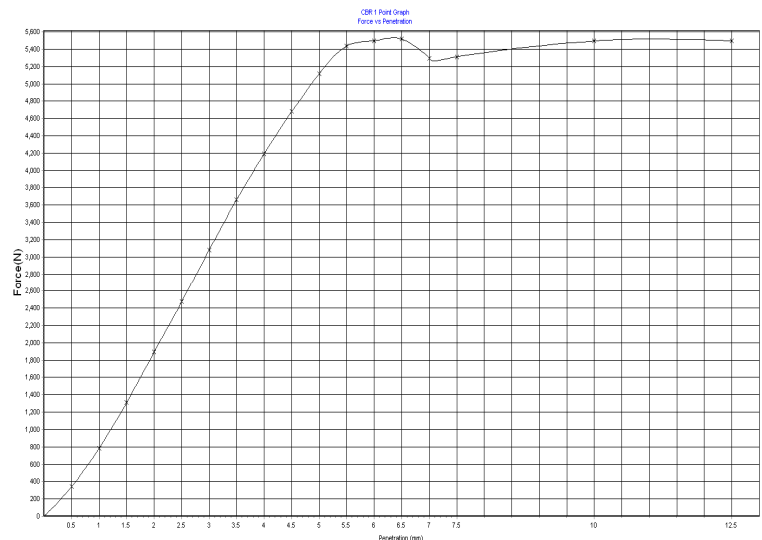
Document Code RF39-24

California Bearing Ratio Report (1 Point)

Client :	Geo Group	Report Number:	TS23223 - 3/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	23/02/2023
Project Number :	TS23223	Order Number :	
Project Name :	Geotechnical Investigation/97-111 Davidson Street, Port Douglas	Test Method :	AS1289.6.1.1
Location:	Port Douglas	Page 3 of 4	

Sample Number :	23-592	SAMPLE LOCATION	
Date Sampled :	1/02/2023	Road Name: 97 - 111 Davidson Street	
Date Tested :	18/02/2023	Test Pit Number: TP05	
Sampled By :	Client Sampled	Depth: 0.1m - 0.5m	
Sampling Method :	As Supplied	Desc: Refer to logs	
Material Source :	Insitu	Lot Number :	
Material Type :	Refer to logs	Test Request Number : 001	
Remarks :	Nata accreditation does not cover the performance of sampling.		

Moisture Method :	AS1289.2.1.1
Maximum Dry Density (t/m ³) :	1.57
Optimum Moisture Content (%) :	25.0
Compactive Effort :	Standard
Nominated Percentage of MDD :	98
Nominated Percentage of OMC :	100
Achieved Percentage of MDD :	98
Achieved Percentage of OMC :	100.0
Dry Density Before Soak (t/m ³) :	1.54
Dry Density After Soak (t/m ³) :	1.54
Moisture Content Before Soak (%) :	24.9
Moisture Content After Soak (%) :	16.7
Density Ratio After Soak (%) :	98.0
Field Moisture Content (%) :	13.2
Top Moisture Content - After Penetration (%) :	23.5
Total Moisture Content - After Penetration (%) :	23.3
Soak Condition :	Soaked
Soak Period (days) :	4
Swell (%) :	0.0
CBR Surcharge (kg) :	4.5
Oversize (%) :	
Oversize Material Replaced (%) :	



Bearing Ratio 2.5mm (%) :	25.0
Bearing Ratio 5.0mm (%) :	25.0
CBR Value (%) :	25.0

Site Selection :	
Soil Description :	



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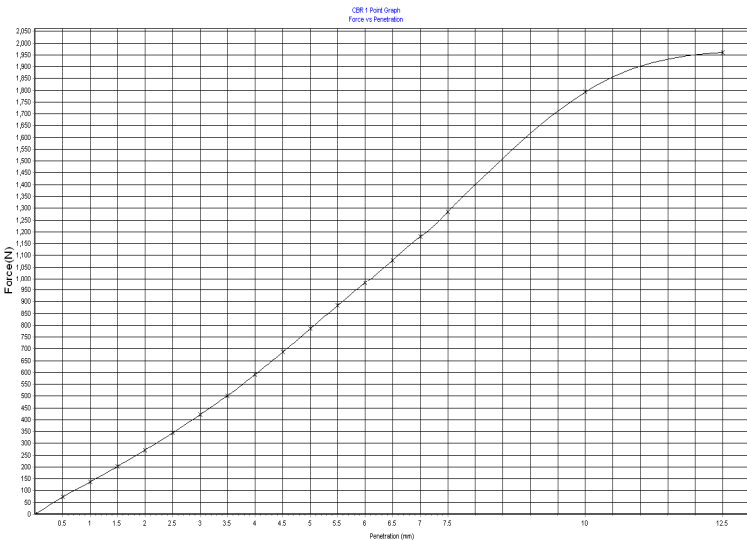
Lui Moti - Senior Technician
NATA Accreditation Number :
2856

Document Code RF39-24

California Bearing Ratio Report (1 Point)

Client :	Geo Group	Report Number:	TS23223 - 3/1
Address :	14 Danbullan Street, Smithfield, QLD, 4878	Report Date :	23/02/2023
Project Number :	TS23223	Order Number :	
Project Name :	Geotechnical Investigation/97-111 Davidson Street, Port Douglas	Test Method :	AS1289.6.1.1
Location:	Port Douglas	Page 4 of 4	

Sample Number :	23-593	SAMPLE LOCATION	
Date Sampled :	1/02/2023	Road Name: 97 - 111 Davidson Street	
Date Tested :	18/02/2023	Test Pit Number: TP07	
Sampled By :	Client Sampled	Depth: 0.7m - 0.9m	
Sampling Method :	As Received	Desc: Refer to logs	
Material Source :	Insitu	Lot Number :	
Material Type :	Refer to logs	Test Request Number : 001	
Remarks :	Nata accreditation does not cover the performance of sampling.		

Moisture Method :	AS1289.2.1.1		
Maximum Dry Density (t/m³) :	1.41		
Optimum Moisture Content (%) :	29.5		
Compactive Effort :	Standard		
Nominated Percentage of MDD :	98		
Nominated Percentage of OMC :	100		
Achieved Percentage of MDD :	98		
Achieved Percentage of OMC :	99.0		
Dry Density Before Soak (t/m³) :	1.38		
Dry Density After Soak (t/m³) :	1.38		
Moisture Content Before Soak (%) :	29.3		
Moisture Content After Soak (%) :	25.4		
Density Ratio After Soak (%) :	98.0		
Field Moisture Content (%) :	28.7		
Top Moisture Content - After Penetration (%) :	24.5		
Total Moisture Content - After Penetration (%) :	25.8		
Soak Condition :	Soaked		
Soak Period (days) :	4		
Swell (%) :	0.0		
CBR Surcharge (kg) :	4.5	Bearing Ratio 2.5mm (%) :	4.0
Oversize (%) :		Bearing Ratio 5.0mm (%) :	5.0
Oversize Material Replaced (%) :		CBR Value (%) :	5.0

Site Selection :	
Soil Description :	



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Lui Moti - Senior Technician
NATA Accreditation Number :
2856

Document Code RF39-24

Geo Design Pty Ltd
14 Danbullan Street
Smithfield
QLD 4878



NATA Accredited
Accreditation Number 1261
Site Number 20794

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NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: **Christina Stallard-Smith**

Report **967462-S**
Project name **97-111 DAVIDSON ST PORT DOUGLAS**
Project ID **23003AA - D**
Received Date **Feb 27, 2023**

Client Sample ID			BH01 3.0-3.5m	BH01 3.5-4.0m	BH02 1.0-1.5m	BH02 1.5-2.0m
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Fe0064288	B23-Fe0064289	B23-Fe0064290	B23-Fe0064291
Date Sampled			Jan 30, 2023	Jan 30, 2023	Jan 30, 2023	Jan 30, 2023
Test/Reference	LOR	Unit				
Extraneous Material						
<2mm Fraction	0.005	g	87	180	190	250
>2mm Fraction	0.005	g	15	< 0.005	< 0.005	< 0.005
Analysed Material	0.1	%	85	100	100	100
Extraneous Material	0.1	%	15	< 0.1	< 0.1	< 0.1
Net Acidity (Excluding ANC)						
CRS Suite - Net Acidity - NASSG (Excluding ANC)	0.02	% S	< 0.02	0.53	0.07	0.05
CRS Suite - Net Acidity - NASSG (Excluding ANC)	10	mol H+/t	< 10	330	41	29
CRS Suite - Liming Rate - NASSG (Excluding ANC)	1	kg CaCO ₃ /t	< 1	25	3.1	2.1
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	5.8	4.0	4.6	4.6
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	< 2	62	23	17
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	< 0.003	0.10	0.036	0.027
Potential Acidity - Chromium Reducible Sulfur						
Chromium Reducible Sulfur (s-SCr) (NLM-2.1) ^{S04}	0.005	% S	0.007	0.43	0.029	0.018
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	3	mol H+/t	4.1	270	18	11
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	N/A	0.065	N/A	N/A
HCl Extractable Sulfur	0.005	% S	N/A	0.058	N/A	N/A
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (SNAS) NLM-4.1	0.005	% S	N/A	< 0.005	N/A	N/A
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	N/A	< 0.005	N/A	N/A
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	N/A	< 2	N/A	N/A
HCl Extractable Sulfur Correction Factor	1	factor	2.0	2.0	2.0	2.0
Acid Neutralising Capacity (ANCbt)						
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	0.01	% CaCO ₃	N/A	N/A	N/A	N/A
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2) ^{S03}	0.02	% S	N/A	N/A	N/A	N/A
Acid Neutralising Capacity - (a-ANCbt) (NLM-5.2)	2	mol H+/t	N/A	N/A	N/A	N/A
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
Net Acidity (Including ANC)						
CRS Suite - Net Acidity - NASSG (Including ANC)	0.02	% S	< 0.02	0.53	0.07	0.05
CRS Suite - Net Acidity - NASSG (Including ANC)	10	mol H+/t	< 10	330	41	29
CRS Suite - Liming Rate - NASSG (Including ANC) ^{S01}	1	kg CaCO ₃ /t	< 1	25	3.1	2.1
Sample Properties						
% Moisture	1	%	24	29	24	23

Client Sample ID			BH02 2.0-2.5m	BH02 2.5-3.0m	BH02 3.0-3.5m	BH03 3.5-4.0m
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Fe0064292	B23-Fe0064293	B23-Fe0064294	B23-Fe0064295
Date Sampled			Jan 30, 2023	Jan 30, 2023	Jan 30, 2023	Jan 31, 2023
Test/Reference	LOR	Unit				
Extraneous Material						
<2mm Fraction	0.005	g	190	160	98	110
>2mm Fraction	0.005	g	< 0.005	< 0.005	< 0.005	< 0.005
Analysed Material	0.1	%	100	100	100	100
Extraneous Material	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Net Acidity (Excluding ANC)						
CRS Suite - Net Acidity - NASSG (Excluding ANC)	0.02	% S	0.74	0.98	0.14	1.8
CRS Suite - Net Acidity - NASSG (Excluding ANC)	10	mol H+/t	460	610	90	1100
CRS Suite - Liming Rate - NASSG (Excluding ANC)	1	kg CaCO ₃ /t	35	46	6.8	85
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	4.0	3.9	5.0	3.7
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	100	96	10	190
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	0.16	0.15	0.017	0.30
Potential Acidity - Chromium Reducible Sulfur						
Chromium Reducible Sulfur (s-SCr) (NLM-2.1) ^{S04}	0.005	% S	0.58	0.82	0.13	1.5
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	3	mol H+/t	360	510	80	950
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	0.077	0.12	N/A	0.19
HCl Extractable Sulfur	0.005	% S	0.073	0.12	N/A	0.17
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (SNAS) NLM-4.1	0.005	% S	< 0.005	< 0.005	N/A	< 0.005
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	< 0.005	< 0.005	N/A	< 0.005
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	< 2	< 2	N/A	< 2
HCl Extractable Sulfur Correction Factor	1	factor	2.0	2.0	2.0	2.0
Acid Neutralising Capacity (ANCbt)						
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	0.01	% CaCO ₃	N/A	N/A	N/A	N/A
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2) ^{S03}	0.02	% S	N/A	N/A	N/A	N/A
Acid Neutralising Capacity - (a-ANCbt) (NLM-5.2)	2	mol H+/t	N/A	N/A	N/A	N/A
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
Net Acidity (Including ANC)						
CRS Suite - Net Acidity - NASSG (Including ANC)	0.02	% S	0.74	0.98	0.14	1.8
CRS Suite - Net Acidity - NASSG (Including ANC)	10	mol H+/t	460	610	90	1100
CRS Suite - Liming Rate - NASSG (Including ANC) ^{S01}	1	kg CaCO ₃ /t	35	46	6.8	85
Sample Properties						
% Moisture	1	%	40	34	24	55

Client Sample ID			BH04 1.0-1.5m	BH04 1.5-2.0m	BH04 2.0-2.5m	BH04 2.5-3.0m
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Fe0064296	B23-Fe0064297	B23-Fe0064298	B23-Fe0064299
Date Sampled			Feb 03, 2023	Feb 03, 2023	Feb 03, 2023	Feb 03, 2023
Test/Reference	LOR	Unit				
Extraneous Material						
<2mm Fraction	0.005	g	190	130	200	110
>2mm Fraction	0.005	g	1.7	< 0.005	< 0.005	< 0.005
Analysed Material	0.1	%	99	100	100	100
Extraneous Material	0.1	%	0.9	< 0.1	< 0.1	< 0.1

Client Sample ID			BH04 1.0-1.5m	BH04 1.5-2.0m	BH04 2.0-2.5m	BH04 2.5-3.0m
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Fe0064296	B23-Fe0064297	B23-Fe0064298	B23-Fe0064299
Date Sampled			Feb 03, 2023	Feb 03, 2023	Feb 03, 2023	Feb 03, 2023
Test/Reference	LOR	Unit				
Net Acidity (Excluding ANC)						
CRS Suite - Net Acidity - NASSG (Excluding ANC)	0.02	% S	0.03	1.4	0.09	1.6
CRS Suite - Net Acidity - NASSG (Excluding ANC)	10	mol H+/t	18	890	55	980
CRS Suite - Liming Rate - NASSG (Excluding ANC)	1	kg CaCO3/t	1.3	67	4.2	74
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	5.1	4.0	4.5	4.3
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	9.9	170	21	110
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	0.016	0.28	0.033	0.18
Potential Acidity - Chromium Reducible Sulfur						
Chromium Reducible Sulfur (s-SCr) (NLM-2.1) ^{S04}	0.005	% S	0.012	1.1	0.055	1.4
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	3	mol H+/t	7.6	710	35	870
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	N/A	0.20	0.010	0.19
HCl Extractable Sulfur	0.005	% S	N/A	0.19	0.014	0.19
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (SNAS) NLM-4.1	0.005	% S	N/A	< 0.005	0.007	< 0.005
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	N/A	< 0.005	0.006	< 0.005
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	N/A	< 2	3.4	< 2
HCl Extractable Sulfur Correction Factor	1	factor	2.0	2.0	2.0	2.0
Acid Neutralising Capacity (ANCbt)						
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	0.01	% CaCO3	N/A	N/A	N/A	N/A
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2) ^{S03}	0.02	% S	N/A	N/A	N/A	N/A
Acid Neutralising Capacity - (a-ANCbt) (NLM-5.2)	2	mol H+/t	N/A	N/A	N/A	N/A
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
Net Acidity (Including ANC)						
CRS Suite - Net Acidity - NASSG (Including ANC)	0.02	% S	0.03	1.4	0.09	1.6
CRS Suite - Net Acidity - NASSG (Including ANC)	10	mol H+/t	18	890	55	980
CRS Suite - Liming Rate - NASSG (Including ANC) ^{S01}	1	kg CaCO3/t	1.3	67	4.2	74
Sample Properties						
% Moisture	1	%	23	42	22	52

Client Sample ID			BH04 3.0-3.5m	BH04 3.5-4.0m	BH05 3.0-3.5m	BH06 3.5-4.0m
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Fe0064300	B23-Fe0064301	B23-Fe0064302	B23-Fe0064303
Date Sampled			Feb 03, 2023	Feb 03, 2023	Feb 03, 2023	Feb 06, 2023
Test/Reference	LOR	Unit				
Extraneous Material						
<2mm Fraction	0.005	g	280	67	110	67
>2mm Fraction	0.005	g	< 0.005	< 0.005	< 0.005	20
Analysed Material	0.1	%	100	100	100	77
Extraneous Material	0.1	%	< 0.1	< 0.1	< 0.1	23
Net Acidity (Excluding ANC)						
CRS Suite - Net Acidity - NASSG (Excluding ANC)	0.02	% S	0.06	1.5	1.3	2.4
CRS Suite - Net Acidity - NASSG (Excluding ANC)	10	mol H+/t	37	930	790	1500
CRS Suite - Liming Rate - NASSG (Excluding ANC)	1	kg CaCO3/t	2.8	70	59	110
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	5.4	5.0	4.5	4.4
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	3.8	57	73	110
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	0.006	0.091	0.12	0.18

Client Sample ID			BH04 3.0-3.5m	BH04 3.5-4.0m	BH05 3.0-3.5m	BH06 3.5-4.0m
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Fe0064300	B23-Fe0064301	B23-Fe0064302	B23-Fe0064303
Date Sampled			Feb 03, 2023	Feb 03, 2023	Feb 03, 2023	Feb 06, 2023
Test/Reference	LOR	Unit				
Potential Acidity - Chromium Reducible Sulfur						
Chromium Reducible Sulfur (s-SCr) (NLM-2.1) ^{S04}	0.005	% S	0.053	1.4	1.2	2.3
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	3	mol H+/t	33	870	720	1400
Extractable Sulfur						
Sulfur - KCl Extractable	0.005	% S	N/A	N/A	N/A	0.25
HCl Extractable Sulfur	0.005	% S	N/A	N/A	N/A	0.23
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (SNAS) NLM-4.1	0.005	% S	N/A	N/A	N/A	< 0.005
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	N/A	N/A	N/A	< 0.005
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	N/A	N/A	N/A	< 2
HCl Extractable Sulfur Correction Factor	1	factor	2.0	2.0	2.0	2.0
Acid Neutralising Capacity (ANCbt)						
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	0.01	% CaCO3	N/A	N/A	N/A	N/A
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2) ^{S03}	0.02	% S	N/A	N/A	N/A	N/A
Acid Neutralising Capacity - (a-ANCbt) (NLM-5.2)	2	mol H+/t	N/A	N/A	N/A	N/A
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
Net Acidity (Including ANC)						
CRS Suite - Net Acidity - NASSG (Including ANC)	0.02	% S	0.06	1.5	1.3	2.4
CRS Suite - Net Acidity - NASSG (Including ANC)	10	mol H+/t	37	930	790	1500
CRS Suite - Liming Rate - NASSG (Including ANC) ^{S01}	1	kg CaCO3/t	2.8	70	59	110
Sample Properties						
% Moisture	1	%	21	50	49	40

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Extraneous Material - Method: LTM-GEN-7050/7070	Brisbane	Mar 02, 2023	6 Week
Chromium Suite - NASSG (Excluding ANC) - Method: LTM-GEN-7070 Chromium Reducible Sulfur Suite	Brisbane	Mar 02, 2023	6 Week
% Moisture - Method: LTM-GEN-7080 Moisture	Brisbane	Feb 28, 2023	14 Days

Company Name: Geo Design Pty Ltd
Address: 14 Danbullan Street
Smithfield
QLD 4878

Project Name: 97-111 DAVIDSON ST PORT DOUGLAS
Project ID: 23003AA - D

Order No.:
Report #: 967462
Phone: 07 4038 2702
Fax:

Received: Feb 27, 2023 8:40 AM
Due: Mar 6, 2023
Priority: 5 Day
Contact Name: Christina Stallard-Smith

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail

ASS Groundwater Quality Suite - WA
Department of Environment and
Moisture Set
Chromium Suite - NASSG (Excluding ANC)

Melbourne Laboratory - NATA # 1261 Site # 1254

Brisbane Laboratory - NATA # 1261 Site # 20794

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	BH01 3.0-3.5m	Jan 30, 2023		Soil	B23-Fe0064288		X	X
2	BH01 3.5-4.0m	Jan 30, 2023		Soil	B23-Fe0064289		X	X
3	BH02 1.0-1.5m	Jan 30, 2023		Soil	B23-Fe0064290		X	X
4	BH02 1.5-2.0m	Jan 30, 2023		Soil	B23-Fe0064291		X	X
5	BH02 2.0-2.5m	Jan 30, 2023		Soil	B23-Fe0064292		X	X
6	BH02 2.5-3.0m	Jan 30, 2023		Soil	B23-Fe0064293		X	X
7	BH02 3.0-3.5m	Jan 30, 2023		Soil	B23-Fe0064294		X	X
8	BH03 3.5-4.0m	Jan 31, 2023		Soil	B23-Fe0064295		X	X
9	BH04 1.0-1.5m	Feb 03, 2023		Soil	B23-Fe0064296		X	X
10	BH04 1.5-2.0m	Feb 03, 2023		Soil	B23-Fe0064297		X	X
11	BH04 2.0-2.5m	Feb 03, 2023		Soil	B23-Fe0064298		X	X
12	BH04 2.5-3.0m	Feb 03, 2023		Soil	B23-Fe0064299		X	X

Company Name: Geo Design Pty Ltd
Address: 14 Danbullan Street
Smithfield
QLD 4878

Project Name: 97-111 DAVIDSON ST PORT DOUGLAS
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Order No.:
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Received: Feb 27, 2023 8:40 AM
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Sample Detail

ASS Groundwater Quality Suite - WA
Department of Environment and
Moisture Set
Chromium Suite - NASSG (Excluding ANC)

Melbourne Laboratory - NATA # 1261 Site # 1254

Brisbane Laboratory - NATA # 1261 Site # 20794

13	BH04 3.0-3.5m	Feb 03, 2023		Soil	B23-Fe0064300		X	X
14	BH04 3.5-4.0m	Feb 03, 2023		Soil	B23-Fe0064301		X	X
15	BH05 3.0-3.5m	Feb 03, 2023		Soil	B23-Fe0064302		X	X
16	BH06 3.5-4.0m	Feb 06, 2023		Soil	B23-Fe0064303		X	X
17	BH02	Jan 30, 2023		Water	B23-Fe0064304	X		
Test Counts						1	16	16

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery										
Actual Acidity (NLM-3.2)										
pH-KCL (NLM-3.1)				%	90			80-120	Pass	
Titratable Actual Acidity (NLM-3.2)				%	84			80-120	Pass	
LCS - % Recovery										
Potential Acidity - Chromium Reducible Sulfur										
Chromium Reducible Sulfur (s-SCr) (NLM-2.1)				%	107			80-120	Pass	
LCS - % Recovery										
Extractable Sulfur										
HCl Extractable Sulfur				%	105			80-120	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
Net Acidity (Excluding ANC)					Result 1	Result 2	RPD			
CRS Suite - Net Acidity - NASSG (Excluding ANC)	B23-Fe0064288	CP	% S		< 0.02	N/A	N/A	30%	Pass	
CRS Suite - Net Acidity - NASSG (Excluding ANC)	B23-Fe0064288	CP	mol H+/t		< 10	N/A	N/A	20%	Pass	
CRS Suite - Liming Rate - NASSG (Excluding ANC)	B23-Fe0064288	CP	kg CaCO ₃ /t		< 1	N/A	N/A	30%	Pass	
Duplicate										
Actual Acidity (NLM-3.2)					Result 1	Result 2	RPD			
pH-KCL (NLM-3.1)	B23-Fe0064288	CP	pH Units		5.8	5.7	<1	20%	Pass	
Titratable Actual Acidity (NLM-3.2)	B23-Fe0064288	CP	mol H+/t		< 2	< 2	<1	20%	Pass	
Titratable Actual Acidity (NLM-3.2)	B23-Fe0064288	CP	% pyrite S		< 0.003	< 0.003	<1	30%	Pass	
Duplicate										
Potential Acidity - Chromium Reducible Sulfur					Result 1	Result 2	RPD			
Chromium Reducible Sulfur (s-SCr) (NLM-2.1)	B23-Fe0064288	CP	% S		0.007	0.007	<1	20%	Pass	
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	B23-Fe0064288	CP	mol H+/t		4.1	4.1	<1	30%	Pass	
Duplicate										
Extractable Sulfur					Result 1	Result 2	RPD			
Sulfur - KCl Extractable	B23-Fe0064288	CP	% S		N/A	N/A	N/A	30%	Pass	
HCl Extractable Sulfur	B23-Fe0064288	CP	% S		N/A	N/A	N/A	20%	Pass	
Duplicate										
Retained Acidity (S-NAS)					Result 1	Result 2	RPD			
Net Acid soluble sulfur (SNAS) NLM-4.1	B23-Fe0064288	CP	% S		N/A	N/A	N/A	30%	Pass	
Net Acid soluble sulfur (s-SNAS) NLM-4.1	B23-Fe0064288	CP	% S		N/A	N/A	N/A	30%	Pass	
Net Acid soluble sulfur (a-SNAS) NLM-4.1	B23-Fe0064288	CP	mol H+/t		N/A	N/A	N/A	30%	Pass	
Duplicate										
Acid Neutralising Capacity (ANCbt)					Result 1	Result 2	RPD			
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	B23-Fe0064288	CP	% CaCO ₃		N/A	N/A	N/A	20%	Pass	
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2)	B23-Fe0064288	CP	% S		N/A	N/A	N/A	30%	Pass	
ANC Fineness Factor	B23-Fe0064288	CP	factor		1.5	1.5	<1	30%	Pass	
Duplicate										
Net Acidity (Including ANC)					Result 1	Result 2	RPD			
CRS Suite - Net Acidity - NASSG (Including ANC)	B23-Fe0064288	CP	% S		< 0.02	< 0.02	<1	30%	Pass	
CRS Suite - Net Acidity - NASSG (Including ANC)	B23-Fe0064288	CP	mol H+/t		< 10	< 10	<1	30%	Pass	
CRS Suite - Liming Rate - NASSG (Including ANC)	B23-Fe0064288	CP	kg CaCO ₃ /t		< 1	< 1	<1	30%	Pass	

Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	B23-Fe0064288	CP	%	24	22	5.8	30%	Pass
Duplicate								
Net Acidity (Excluding ANC)				Result 1	Result 2	RPD		
CRS Suite - Net Acidity - NASSG (Excluding ANC)	B23-Fe0064298	CP	% S	0.09	N/A	N/A	30%	Pass
CRS Suite - Net Acidity - NASSG (Excluding ANC)	B23-Fe0064298	CP	mol H+/t	55	N/A	N/A	20%	Pass
CRS Suite - Liming Rate - NASSG (Excluding ANC)	B23-Fe0064298	CP	kg CaCO ₃ /t	4.2	N/A	N/A	30%	Pass
Duplicate								
Actual Acidity (NLM-3.2)				Result 1	Result 2	RPD		
pH-KCL (NLM-3.1)	B23-Fe0064298	CP	pH Units	4.5	4.5	<1	20%	Pass
Titrateable Actual Acidity (NLM-3.2)	B23-Fe0064298	CP	mol H+/t	21	21	2.5	20%	Pass
Titrateable Actual Acidity (NLM-3.2)	B23-Fe0064298	CP	% pyrite S	0.033	0.034	2.5	30%	Pass
Duplicate								
Potential Acidity - Chromium Reducible Sulfur				Result 1	Result 2	RPD		
Chromium Reducible Sulfur (s-SCr) (NLM-2.1)	B23-Fe0064298	CP	% S	0.055	0.053	<1	20%	Pass
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	B23-Fe0064298	CP	mol H+/t	35	33	3.9	30%	Pass
Duplicate								
Extractable Sulfur				Result 1	Result 2	RPD		
Sulfur - KCl Extractable	B23-Fe0064298	CP	% S	0.010	0.010	1.6	30%	Pass
HCl Extractable Sulfur	B23-Fe0064298	CP	% S	0.014	0.014	<1	20%	Pass
Duplicate								
Retained Acidity (S-NAS)				Result 1	Result 2	RPD		
Net Acid soluble sulfur (SNAS) NLM-4.1	B23-Fe0064298	CP	% S	0.007	0.007	2.3	30%	Pass
Net Acid soluble sulfur (s-SNAS) NLM-4.1	B23-Fe0064298	CP	% S	0.006	0.005	2.3	30%	Pass
Net Acid soluble sulfur (a-SNAS) NLM-4.1	B23-Fe0064298	CP	mol H+/t	3.4	3.4	2.3	30%	Pass
Duplicate								
Acid Neutralising Capacity (ANCbt)				Result 1	Result 2	RPD		
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	B23-Fe0064298	CP	% CaCO ₃	N/A	N/A	N/A	20%	Pass
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2)	B23-Fe0064298	CP	% S	N/A	N/A	N/A	30%	Pass
ANC Fineness Factor	B23-Fe0064298	CP	factor	1.5	1.5	<1	30%	Pass
Duplicate								
Net Acidity (Including ANC)				Result 1	Result 2	RPD		
CRS Suite - Net Acidity - NASSG (Including ANC)	B23-Fe0064298	CP	% S	0.09	0.09	4.5	30%	Pass
CRS Suite - Net Acidity - NASSG (Including ANC)	B23-Fe0064298	CP	mol H+/t	55	58	4.5	30%	Pass
CRS Suite - Liming Rate - NASSG (Including ANC)	B23-Fe0064298	CP	kg CaCO ₃ /t	4.2	4.3	4.5	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	B23-Fe0064298	CP	%	22	23	1.5	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	N/A
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
S01	Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO ₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m ³ in-situ soil' multiply 'reported results' x 'wet bulk density of soil in t/m ³ '
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5
S03	Acid Neutralising Capacity is only required if the pHKCl is greater than or equal to pH 6.5
S04	Acid Sulfate Soil Samples have a 24 hour holding time unless frozen or dried within that period

Authorised by:

Paige Howarth	Analytical Services Manager
Jonathon Angell	Senior Analyst-Sample Properties
Jonathon Angell	Senior Analyst-SPOCAS



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Geo Design Pty Ltd
14 Danbullan Street
Smithfield
QLD 4878



NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: **Christina Stallard-Smith**

Report **967462-W**
Project name **97-111 DAVIDSON ST PORT DOUGLAS**
Project ID **23003AA - D**
Received Date **Feb 27, 2023**

Client Sample ID			BH02
Sample Matrix			Water
Eurofins Sample No.			B23-Fe0064304
Date Sampled			Jan 30, 2023
Test/Reference	LOR	Unit	
Acidity (as CaCO ₃)	10	mg/L	< 10
Ammonia (as N)	0.01	mg/L	0.63
Chloride	1	mg/L	200
Conductivity (at 25 °C)	10	uS/cm	700
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05
pH (at 25 °C)	0.1	pH Units	7.7
Phosphate total (as P)	0.01	mg/L	0.14
Phosphorus filterable reactive (as P)	0.01	mg/L	0.15
Sulphate (as S)	5	mg/L	7.3
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	500
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.6
Total Nitrogen (as N)*	0.2	mg/L	2.6
Alkalinity (speciated)			
Total Alkalinity (as CaCO ₃)	20	mg/L	6000
Heavy Metals			
Aluminium	0.05	mg/L	15
Aluminium (filtered)	0.05	mg/L	0.07
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Iron	0.05	mg/L	9.4
Iron (filtered)	0.05	mg/L	0.09
Manganese (filtered)	0.005	mg/L	0.12
Nickel (filtered)	0.001	mg/L	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001
Zinc (filtered)	0.005	mg/L	0.11
Alkali Metals			
Sodium	0.5	mg/L	110

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
ASS Groundwater Quality Suite - WA Department of Environment and Conservation			
Acidity (as CaCO ₃) - Method: LTM-INO-4210 Acidity	Melbourne	Mar 01, 2023	14 Days
Ammonia (as N) - Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA	Melbourne	Mar 01, 2023	28 Days
Chloride - Method: LTM-INO-4090 Chloride by Discrete Analyser	Brisbane	Mar 01, 2023	28 Day
Conductivity (at 25 °C) - Method: APHA 2510B	Brisbane	Mar 02, 2023	28 Days
pH (at 25 °C) - Method: APHA 4500-H+ B. Electrometric Method	Brisbane	Mar 02, 2023	0 Days
Phosphate total (as P) - Method: LTM-INO-4040 Phosphate by CFA	Melbourne	Mar 01, 2023	28 Days
Phosphorus filterable reactive (as P) - Method: APHA 4500-P Phosphate (filterable reactive)	Melbourne	Mar 01, 2023	2 Days
Sulphate (as S) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Mar 01, 2023	28 Days
Total Dissolved Solids Dried at 180 °C ± 2 °C - Method: APHA 2540 C	Brisbane	Mar 06, 2023	7 Days
Alkalinity (speciated) - Method: LTM-INO-4250 Alkalinity by Electrometric Titration	Melbourne	Mar 01, 2023	14 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Brisbane	Mar 01, 2023	28 Days
Acid Sulphate Metals : Metals M9 filtered - Method: USEPA 6010/6020 Heavy Metals	Brisbane	Mar 17, 2023	180 Days
Alkali Metals - Method: USEPA 6010 Alkali Metals	Brisbane	Mar 01, 2023	180 Days
Total Nitrogen Set (as N)			
Nitrate & Nitrite (as N) - Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA	Melbourne	Mar 01, 2023	28 Days
Total Kjeldahl Nitrogen (as N) - Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA	Melbourne	Mar 01, 2023	28 Days

Company Name: Geo Design Pty Ltd
Address: 14 Danbullan Street
Smithfield
QLD 4878

Project Name: 97-111 DAVIDSON ST PORT DOUGLAS
Project ID: 23003AA - D

Order No.:
Report #: 967462
Phone: 07 4038 2702
Fax:

Received: Feb 27, 2023 8:40 AM
Due: Mar 6, 2023
Priority: 5 Day
Contact Name: Christina Stallard-Smith

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail

ASS Groundwater Quality Suite - WA
Department of Environment and
Moisture Set
Chromium Suite - NASSG (Excluding ANC)

Melbourne Laboratory - NATA # 1261 Site # 1254

Brisbane Laboratory - NATA # 1261 Site # 20794

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	BH01 3.0-3.5m	Jan 30, 2023		Soil	B23-Fe0064288		X	X
2	BH01 3.5-4.0m	Jan 30, 2023		Soil	B23-Fe0064289		X	X
3	BH02 1.0-1.5m	Jan 30, 2023		Soil	B23-Fe0064290		X	X
4	BH02 1.5-2.0m	Jan 30, 2023		Soil	B23-Fe0064291		X	X
5	BH02 2.0-2.5m	Jan 30, 2023		Soil	B23-Fe0064292		X	X
6	BH02 2.5-3.0m	Jan 30, 2023		Soil	B23-Fe0064293		X	X
7	BH02 3.0-3.5m	Jan 30, 2023		Soil	B23-Fe0064294		X	X
8	BH03 3.5-4.0m	Jan 31, 2023		Soil	B23-Fe0064295		X	X
9	BH04 1.0-1.5m	Feb 03, 2023		Soil	B23-Fe0064296		X	X
10	BH04 1.5-2.0m	Feb 03, 2023		Soil	B23-Fe0064297		X	X
11	BH04 2.0-2.5m	Feb 03, 2023		Soil	B23-Fe0064298		X	X
12	BH04 2.5-3.0m	Feb 03, 2023		Soil	B23-Fe0064299		X	X

Company Name: Geo Design Pty Ltd
Address: 14 Danbullan Street
Smithfield
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Project Name: 97-111 DAVIDSON ST PORT DOUGLAS
Project ID: 23003AA - D

Order No.:
Report #: 967462
Phone: 07 4038 2702
Fax:

Received: Feb 27, 2023 8:40 AM
Due: Mar 6, 2023
Priority: 5 Day
Contact Name: Christina Stallard-Smith

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail

Chromium Suite - NASSG (Excluding ANC)
Moisture Set
ASS Groundwater Quality Suite - WA
Department of Environment and

Melbourne Laboratory - NATA # 1261 Site # 1254						X		
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X	X
13	BH04 3.0-3.5m	Feb 03, 2023		Soil	B23-Fe0064300		X	X
14	BH04 3.5-4.0m	Feb 03, 2023		Soil	B23-Fe0064301		X	X
15	BH05 3.0-3.5m	Feb 03, 2023		Soil	B23-Fe0064302		X	X
16	BH06 3.5-4.0m	Feb 06, 2023		Soil	B23-Fe0064303		X	X
17	BH02	Jan 30, 2023		Water	B23-Fe0064304	X		
Test Counts						1	16	16

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with **blue** colour, indicates data provided by customer that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Sulphate (as S)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Alkalinity (speciated)							
Total Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Ammonia (as N)	%	86			70-130	Pass	
Chloride	%	113			70-130	Pass	
Nitrate & Nitrite (as N)	%	118			70-130	Pass	
Phosphate total (as P)	%	116			70-130	Pass	
Sulphate (as S)	%	116			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	93			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	92			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Total Alkalinity (as CaCO ₃)	%	73			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	97			80-120	Pass	
Aluminium (filtered)	%	91			80-120	Pass	
Arsenic (filtered)	%	106			80-120	Pass	
Cadmium (filtered)	%	101			80-120	Pass	
Chromium (filtered)	%	102			80-120	Pass	
Iron	%	104			80-120	Pass	
Iron (filtered)	%	101			80-120	Pass	
Manganese (filtered)	%	99			80-120	Pass	
Nickel (filtered)	%	99			80-120	Pass	
Selenium (filtered)	%	98			80-120	Pass	
Zinc (filtered)	%	98			80-120	Pass	
LCS - % Recovery							
Alkali Metals							
Sodium	%	90			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chloride	B23-Fe0060360	NCP	%	113			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M23-Ma0001203	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Heavy Metals									
				Result 1					
Aluminium	B23-Ma0000030	NCP	%	98			75-125	Pass	
Aluminium (filtered)	B23-Ma0001174	NCP	%	102			75-125	Pass	
Arsenic (filtered)	B23-Fe0060276	NCP	%	125			75-125	Pass	
Cadmium (filtered)	B23-Ma0001174	NCP	%	101			75-125	Pass	
Chromium (filtered)	B23-Ma0001174	NCP	%	97			75-125	Pass	
Iron	B23-Ma0000030	NCP	%	83			75-125	Pass	
Iron (filtered)	B23-Ma0001174	NCP	%	90			75-125	Pass	
Manganese (filtered)	B23-Ma0001174	NCP	%	96			75-125	Pass	
Nickel (filtered)	B23-Ma0001174	NCP	%	89			75-125	Pass	
Selenium (filtered)	B23-Ma0001174	NCP	%	96			75-125	Pass	
Zinc (filtered)	B23-Ma0001174	NCP	%	87			75-125	Pass	
Spike - % Recovery									
Alkali Metals									
				Result 1					
Sodium	B23-Ma0037426	NCP	%	89			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S23-Fe0064419	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Chloride	B23-Fe0060360	NCP	mg/L	190	190	1.2	30%	Pass	
Conductivity (at 25 °C)	B23-Fe0063931	NCP	uS/cm	18000	18000	1.2	30%	Pass	
Nitrate & Nitrite (as N)	S23-Fe0064419	NCP	mg/L	0.33	0.33	<1	30%	Pass	
pH (at 25 °C)	B23-Fe0064138	NCP	pH Units	8.1	8.1	<1	30%	Pass	
Phosphate total (as P)	W23-Fe0061607	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Sulphate (as S)	M23-Ma0001695	NCP	mg/L	9.4	9.6	2.6	30%	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	B23-Fe0064140	NCP	mg/L	3900	3700	2.9	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B23-Fe0064304	CP	mg/L	2.6	2.4	7.9	30%	Pass	
Duplicate									
Heavy Metals									
				Result 1	Result 2	RPD			
Aluminium	B23-Fe0060276	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	B23-Ma0001173	NCP	mg/L	0.18	0.17	5.1	30%	Pass	
Arsenic (filtered)	B23-Ma0001173	NCP	mg/L	0.002	0.002	1.4	30%	Pass	
Cadmium (filtered)	B23-Ma0001173	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	B23-Ma0001173	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	B23-Fe0060276	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Iron (filtered)	B23-Ma0001173	NCP	mg/L	0.29	0.29	1.7	30%	Pass	
Manganese (filtered)	B23-Ma0001173	NCP	mg/L	0.032	0.032	<1	30%	Pass	
Nickel (filtered)	B23-Ma0001173	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium (filtered)	B23-Ma0001173	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	B23-Ma0001173	NCP	mg/L	0.008	0.008	1.8	30%	Pass	
Duplicate									
Alkali Metals									
				Result 1	Result 2	RPD			
Sodium	B23-Fe0060276	NCP	mg/L	2600	2700	1.6	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	N/A
Some samples have been subcontracted	No

Authorised by:

Paige Howarth	Analytical Services Manager
Jonathon Angell	Senior Analyst-Inorganic
Jonathon Angell	Senior Analyst-Metal
Scott Beddoes	Senior Analyst-Inorganic



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Attachment 8

Flood Study



DEVELOPMENT & PROPERTY SERVICES

The Davidson by GURNER™
Luxury Hotel and Private
Homes
- Hydraulic Report

Final Report
24 April 2023

GURNER™
GROUP

HUNT
DESIGN

JBP Project Manager

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Revision History

Revision Ref / Date Issued	Amendments	Issued to
Final 13/04/2023		GH
Final 24/04/2023		GH and GURNER™

Contract

This report describes work commissioned by Gary Hunt, on behalf of Hunt Design, by an email dated 6th, 7th and 9th December 2022. Lauchlan Bye of JBP carried out this work.

Prepared by Lauchlan Bye BEng MSc
Hydrologist – Hydraulic Engineer

Reviewed by Eoghain O'Hanlon, BSc MPhil
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Director

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The methodology adopted and the sources of information used by JBP in providing its services are outlined in this report. The work described in this report was undertaken between January 2023 and April 2023 and is based on the conditions encountered and the information available during this period of time. The scope of this report and the services are accordingly factually limited by these circumstances.

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Trading as Jeremy Benn Pacific and JBP Scientists and Engineers

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Executive Summary

JBPacific were commissioned by GURNER™ and Hunt Design to undertake a flood study of the Packers Creek catchment for the proposed The Davidson by GURNER™ which is for a Luxury Hotel and Private Homes. This involved investigating the proposed developments vulnerability to flooding and storm tide inundation and to investigate the impact the development might have on surrounding properties. The project involved data collection, hydrological analysis, hydraulic modelling and storm tide assessment.

Data obtained for the study included topographic and bathymetry data, survey levels of the current site and proposed development design and data from the Tide Inundation Methodologies Study (JBP, 2020).

The hydrological modelling was conducted using a hydrological model developed in the Unified River Basin Simulator (URBS) software. The catchment was delineated into sub-catchments to be used in the URBS model. The URBS Initial Loss (IL) and Continuing Loss (CL) were obtained from the 2021 Mowbray Flood Study. Given the absence of a gauging station in the study area, the model was validated using the Quantile Regression Technique (QRT). URBS and QRT peak flows were compared at the sub-catchments for the site of interest. At the site location, the URBS model had a flow of 372.3 m³/s and QRT had a flow of 369.1 m³/s. Temporal patterns and design rain inputs were taken from were obtained from the ARR DataHub. These were used to create the 1% AEP design rainfalls for the current and 2100 climate which were used in URBS to create the design flows for the hydraulic model.

The hydraulic analysis was undertaken in TUFLOW to define the flood extent and peak flood levels. Hydraulic model roughness was defined using land use data set obtained from the DSC Planning Scheme. The ocean boundary was set 900m offshore from the Packers Creek entrance to simulate ocean inflows. Inflow hydrographs for the design hydraulic model simulations. Durations and temporal patterns were obtained for every design AEP for sub-catchments representing the site location, outlet and upstream conditions. Simulations were run for a critical duration of 36 hours with ensemble 8 and a critical duration of 3 hours and ensemble 1. Rainfall intensity was projected to represent a 2100 horizon under the RCP8.5 pathway.

Maps of flood depth and water level were produced for the undeveloped, developed and 2100 climate case. The flood mapping showed that the proposed extent of the site was not impacted by flood waters for any of the modelled cases. The 2100 climate case had a small area of depth at the proposed entry to the underground parking. This was caused by the global initial water level being applied within the car park, this is not a concern in terms of the flooding for the site. Storm tide maps also indicated that storm tide flooding would not reach the site for the current and 2100 climate. An afflux map was created that compared the existing and developed case. The afflux map indicated no change, meaning that surrounding properties would not be adversely impacted by the development.

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Abbreviations

AEP	Annual Exceedance Probability
ARI	Average Recurrence Interval
CL	Continuing Loss
DEM	Digital Elevation Model
ELVIS.....	Elevation Information System
GCMs.....	Global Climate Models
HPC	Heavily Parallelised Computing
IL	Initial Loss
LiDAR.....	Light Detection and Ranging
QRT	Quantile Regression Technique
STIMS	Storm Tide Inundation Methodologies Study
URBS	Unified River Basin Simulator

1 Introduction

This project was undertaken by JBPacific on behalf of GURNER™ and Hunt Design to develop a new flood study for the proposed development of The Davidson by GURNER™, Luxury Hotel and Private Homes. The site location is in Port Douglas, located in the Packers Creek catchment in Far North Queensland. The project included analysis of extreme rainfall, catchment delineation, hydrology modelling, hydraulic modelling and a flood risk assessment. The project has involved the creation of the base case scenario before revising it to become the developed scenario with the proposed development design topography included. These scenarios were modelled for both current climate and with the 2100 climate horizon under the RCP8.5 pathway. The project modelled the storm surge for the current climate and the 2100 climate. The study investigated whether the developed finished surface will cause impacts to surrounding areas and determined the required finished floor levels to provide adequate freeboard. This includes a comparison of the developed case TUFLOW model to the peak flood water level surfaces of the existing cases.

1.1 Proposed Development

The Davidson by GURNER™, Luxury Hotel and Private Homes includes a large central three-story building surrounded by multiple two-story accommodation units. The site also contains shared amenities, recreational facilities and underground parking. The proposed design layout is provided in Appendix A.

2 Available data

2.1 Existing Flood Model Data

2.1.1 Storm Tide Inundation Methodologies Study (2020)

A Storm Tide Inundation Methodologies Study (STIMS) was completed by JBPacific in 2020. This mapped storm tide inundation throughout the LGA, considering the effects of vegetation and coastal systems. The outputs included inundation depth maps and depth grids for each scenario. The study area included Port Douglas where the site is located. The study has been used to support the assessment of flood behaviour in the lower Packers Creek catchment.

2.2 Topographic Data

A combination of several topographic and bathymetric datasets are available for this project (Figure 2-1):

- **Topographic Data:** A Light Detection and Ranging (LiDAR) 1m resolution data set was downloaded from Geoscience Australia's Elevation Information System (ELVIS). Where the 1m data set was not available, Elevation data above mean sea level is available through the QLD 5m LiDAR Digital Elevation Model (DEM). The 5m LiDAR DEM has been sourced from more than 200 individual LiDAR surveys conducted between 2001 and 2015¹.
- **Bathymetric Data:** Offshore bathymetry was obtained between the coastline to the outer Great Barrier Reef by the DeepReef 30m dataset². The GBR30 bathymetric dataset was developed in collaboration between James Cook University, Geoscience Australia, and the Australian Hydrographic Office to compile all available digital bathymetry data to develop regional-scale, 30m resolution grids. This contains deep-water multibeam surveys, airborne lidar bathymetry and chart data, all edited as point clouds to remove noise, and merged into a consistent WGS84 horizontal datum, and an approximate mean sea level vertical datum.

¹ Geoscience Australia 2015. Digital Elevation Model (DEM) of Australia derived from LiDAR 5 Metre Grid. Geoscience Australia, Canberra. <http://pid.geoscience.gov.au/dataset/ga/89644>

² Beaman, R.J. (2018) "100/30 m-resolution bathymetry grids for the Great Barrier Reef", SSSI Hydrography Commission Seminar, March 2018. Surveying and Spatial Sciences Institute (SSSI), Canberra, Australia.

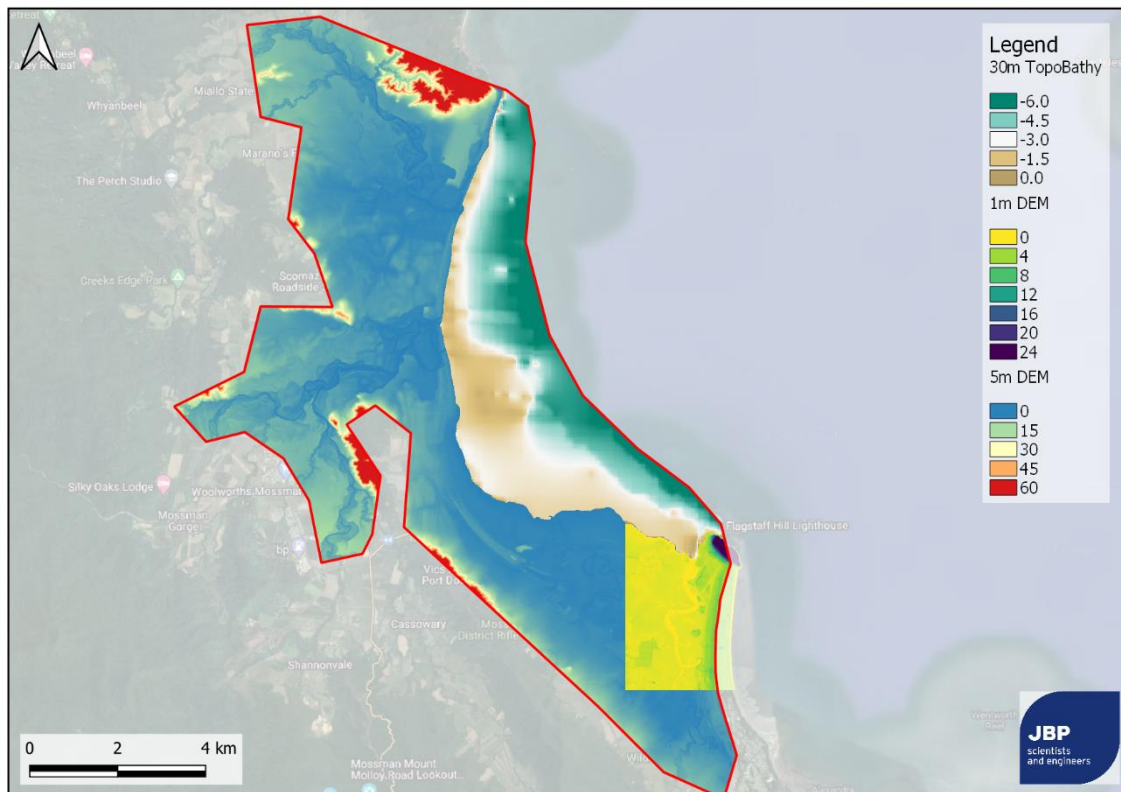


Figure 2-1. Overview of topographic information available within the catchment

2.3 Site Survey Data

Survey data was supplied by the client providing the existing elevations at the site and the proposed design elevations for the proposed development ground level. The survey data were converted into elevation maps to be included in the base and developed model case. The elevation of the proposed development is shown in Figure 2-2.

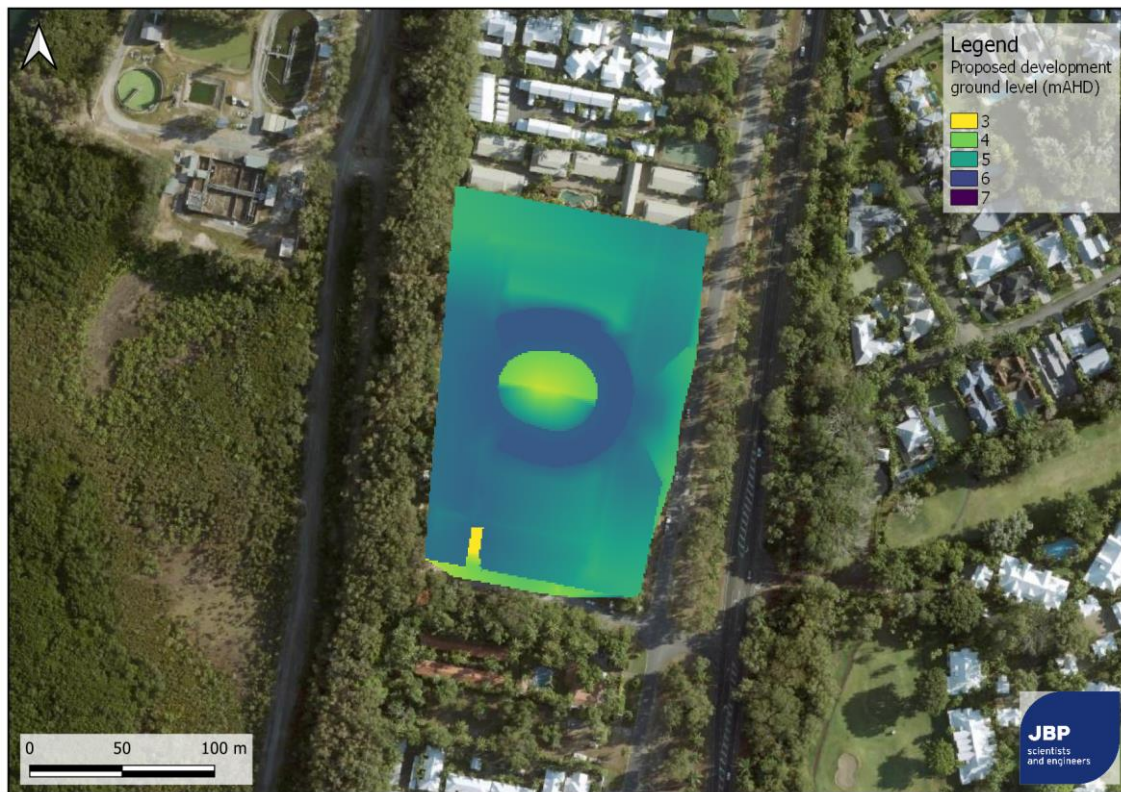


Figure 2-2. Ground level elevation of the proposed development

2.4 Coastal Processes Information

2.4.1 Tide levels

Tidal levels have been sourced from the Maritime Safety Queensland (MSQ) Queensland tide tables 2021 for Port Douglas and are shown in Table 2-1

Table 2-1: Tide levels at Port Douglas

Tide level	2021 (mLAT)	2021 (mAHD)*
HAT	3.36	1.78
MHWS	2.49	0.91
MHWN	1.83	0.25
MSL	1.6	0.02
MLWN	1.37	-0.21
MLWS	0.7	-0.88
PSM10077	6.058	4.48
AHD	1.58	0.00
LAT	0	-1.58

*: AHD quoted based on Permanent Mark 10077, referenced from Queensland Globe.

3 Hydrological Analysis

3.1 Overview

The Packers Creek catchment covers an area of approximately 20.4 km². The catchment topography has a maximum elevation of approximately 380 mAHD towards the south, which falls to sea level at the creek entrance.

3.2 URBS Model Configuration

Catchment-wide hydrologic conditions have been analysed using a hydrological model developed in the Unified River Basin Simulator (URBS) software. URBS is a semi-distributed nonlinear rainfall-runoff model, which combines the rainfall-runoff and runoff routing components of the modelling process and allows users to configure the model to match the characteristics of individual catchments.

URBS has the ability to simulate large river basins, split catchment hydrological processes and undertake ARR2019 ensemble temporal pattern modelling. Adopting URBS for the hydrologic analysis is consistent with industry-standard approaches and provides a robust method to estimating rainfall-runoff across the catchment.

3.3 Digital Elevation Model

The catchment extent included a combination of 1m and 5m resolution LiDAR DEM tiles and 30m bathymetry data, as summarised within Section 2.2. DEM tiles were sourced from recent model setups completed for the catchment and the Geoscience Australia's Elevation Information System (ELVIS).

3.4 Catchment Delineation

The catchment was delineated into sub-catchments to be used in the URBS model. The catchment delineation is shown in Figure 3-1. A summary of the sub-catchment information used in the URBS model schematisation is provided in Table 3-1.

Table 3-1: Sub-catchment parameters

Model	Number of sub-catchments	Maximum sub-catchment area	Minimum sub-catchment area	Average sub-catchment area
URBS	40	91.3 Ha	15.7 Ha	51.0 Ha

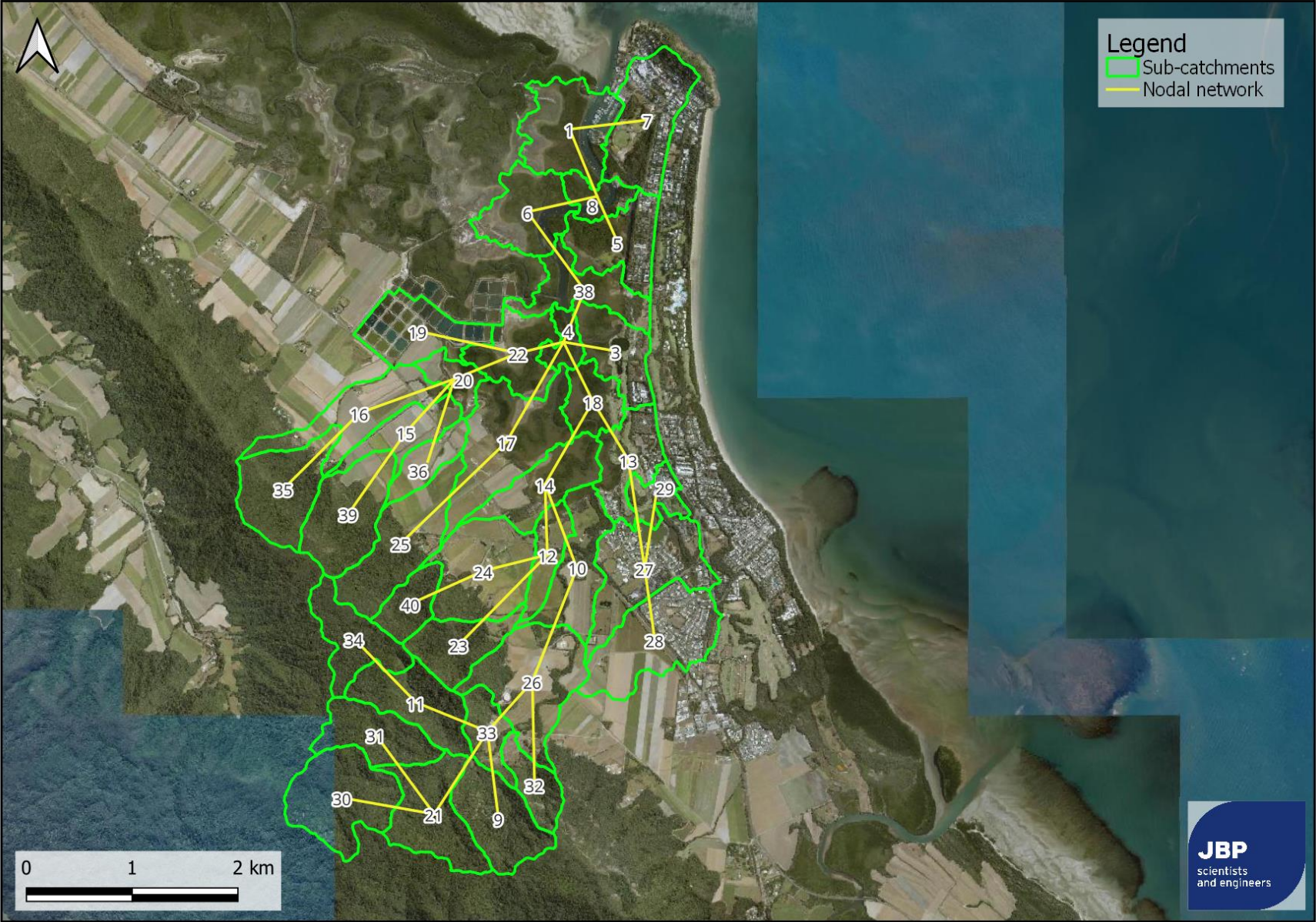


Figure 3-1. Packers Creek sub-catchment delineation

3.5 URBS Hydrology Model

The URBS model has been applied in a 'split' mode, where the effects of the sub-catchment and channel routing are calculated separately. First, the excess rainfall on a sub-catchment is routed to the creek channel, with the inflow assumed to occur at the centroid of the sub-catchment.

The lag of the sub-catchment storage is assumed proportional to the square root of the sub-catchment area. Next, the inflow is routed along a reach using a linear Muskingum method, where lag time is assumed to be proportional to the length of the reach. The following URBS parameters have been adopted:

- $\alpha = 0.006^{\#}$
- $\beta = 1.0$
- $IL = 27.5$
- $CL = 2.3$

The Initial Loss (IL) and Continuing Loss (CL) were obtained from the 2021 Mowbray Flood Study.

α is within the standard range as stream slope is being applied as a variable

3.6 URBS Model Validation

Given the absence of a stream flow gauging station within the study catchment, the model was validated using the Quantile Regression Technique (QRT). This was done at the site of interest, the catchment outlet and two locations upstream of the site. Table 3-2 shows a comparison of the flows from URBS and the QRT.

Table 3-2: URBS and QRT flows at sub-catchments of interest

Model	Sub-catchment 38 (site location)	Sub-catchment 1 (outlet)	Sub-catchment 14	Sub-catchment 26
URBS	372.3	406.9	179.9	58.5
QRT	369.1	406.5	223.0	93.2

3.7 Temporal Patterns

The ARR DataHub was used to obtain temporal rainfall pattern ensembles for the hydrologic model. Four sets of temporal patterns were obtained, which represent "frequent", "intermediate", and "rare" events and events within the areal "Wet Tropics" region for the Packers Creek catchment.

The rare temporal pattern sets contained storm durations of 15 mins, 30 mins, 45 mins, 1 hour, 1.5 hours, 2 hours, 3 hours, 4.5 hours, 6 hours, 9 hours, 12 hours, 18 hours, 24 hours, 30 hours, 36 hours, 48 hours, 72 hours, 96 hours, and 120 hours while the areal set contained storm durations of 12 hours, 18 hours, 24 hours, 36 hours, 48 hours, 72 hours, 96 hours, and 120 hours.

Each of the four temporal pattern sets contained ten ensembles for each duration. Figure 3-2 shows the variability that can be expected between storm frequencies and ensembles for a 72-hour storm duration.

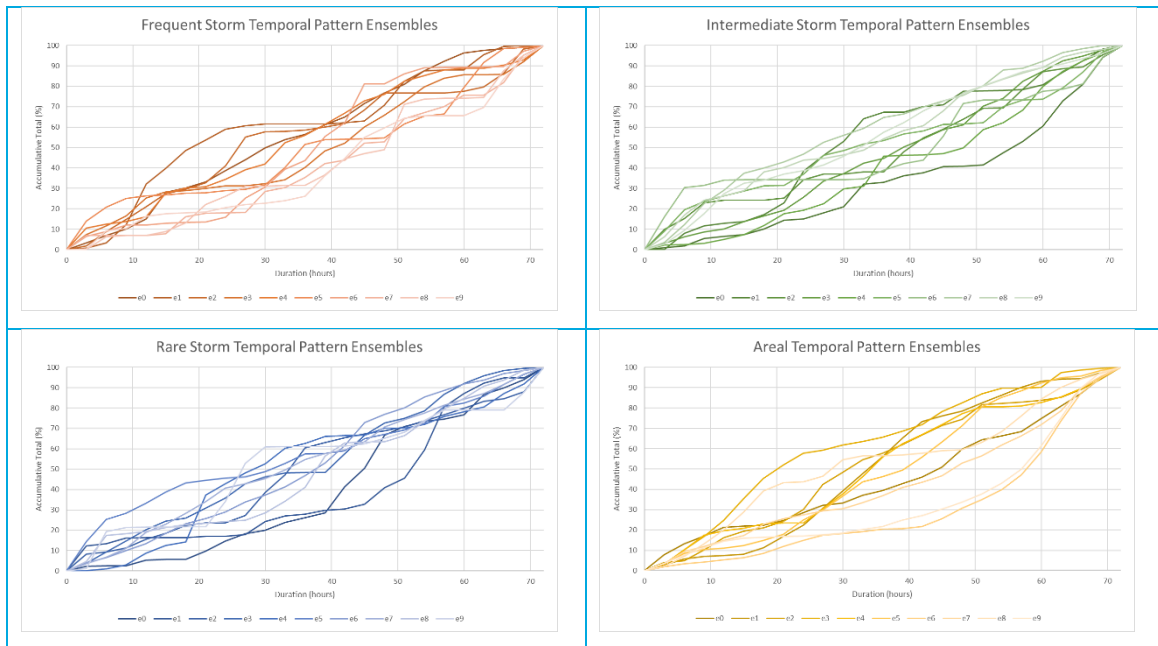


Figure 3-2. Temporal pattern ensemble variability for a 72-hour duration

3.8 ARR19 Design Rainfall Inputs

The following additional inputs are required for URBS to perform the design rainfall results and analysis. Details of these inputs can be found in the URBS manual:

- AR RTPZone = Wet Tropics
- FAF = 1
- TAF = 1
- useARF=True
- Location=Northern Coastal
- longARF = 0.326,0.223,0.442,0.323,0.0013,0.58,-0.374,0.013,-0.0015
- shortARF = 0.287,0.265,0.439,0.360,0.00226,0.226,0.125,0.0141,0.213,-0.021
- Area=20.4
- usePreBurst = TRUE
- ARI = 100
- Durations = 1hour, 2hours, 3hours, 6hours, 12hours, 18hours, 24hours, 48hours, 72hours, 96hours, 120hours

3.9 URBS ARR19 Results

Hydrological analysis was performed using URBS and data accessed from the ARR Data Hub and the BoM website. Duration hydrographs from 1 hour to 120 hours were assessed to determine critical durations at key reporting points, including the Foxton Bridge and the catchment outlet.

Figure 3-3 shows the ensemble results for each duration and return period as a box plot for the site location. The small red box is the peak flow for the selected pattern within each duration with the red line indicating the mean peak flow of all of the pattern within each duration. This indicates that the 3hr duration event is the critical duration as the selected temporal pattern results in the peak flow for the site.

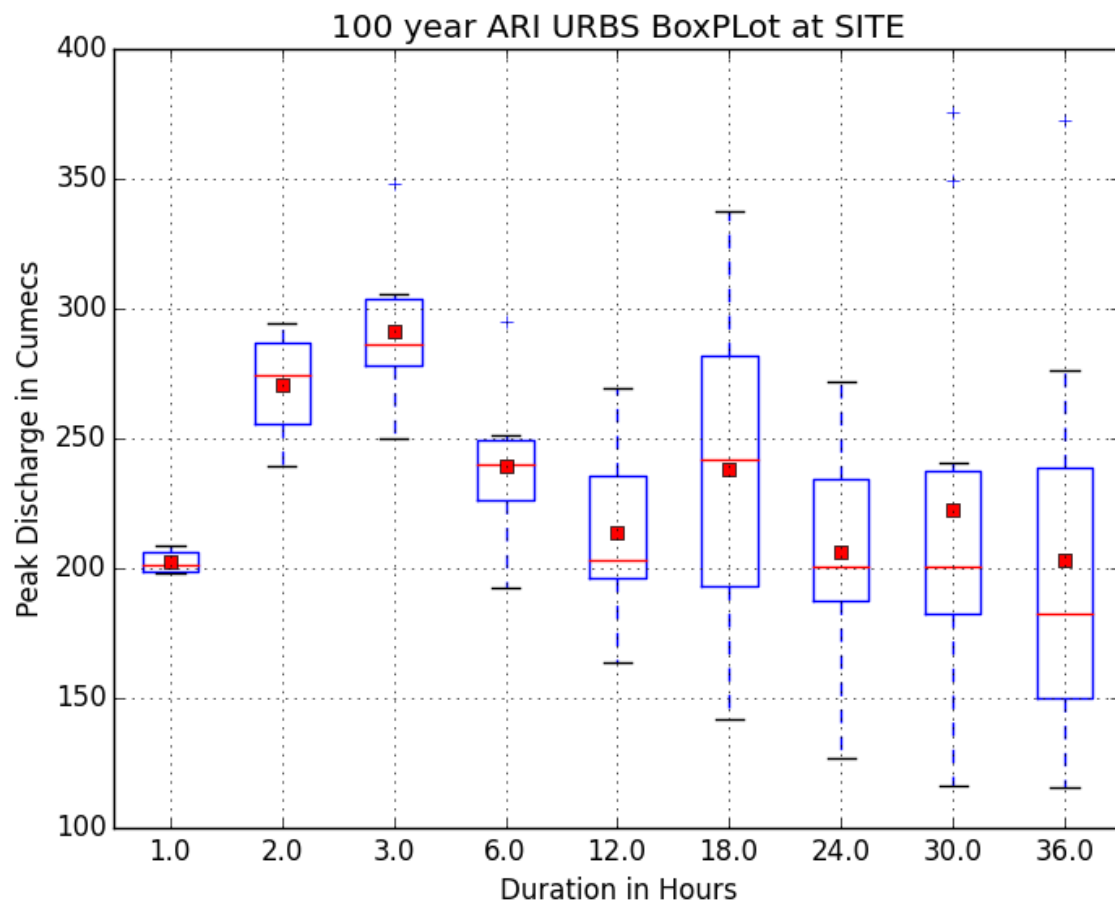


Figure 3-3. Box and whisker plot of ensemble temporal patterns modelled using URBS and reported at the site location for the 1% AEP (100 year ARI) design storm event.

4 Hydraulic Analysis

4.1 Overview

The hydrodynamic flood, tidal and storm surge processes occurring throughout the Packers Creek catchment have been simulated using hydraulic modelling software. The TUFLOW software package was used to develop a two-dimensional (2D) hydraulic model. TUFLOW version 2020-10-AB was used in its Heavily Parallelised Computing (HPC) configuration. The model grid resolution was set to 2.5m.

4.2 Hydraulic Model Setup

The model development has included the following steps:

- Establishing internal and external model boundaries (inflows and downstream outflow/tidal)
- Terrain modelling; Building a digital terrain using Light Detection and Ranging (LiDAR), DEM, and bathymetric data
- Developing a model roughness using land use maps
- Specifying model outputs

4.2.1 Boundary Conditions

The ocean boundary extends 900m offshore from the Packers Creek entrance. This is positioned away from the river mouth to remove boundary impacts on water levels whilst capturing the nearshore region and any associated sandbars.

4.2.2 Hydraulic Model Roughness

Hydraulic model roughness was defined using land use data set obtained from the DSC Planning Scheme (2018). The waterway data was created using the extent of the bathymetry data. The area beyond the river entrance clipped away from the bathymetry extent to define the ocean. The roughness classifications and Manning's values are summarised in

Table 4-1, and the spatial distribution of roughness characteristics is shown in Figure 4-1.

Table 4-1: Hydraulic roughness classification

Material ID	Classification	Hydraulic Roughness
2	Other minimal use	0.12
3	Cropping	0.035
4	Grazing native vegetation	0.035
5	Intensive animal production	0.04
6	Intensive horticulture	0.02
11	Land in transition	0.04
13	Manufacturing and industrial	0.15
14	Marsh/wetland	0.12
19	Reservoir/dam	0.03
20	Residential and farm infrastructure	0.04
21	River	0.03
22	Services	0.04
23	Transport and communication	0.02
24	Utilities	0.08
25	Waste treatment and disposal	0.08
26	Sandy beach	0.025

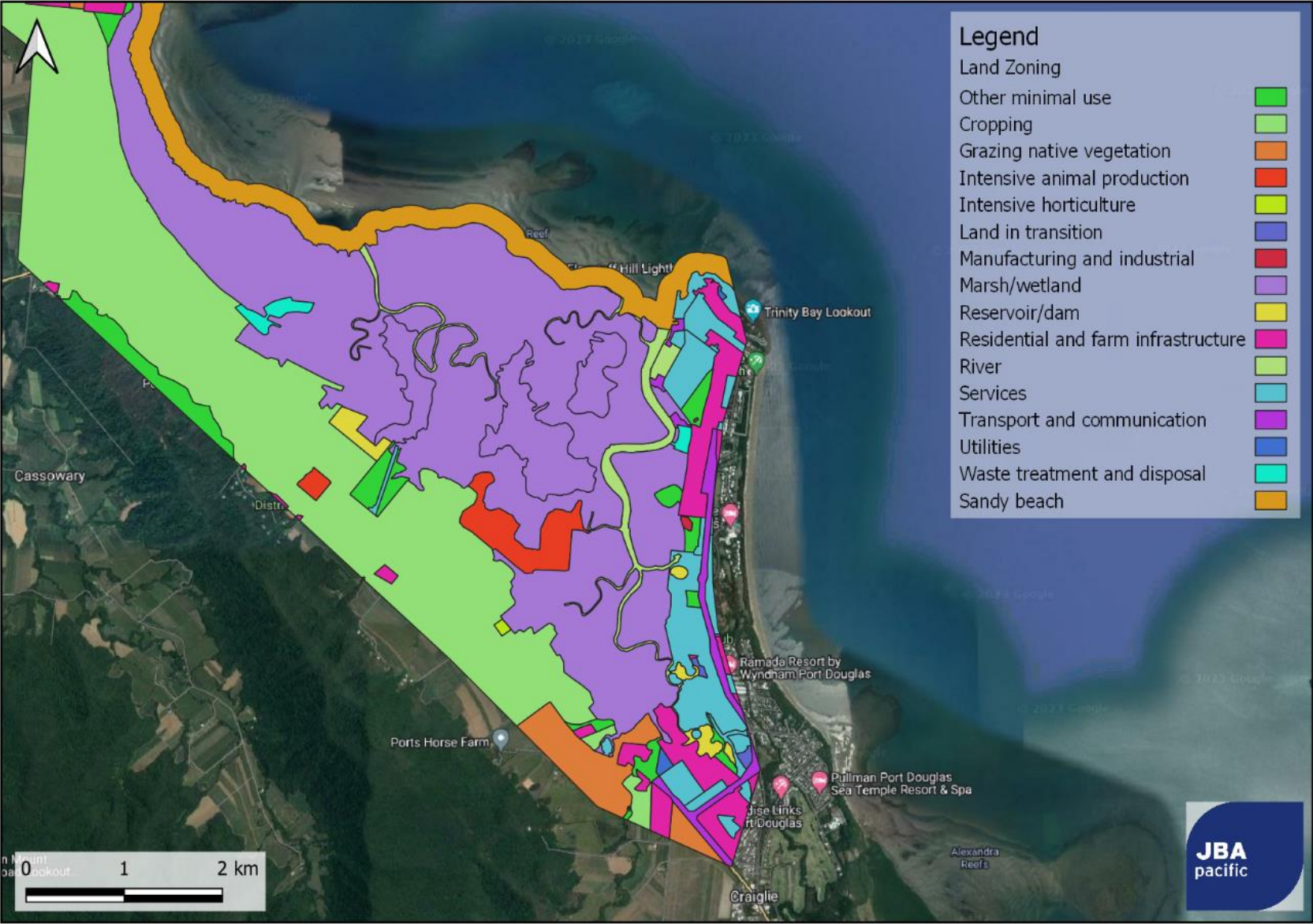


Figure 4-1: TUFLOW roughness definition

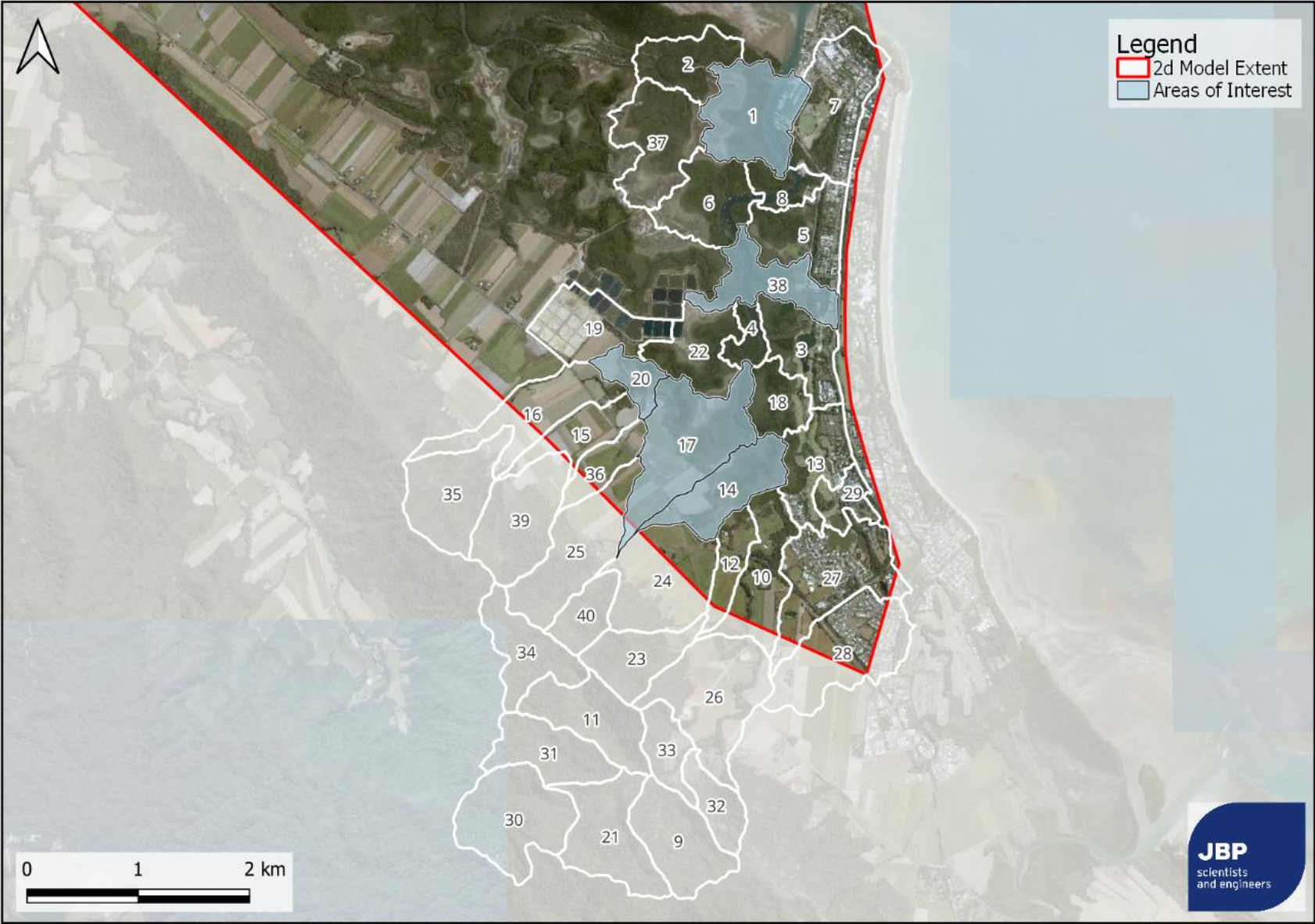


Figure 4-2: Sub-catchments used for design events

4.2.3 Design Hydraulic Model Simulations

URBS using ARR19 input parameters was used to obtain the inflow hydrographs for the design hydraulic model simulations. This was done to obtain the duration and temporal pattern for every design AEP. Parameters are obtained for each of the sub-catchments that are shown in Figure 4-2. Sub-catchment S_1 was selected as it is the outlet, S_38 was chosen as it is before the site location, and the others were selected to give a good representation of upstream peak flood conditions.

Critical durations for each reporting locations are summarised in Table 4-2, while the corresponding ensemble is summarised in Table 4-3.

Table 4-2: Summary of design hydraulic model simulations and durations

Design AEP	1%	1% CC
S_38 (Site location)	36H	36H
S_1	36H	36H
S_14	36H	36H
S_17	36H	36H
S_20	3H	3H

Table 4-3: Summary of design hydraulic model simulations and temporal ensemble members

Design AEP	1%	1% CC
S_38 (Site location)	8	8
S_1	8	8
S_14	8	8
S_17	8	8
S_20	1	1

4.3 Modelling Future Climates

To understand the impacts of climate variability on future flood risk across the catchment, rainfall intensity was projected to represent a 2100 horizon under the RCP8.5 pathway. Figure 4-3 shows four class intervals (ranges) of projected annual mean surface temperature increases for RCP 4.5 and 8.5 for the wet tropics cluster where Packers Creek catchment is located.

Temperature Class Interval (°C)				
	Slightly warmer	Warmer	Hotter	Much hotter
Year	< 0.5	0.5 to 1.5	1.5 to 3.0	> 3.0, (median)
RCP4.5 and 40 GCMs				
2040	1	38	1	
2050		37	3	
2060		29	11	
2070		25	15	
2080		24	16	
2090		23	17	
RCP8.5 and 42 GCMs				
2040		39	3	
2050		26	16	
2060		8	34	
2070			37	5 (3.1)
2080			30	12 (3.4)
2090			23	19 (3.8)

Figure 4-3: Climate futures for wet tropics cluster

Figure 4-3 shows the predicted temperature rise using Global Climate Models (GCMs) up to 2090. ARR2019 does not present predicted climate future for 2100. It was assumed that much hotter class will be the dominant climate future in 2100 after trend analysis of reported GCM scores between 2070 and 2090.

The median temperature predicted for a much hotter class requires extrapolation of supplied median temperature values as the 2100 temperature estimate is not provided in ARR2019 guidelines. Figure 4-4 shows the medium temperature increase for the much hotter class interval, which estimates a rise of 4.2 degrees Celsius.

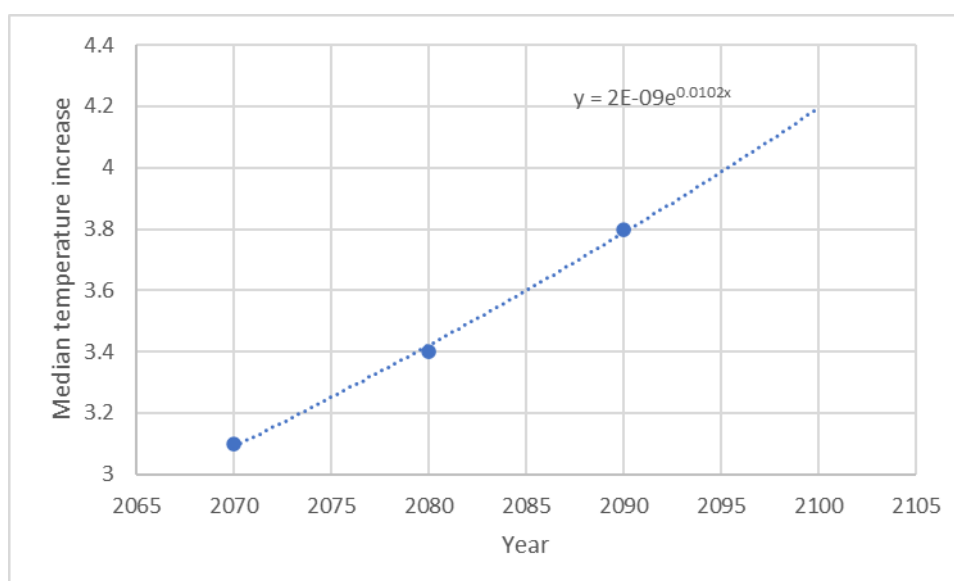


Figure 4-4: Relationship between Median temperature increase and year

For a given NRM cluster, service life or planning horizon, RCP and class interval of the projected increase in annual mean surface temperature, a projected rainfall intensity or equivalent depth (I_p) can be obtained from the following equation:

$$I_p = I_{ARR} \times 1.05^{T_m}$$

Temperature Mid Point = 4.2

$$\text{Projected Rainfall Intensity} = I_{ARR} \times 1.05^{4.2} = I_{ARR} \times 1.227$$

Where, I_{ARR} is the design rainfall intensity for current climate conditions. Using these formulae, the resulting rainfall increase projections are summarised in

Table 4-4.

Table 4-4: 2090 and 2100 planning horizon trajectories for RCP8.5

Horizon	Temperature Increase (°C)	Rainfall Increase (%)
2070 (ARR DataHub)	3.1	16.3
2080 (ARR DataHub)	3.4	18.0
2090 (ARR DataHub)	3.8	20.3
2100	4.2	22.7

Changes to sea levels have been based on those calculated in the Cairns Storm Tide Inundation Methodologies Study (JBP, 2020). The following increase was adopted for the RCP8.5 trajectory:

- 2100: +1.0mAHD Mean High Water Sea

4.4 Model Outputs

The following model outputs have been configured and are shown in Appendix B.

- Peak flood depth maps for the existing and the proposed developed, current and future climate scenarios for the 1% AEP
- Flood level maps of the existing and the proposed developed, current and future climate scenarios for the 1% AEP

The 1% AEP flood depth map is shown for the proposed developed case in Figure 4-5 and the developed case for the 2100 climate in Figure 4-6 along with the location of the development site. This shows that the flood extent does not reach the site area. Figure 4-6 shows that only a small area of flooding exists at the southwest of the site, where the entry to the underground parking is. This is due to the initial water level being applied to the underground carpark. This water has no consequence to the proposed development and the surrounding properties. The buildings nearest to the flood extent are labelled in Appendix D. The peak flood levels near each building are compared to the proposed floor level of the development in Table 4-5 which shows that all buildings are above the flood peak.

Table 4-5: Peak flood levels compared to floor level for nearby buildings

Building group number	1	2	3	4
Building elevation (mAHD)	5.5	5.6	5.15	4.67
1% AEP (mAHD)	1.47	1.47	1.46	1.46
1% AEP future climate (mAHD)	2.37	2.37	2.36	2.36



Figure 4-5: Site extent compared to the 1% AEP Design Event peak flood depth (m) for the developed case



Figure 4-6: Site extent compared to the 1% AEP Design Event peak flood depth (m) for the developed, 2100 climate case

4.5 Development Impact Assessment

An afflux map was created between the developed and existing case to assess the developments impact to surrounding areas. Figure 4-7 shows that there is no increase to water level caused by the development.



Figure 4-7: Afflux for the developed 1% AEP design event

5 Storm Tide Assessment

Storm tide flood maps were obtained from the Port Douglas Storm tide Study (JBP, 2020) and are available in Appendix C. The maps simulate the impacts of tides and storm surge for the 1% AEP (Figure 5-1) and the 2100 climate 1% AEP (Figure 5-2). The site is not impacted by storm surge for the 1% AEP. A small area of the site is impacted by the 2100 storm tide at the northwest of the site with a maximum depth of depth of 0.018m. The Port Douglas Storm tide Study did not include the updated elevation of the developed case. As the ground level of the developed case is approximately 1.8m higher than the undeveloped case, the development will not be impacted by the 2100 climate 1% AEP. The buildings nearest to the flood extent are labelled in Appendix D. The peak storm tide levels near each building are compared to the proposed floor level of the development in Table 5-1 which shows that all buildings are above the flood peak.

Table 5-1: Peak storm tide levels compared to floor level for nearby buildings

Building group number	1	2	3	4
Building elevation (mAHD)	5.5	5.6	5.15	4.67
1% AEP (mAHD)	1.9	1.97	1.91	1.74
1% AEP future climate (mAHD)	2.99	2.98	2.9	2.97



Figure 5-1: Site extent compared to the 1% AEP storm tide depth (m)



Figure 5-2: Site extent compared to the 1% AEP storm tide depth (m) for the undeveloped 2100 climate case

6 Summary

JBPacific were commissioned by GURNER™ and Hunt Design to undertake a flood study of the Packers Creek catchment for the proposed development of The Davidson by GURNER™, Luxury Hotel and Private Homes. This involved investigating the proposed developments vulnerability to flooding and storm tide and to investigate the impact the development might have on surrounding properties. The project involved data collection, hydrological analysis, hydraulic modelling and storm tide assessment.

The hydrological modelling was conducted using a model developed in the Unified River Basin Simulator (URBS) software. This involved the delineation of the Packers Creek catchment into sub-catchments and the validation of the model using the Quantile Regression Technique (QRT). URBS and QRT flows were compared at Sub-catchments selected at the site of interest, the catchment outlet and two locations upstream of the site and are shown in Table 6-1.

Table 6-1: URBS and QRT flows at sub-catchments of interest

Model	Sub-catchment 38 (site location)	Sub-catchment 1 (outlet)	Sub-catchment 14	Sub-catchment 26
URBS	372.3	406.9	179.9	58.5
QRT	369.1	406.5	223.0	93.2

Rainfalls for the 1% AEP design event were developed for the current and 2100 climate. Temporal patterns and design rain inputs were taken from were obtained from the ARR DataHub. The design rainfalls were used in URBS to obtain design flows for use in the hydraulic model.

The hydraulic analysis was undertaken in TUFLOW. The hydraulic modelling involved establishing internal and external model boundaries, terrain modelling, developing model roughness and specifying model outputs. URBS ARR19 was used to obtain the duration and temporal pattern for the design events. Rainfall intensity was projected to represent a 2100 horizon under the RCP8.5 pathway. Maps of flood depth and water level were produced for the existing, proposed development and 2100 climate case. Maps showing the extent of the site indicated that no cases resulted in flood waters reaching the site. The 2100 climate case had a small area of depth at the proposed entry to the underground parking. This was caused by rain falling on the site and can be handled by the carpark pump system. Storm tide maps also indicated that storm tide flooding would not reach the site for the current and 2100 climate. This was confirmed by comparing the proposed floor levels of nearby buildings to the flood level and storm tide level and is summarised in Table 6-2. An afflux map was created that compared the existing and proposed development cases. The afflux map indicated no change meaning that surrounding properties would not be impacted by the proposed development of The Davidson by GURNER™, Luxury Hotel and Private Homes.

Table 6-2: Peak flood and storm tide levels compared to floor level for nearby buildings

Building group number	1	2	3	4
Building elevation (mAHD)	5.52	5.59	5.15	4.67
1% AEP flood level (mAHD)	1.47	1.47	1.46	1.46
1% AEP future climate flood level (mAHD)	2.37	2.37	2.36	2.36
1% AEP storm tide level (mAHD)	1.9	1.97	1.91	1.74
1% AEP future climate storm tide level (mAHD)	2.99	2.98	2.9	2.97

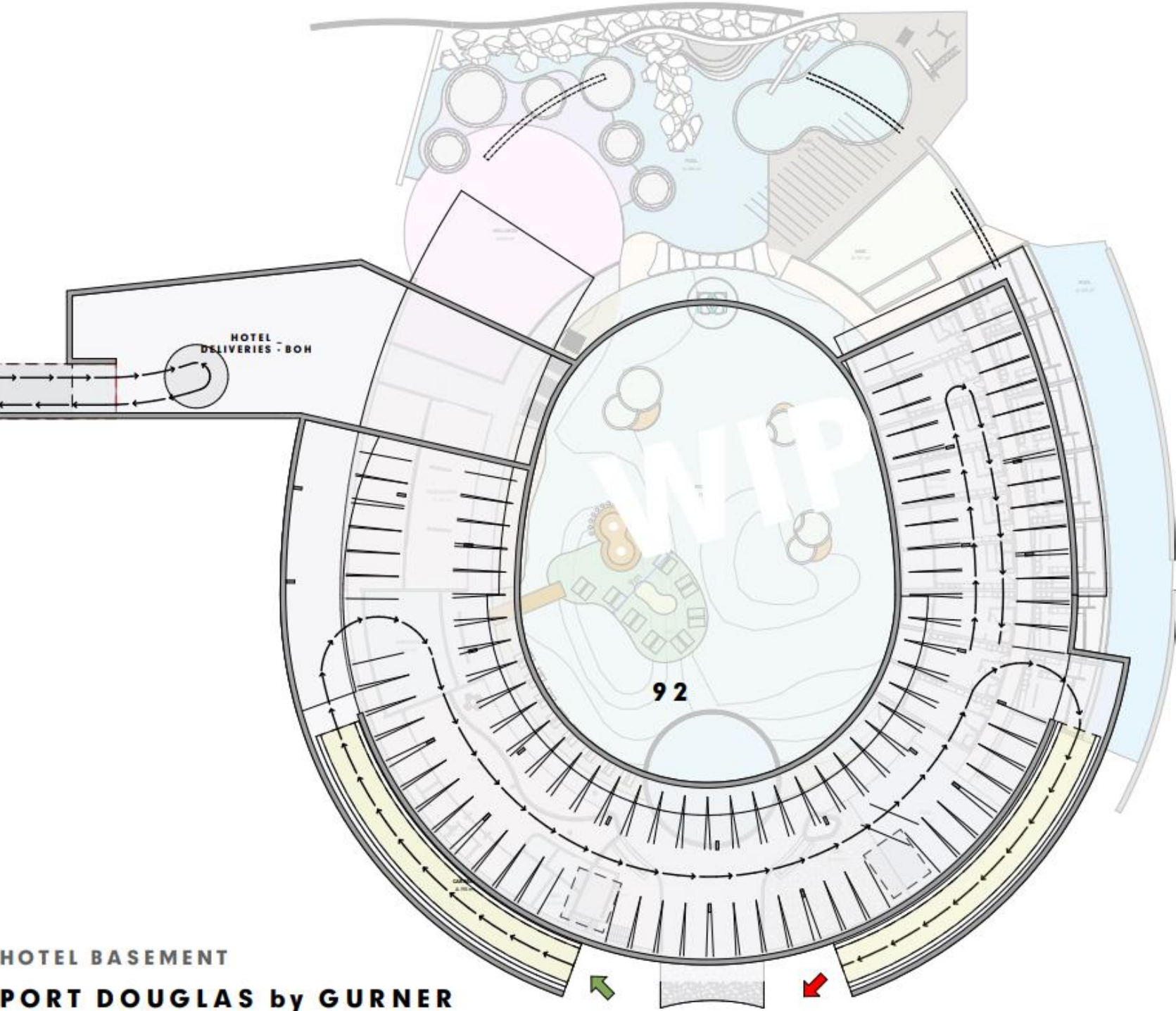
Appendices

A Appendix A - Proposed construction

A.1 Layout of the proposed construction



A.2 Underground level of the centre structure



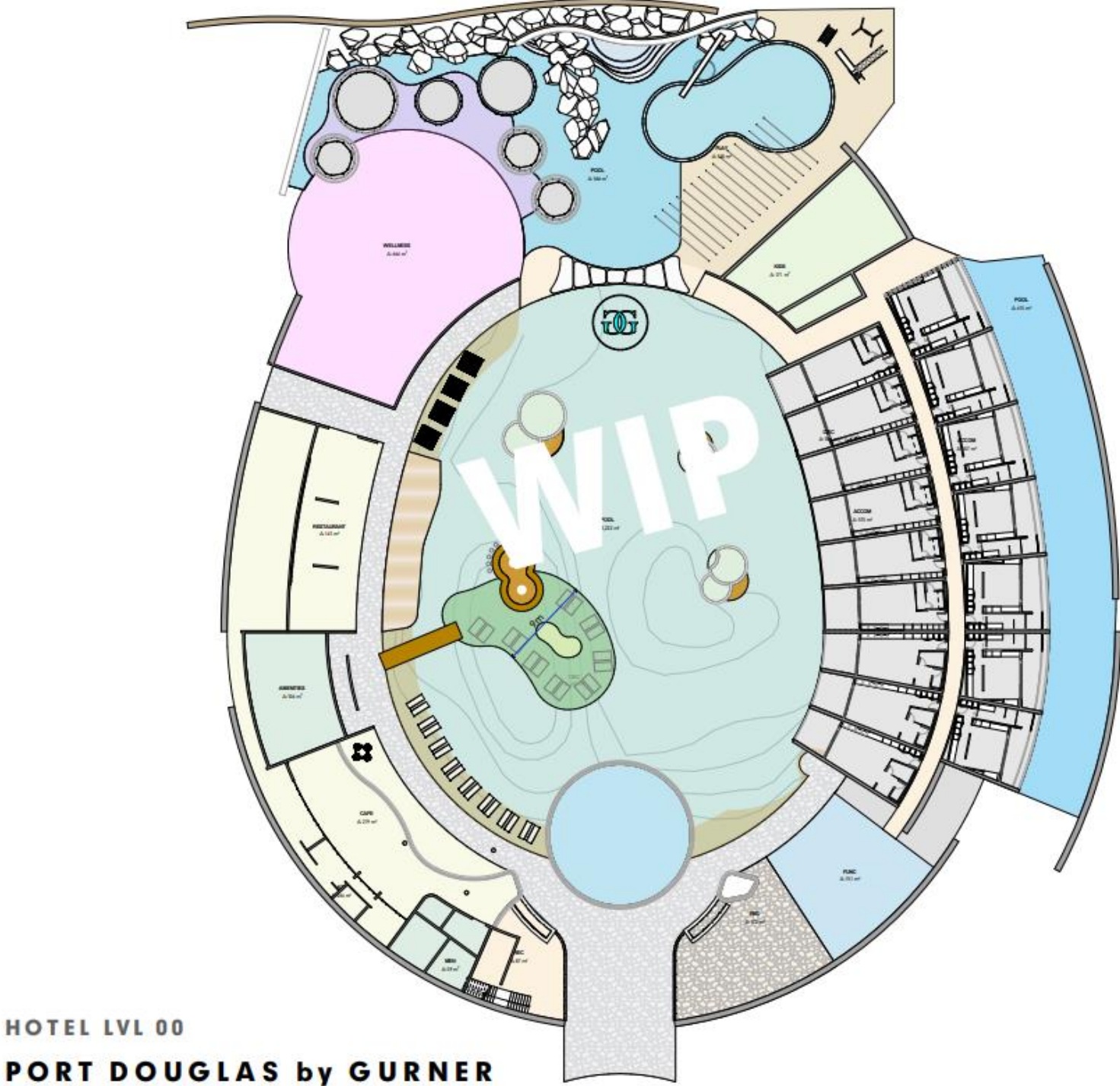
GROSS FLOOR AREA		
STORY	ZONE NAME	CALCULATED AREA
LEVEL -01		
	BASE	4,517
1		4,517 m ²
LEVEL 00	ACCOM	1,033
	AMENITIES	706
	CAFE	285
	CIRC	817
	PUNC	151
	KIDS	171
	KIT	244
	MEN	59
	PLAY	318
	POOL	3,204
	REC	259
	RESTAURANT	143
	WELLNESS	644
		7,454 m ²
19		
LEVEL 01	ACCOM	3,316
	CIRC	402
	CLUB	138
	POOL	121
	SKY BAR	168
	WELL	634
		4,759 m ²
10		
LEVEL 02	ACCOM	3,798
	CIRC	398
	CLUB	138
	WELLNESS	172

AREA CALCULATIONS GFA 200 GFA
SCALE 1:5.67

HOTEL BASEMENT
HOTEL DEVELOPMENT
GURNER GROUP
STATUS:
SCHEMATIC
DRAWING NO:
04
REVISION NO:
01
DATE:
28/2/2023



A.3 Ground level of the centre structure



100_AREAS 100_LVL00 INTERNAL AREA SCHEDULE				
AREA	LVL	ROOM TYPE	TOTAL AREA	QTY
ACCOMMODATION				
	L00	SUITE GARDEN	515	8
	L00	SUITE POOLSIDE	426	10
			741 m ²	
AMENITIES				
	L00	AMEN	104	1
	L00	AMENITIES	59	1
			163 m ²	
CIRCULATION				
	L00	RECEPTION & LOUNGE	250	5
			250 m ²	
FOOD + BEVERAGES (F+B)				
	L00	CAFE DECK	211	1
	L00	KITCHENS	238	1
	L00	REC	140	1
	L00	RESTAURANT	67	1
			656 m ²	
FUNCTIONS				
	L00	ADMIN - FUNCTION	567	1
			567 m ²	
LIFESTYLE				
	L00	B	254	18
	L00	KIDS CLUB	151	1
	L00	SPA	469	1
			874 m ²	
RESIDENTIAL				
	L00	TYPE 01	1,446	14
	L00	TYPE 02	505	6
	L00	TYPE 03	781	11
	L00	TYPE 04	1,225	14
			3,957 m ²	
			6,789 m ²	

HOTEL LVL 00

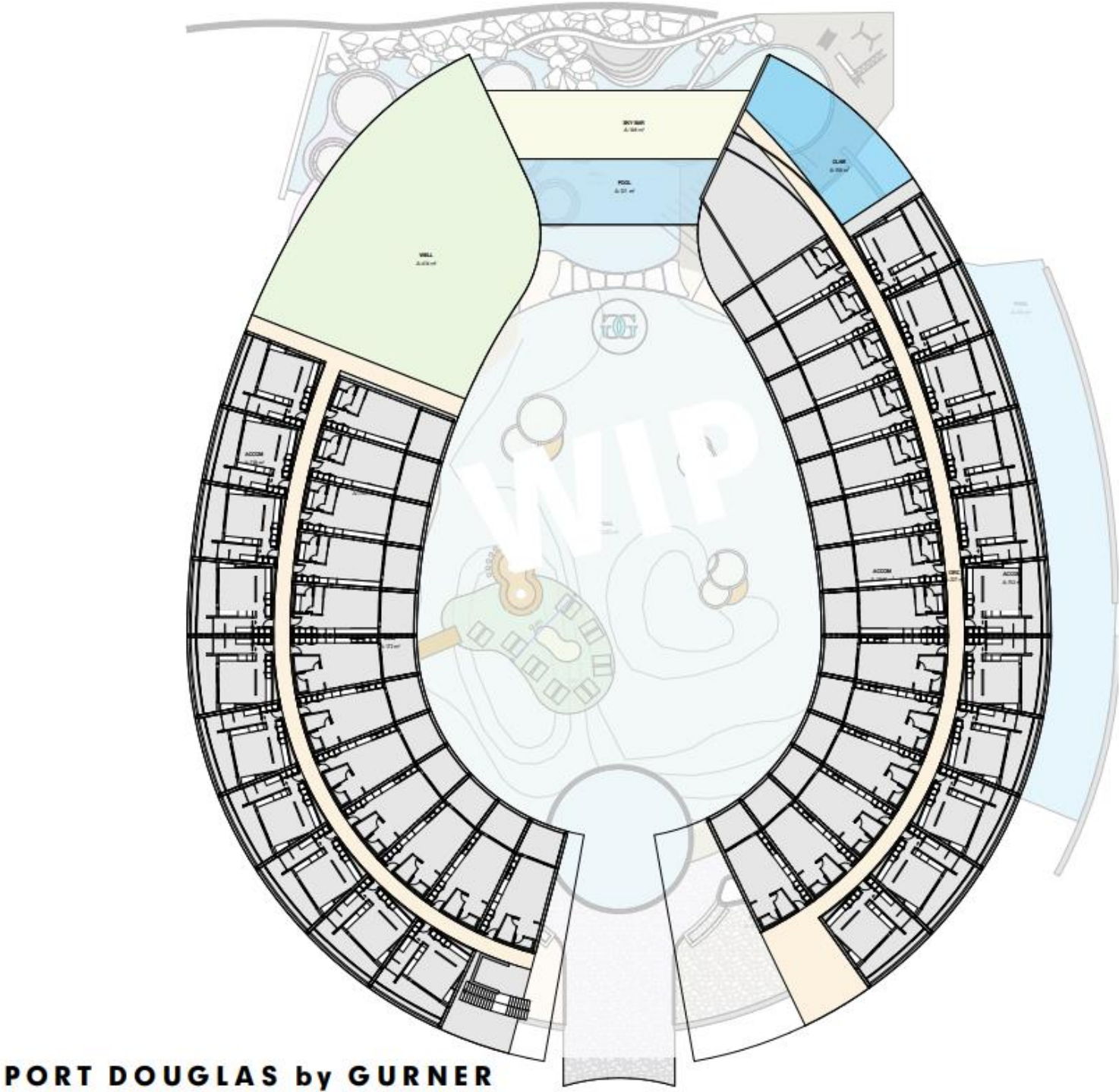
**HOTEL DEVELOPMENT
GURNER GROUP**

STATUS:
SCHEMATIC
DRAWING NO:
05
REVISION NO:
01
DATE:
28/2/2023



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A.4 First level of the centre structure

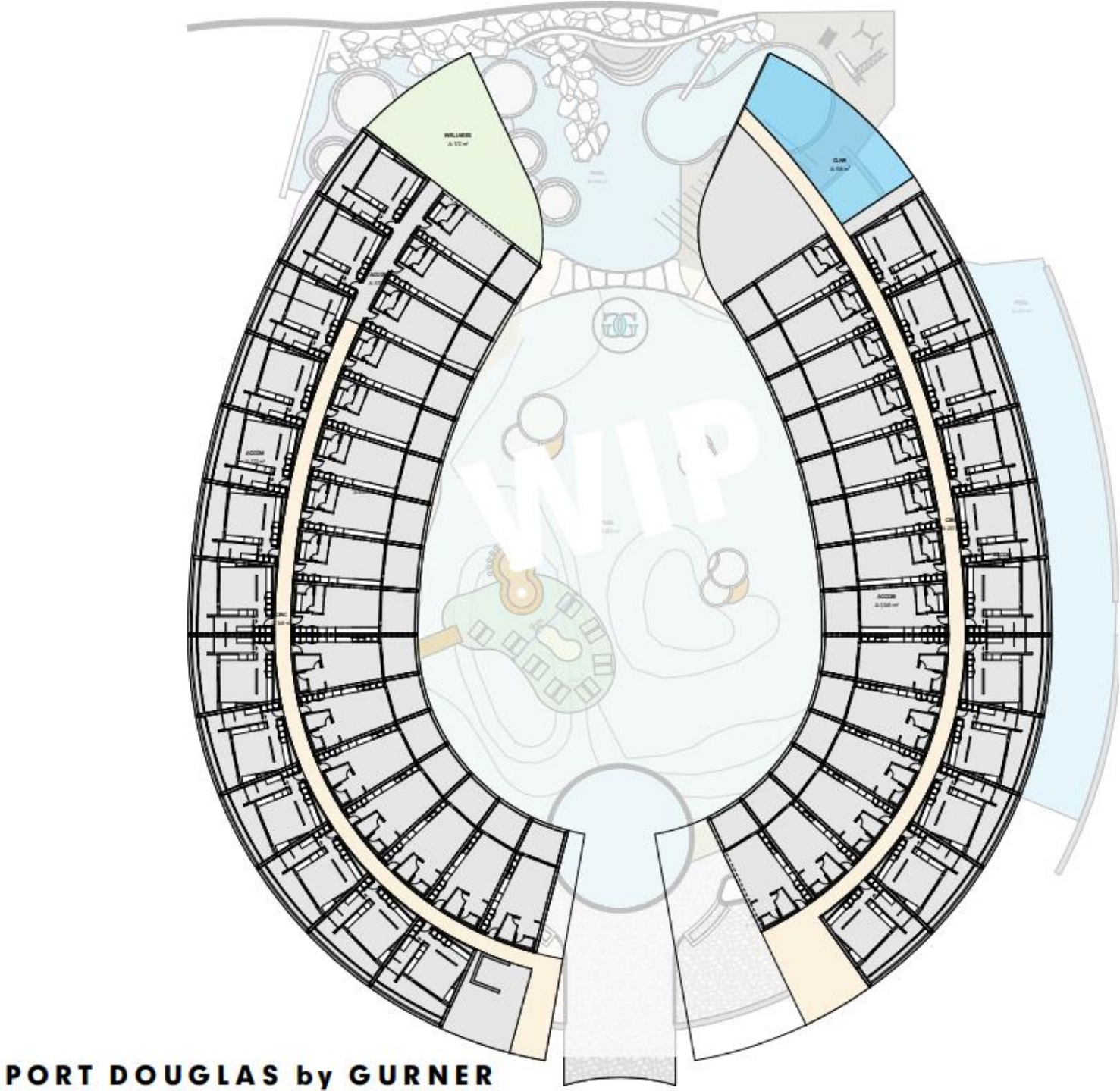


100_AREAS 100_LVL01 ROOM TALLY			
AREA	LVL	ROOM TYPE	QTY
ACCOMMODATION			
L01		KING ROOM	1
L01		SUITE GARDEN	21
L01		SUITE POOLSIDE	26
			48

HOTEL LVL 01
HOTEL DEVELOPMENT
GURNER GROUP
STATUS:
SCHEMATIC
DRAWING NO:
06
REVISION NO:
01
DATE:
28/2/2023



A.5 Second level of the centre structure



100_AREAS 100_LVL02 ROOM TALLY			
AREA	LVL	ROOM TYPE	QTY
ACCOMMODATION			
	L02	SUITE GARDEN	24
	L02	SUITE POOLSIDE	30
			54

HOTEL LVL 02
HOTEL DEVELOPMENT
GURNER GROUP
STATUS:
SCHEMATIC
DRAWING NO:
07
REVISION NO:
01
DATE:
26/2/2025



B Appendix B - Design flood maps

B.1 1% AEP Design Event peak flood depth (m) for the undeveloped case for Port Douglas



B.2 1% AEP Design Event peak flood depth (m) for the undeveloped case at the site



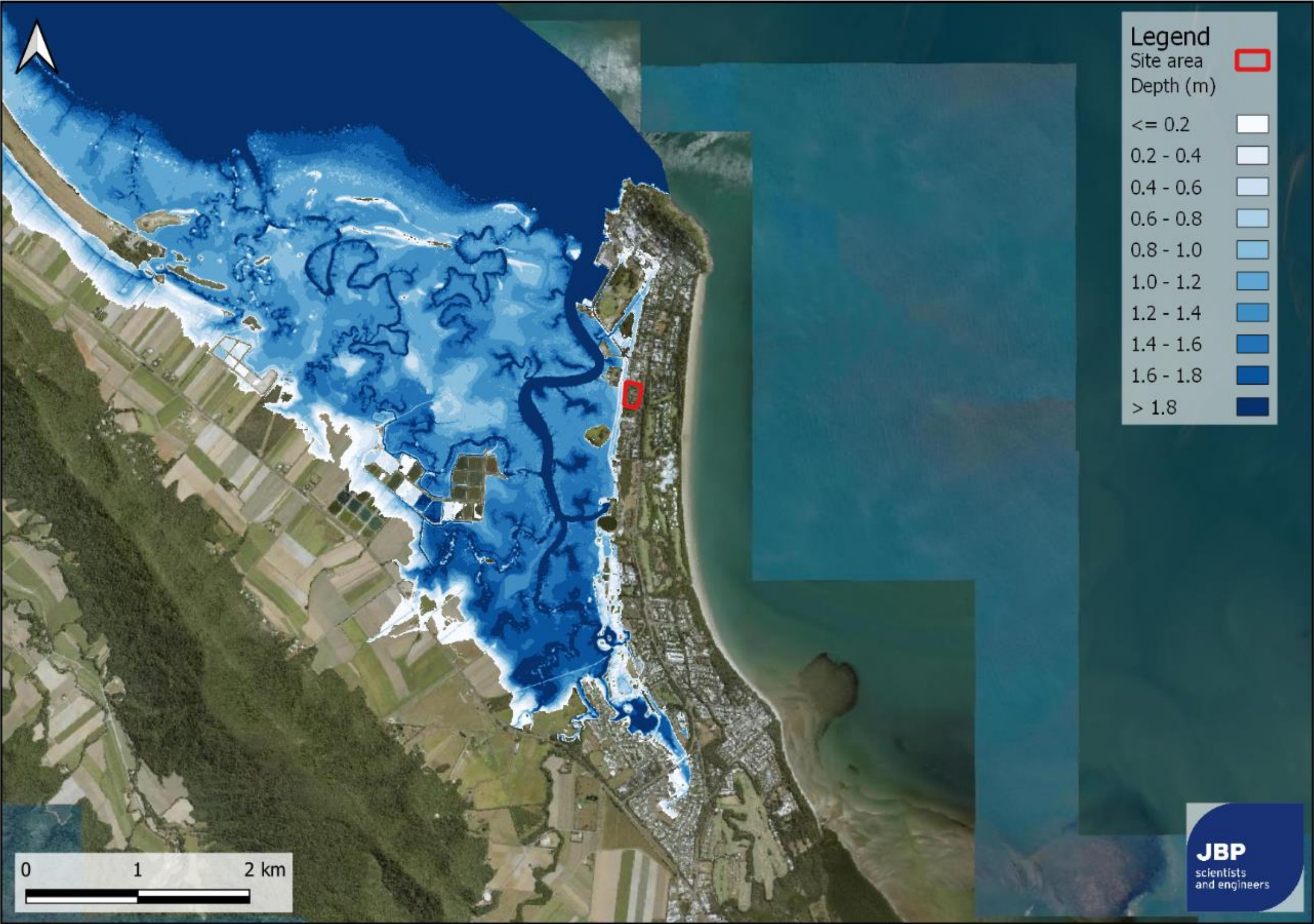
B.3 1% AEP Design Event peak flood depth (m) for the developed case for Port Douglas



B.4 1% AEP Design Event peak flood depth (m) for the developed case at the site



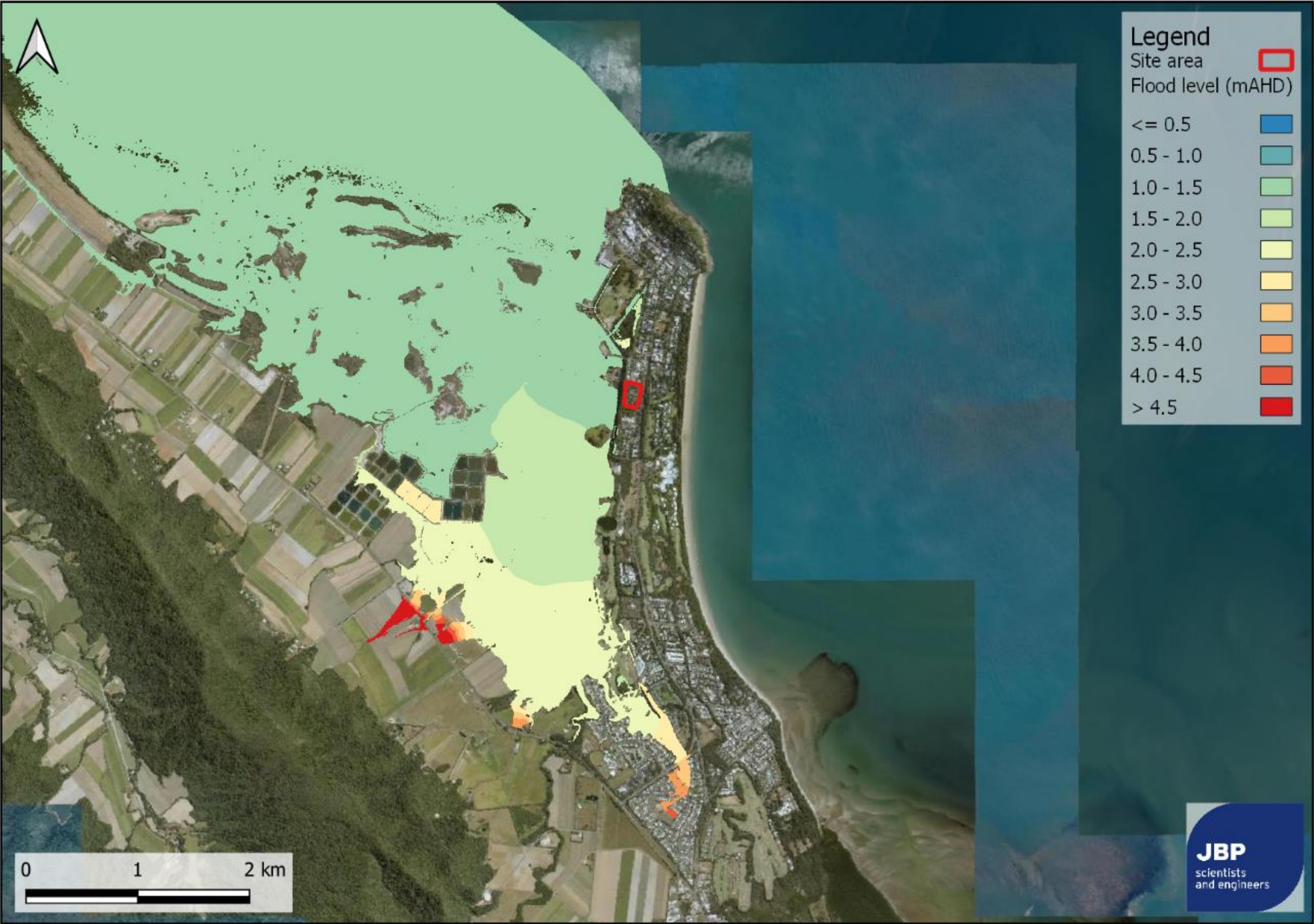
B.5 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas



B.6 1% AEP Design Event peak flood depth (m) for the 2100 climate case at the site



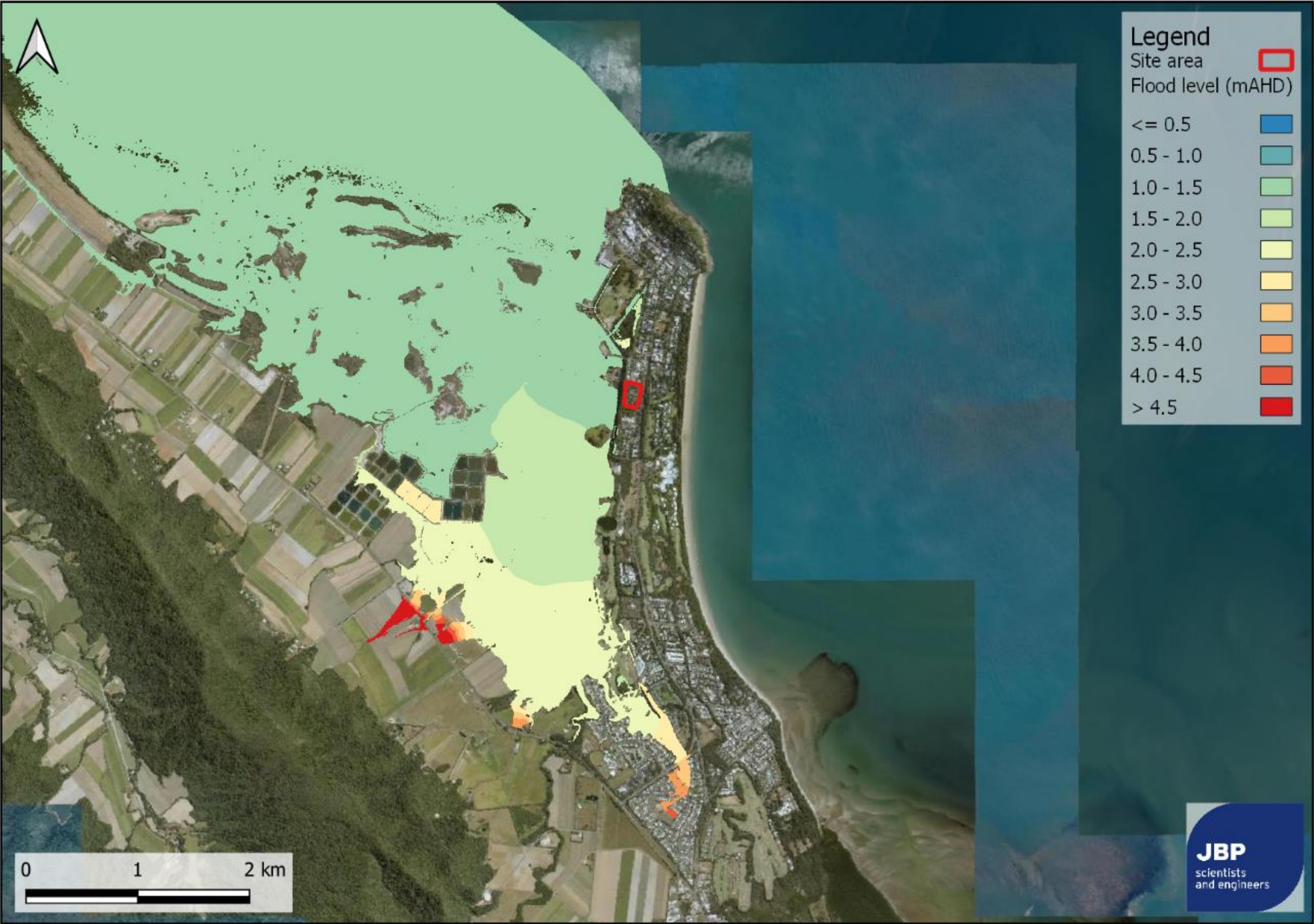
B.7 1% AEP Design Event peak flood level (mAHD) for the undeveloped case for Port Douglas



B.8 1% AEP Design Event peak flood level (mAHD) for the undeveloped case at the site



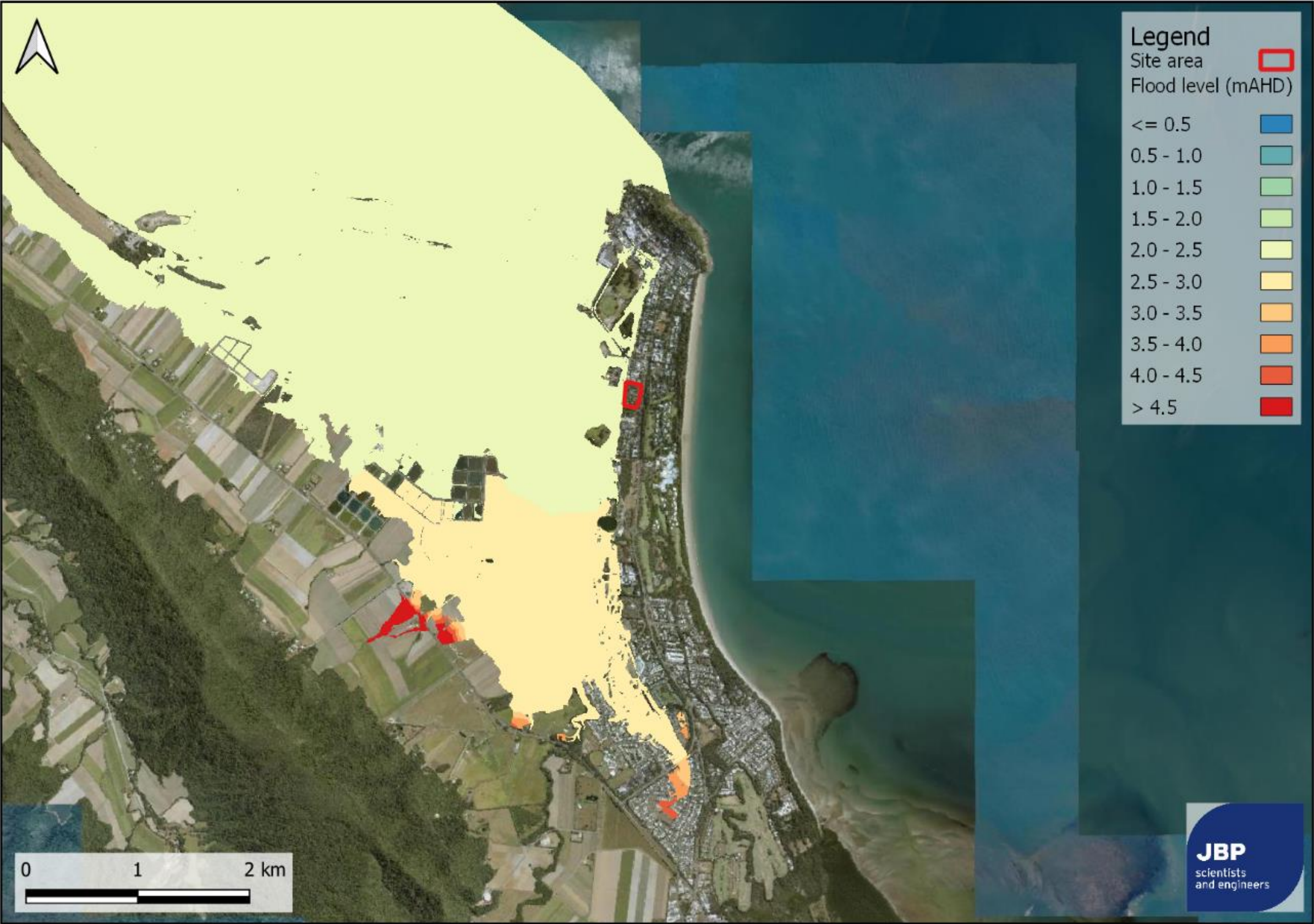
B.9 1% AEP Design Event peak flood level (mAHD) for the developed case for Port Douglas



B.10 1% AEP Design Event peak flood level (mAHD) for the developed case at the site



B.11 1% AEP Design Event peak flood level (mAHD) for the 2100 climate case for Post Douglas

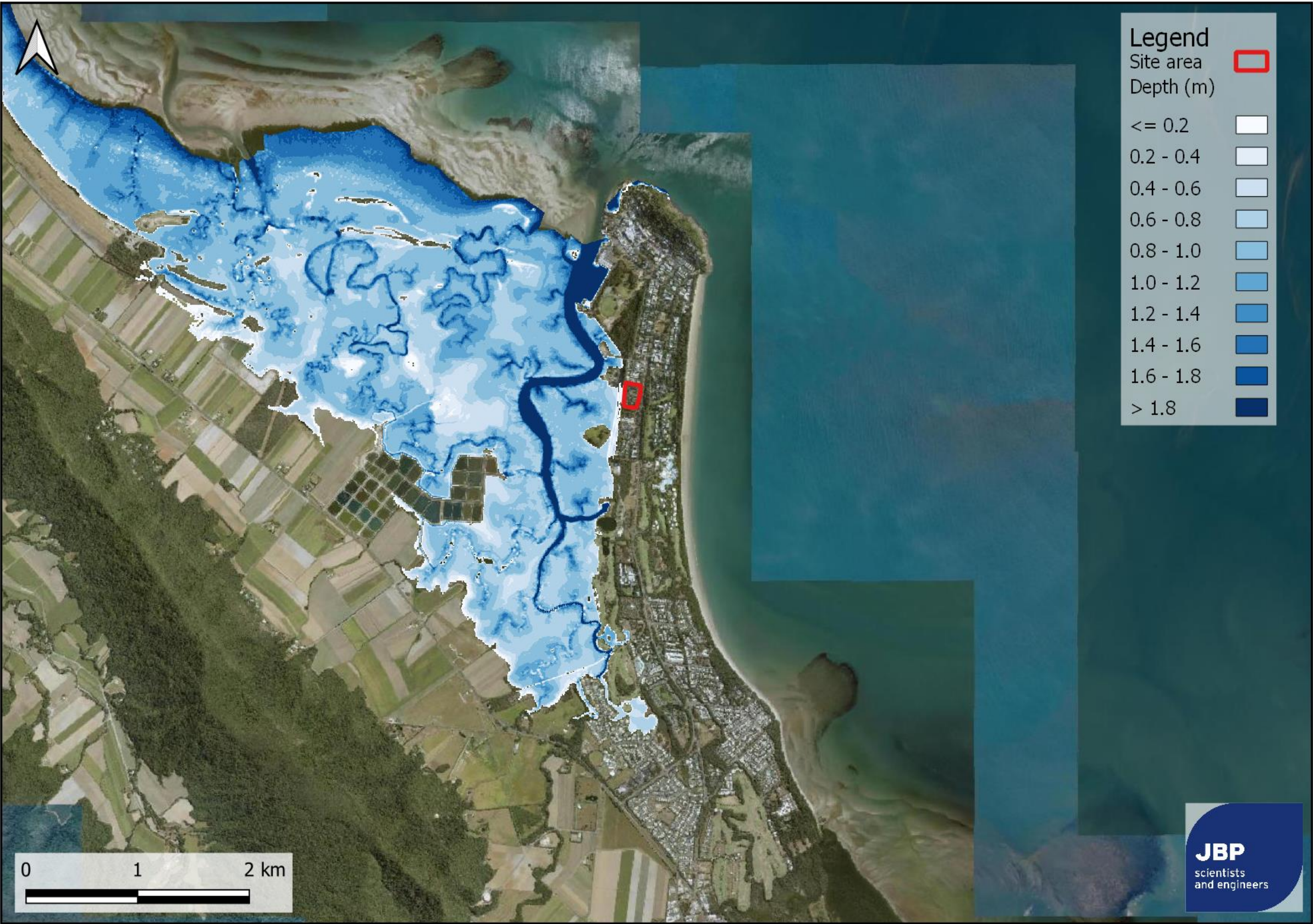


B.12 1% AEP Design Event peak flood level (mAHD) for the 2100 climate case for Post Douglas



C Appendix C - Design storm surge maps

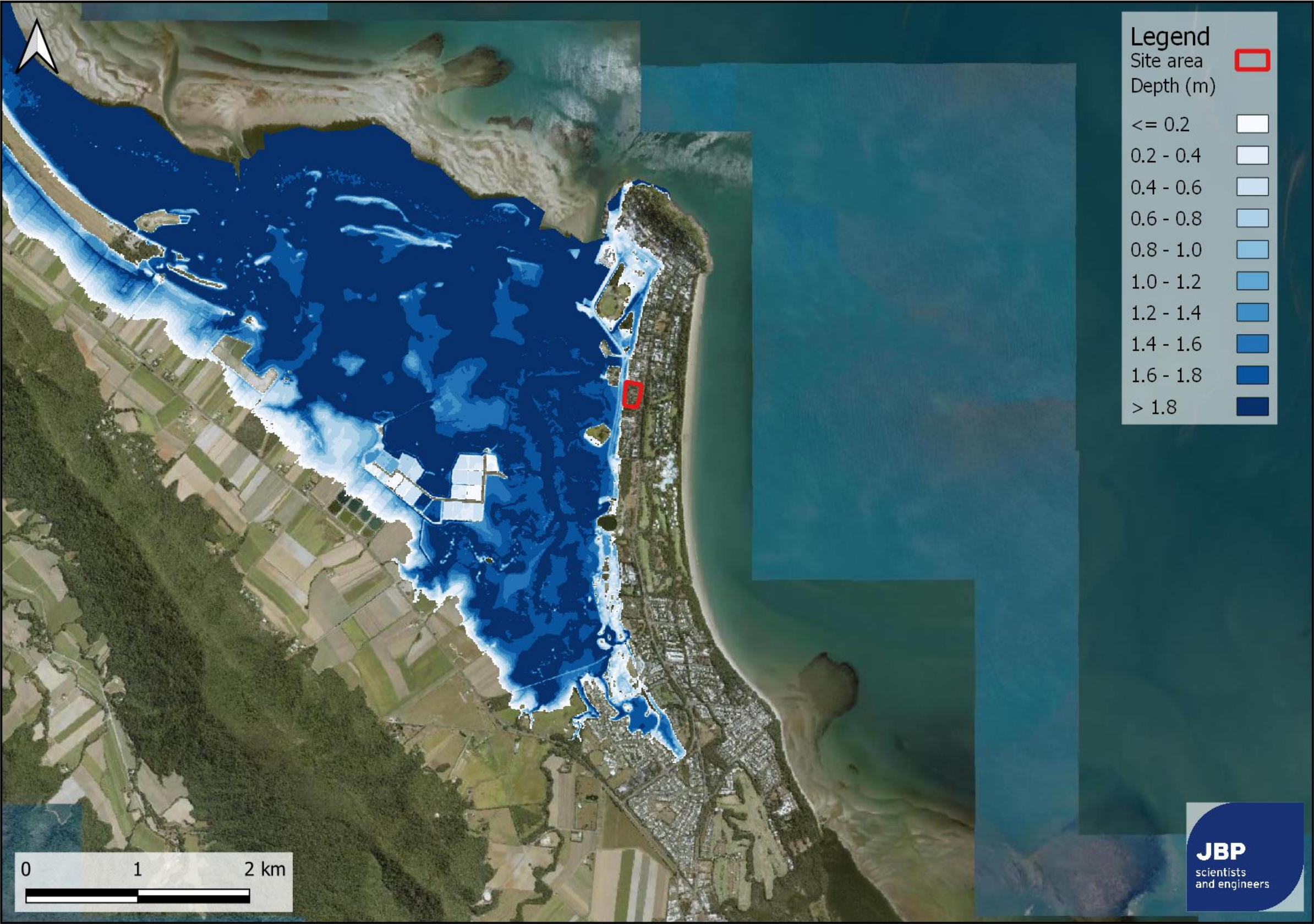
C.1 1% AEP Design Event storm surge depth (m) for Post Douglas



C.2 1% AEP Design Event storm surge depth (m) at the site



C.3 1% AEP Design Event storm surge depth (m) for the 2100 climate case for Post Douglas



C.4 1% AEP Design Event storm surge depth (m) for the 2100 climate case at the site



D Appendix D - Labelled buildings nearest flood extent





Offices in
Australia
Cambodia
Ireland
Romania
Singapore
UK
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Attachment 9

Hydraulic Design Report



DEVELOPMENT & PROPERTY SERVICES

THE DAVIDSON by GURNER™

LUXY HOTEL and PRIVATE HOMES
DAVIDSON STREET,
PORT DOUGLAS


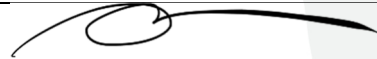
HYDRAULIC DESIGN REPORT

REV: B
20th APRIL 2023

Design Report

PROPOSED HOTEL DEVELOPMENT

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REPORT AUTHORISATION			
Version	B	Date	27 April 2023
Comments	Design Report		
Prepared by		Date	27 April 2023
Shane Barnes			
Approved by		Date	27 April 2023
Shane Barnes			

1.0 INTRODUCTION

H2O Consultants have been requested by Hunt Design to provide a report on the Hydraulic aspects for the new THE DAVIDSON by GURNER™, Luxury Hotel and Private Homes, located on Davidson Street, Port Douglas.

The proposed development contains,

107 Luxury Hotel Rooms, Food and Beverage, Function and Lifestyle areas.

44 Private Residential Houses on small Lots under 400m²

The Hotel is built over a Basement Carpark and 3 Levels above.

2.0 SERVICES

2.1 Sewerage Reticulation

An existing 150mm AC Sewer main traverses inside the property along the rear boundary. The sewer main connects to a Sewer Pump Station in the South Western corner of the Site with a rising main directed towards the Council Sewer Treatment Plant. The sewer mains and Pump Station were installed in 1975.

As per FNQROC the appropriate demand from the proposed Development is 239 EP.

44 Homes - 110EP,

107 Rooms (104x1bed, 3x2bed) – 109 EP,

402m² Food/Bev – 20EP

Our proposal is realigning the existing sewer main outside the Development to keep clear of proposed Buildings. Install a 150mm sewer network internally within the site utilizing 2 sewer connections to the Council Sewer Main.

Expected Seasonal Flow Rates,

	daily flow		month rate	season	adjusted daily flow	adjusted month flow
January	86650	31	2,686,150	50%	43,325	1,343,075
February	86650	28	2,426,200	50%	43,325	1,213,100
March	86650	31	2,686,150	50%	43,325	1,343,075
April Low	86650	15	1,299,750	80%	69,320	1,039,800
April Peak	86650	15	1,299,750	100%	86,650	1,299,750
May	86650	31	2,686,150	80%	69,320	2,148,920
June Low	86650	24	2,079,600	80%	69,320	1,663,680
June Peak	86650	6	519,900	100%	86,650	519,900
July Low	86650	16	1,386,400	80%	69,320	1,109,120
July Peak	86650	15	1,299,750	100%	86,650	1,299,750
August	86650	31	2,686,150	80%	69,320	2,148,920
September Low	86650	24	2,079,600	80%	69,320	1,663,680
September Peak	86650	7	606,550	100%	86,650	606,550
October Low	86650	16	1,386,400	80%	69,320	1,109,120
October Peak	86650	14	1,213,100	100%	86,650	1,213,100
November Low	86650	15	1,299,750	50%	43,325	649,875
November Peak	86650	15	1,299,750	80%	69,320	1,039,800
December Low	86650	15	1,299,750	50%	43,325	649,875
December Peak	86650	16	1,386,400	100%	86,650	1,386,400
					YEAR	23,447,490.00

2.2 Water Reticulation

An existing 150mm AC Watermain and a 450mm DICL Trunk Watermain runs parallel to the front boundary.

Flow testing was conducted on the street fire hydrants at the corner of Cummins and Davidson Streets.

Results were 10lit/sec @ 465kpa and 20lit/sec @ 270kpa.

Residual pressure in the main at the adjacent hydrant was 350kpa.

The results indicate the proposed Development will require Storage Tanks and pumps for Fire Hydrant and Fire Sprinkler protection.

Potable water supply can be achieved from the council water main with a small pump station to increase the pressure for internal fixtures.

A 150mm connection is required for this project for the supply of Potable Water and Fire Fighting purposes.

Rainwater reuse will be used for Irrigation and Pool Water top up supplies.

	daily flow		month rate	season	adjusted daily flow	adjusted month flow
January	198100	31	6,141,100	50%	99,050	3,070,550
February	198100	28	5,546,800	50%	99,050	2,773,400
March	198100	31	6,141,100	50%	99,050	3,070,550
April Low	198100	15	2,971,500	80%	158,480	2,377,200
April Peak	198100	15	2,971,500	100%	198,100	2,971,500
May	198100	31	6,141,100	80%	158,480	4,912,880
June Low	198100	24	4,754,400	80%	158,480	3,803,520
June Peak	198100	6	1,188,600	100%	198,100	1,188,600
July Low	198100	16	3,169,600	80%	158,480	2,535,680
July Peak	198100	15	2,971,500	100%	198,100	2,971,500
August	198100	31	6,141,100	80%	158,480	4,912,880
September Low	198100	24	4,754,400	80%	158,480	3,803,520
September Peak	198100	7	1,386,700	100%	198,100	1,386,700
October Low	198100	16	3,169,600	80%	158,480	2,535,680
October Peak	198100	14	2,773,400	100%	198,100	2,773,400
November Low	198100	15	2,971,500	50%	99,050	1,485,750
November Peak	198100	15	2,971,500	80%	158,480	2,377,200
December Low	198100	15	2,971,500	50%	99,050	1,485,750
December Peak	198100	16	3,169,600	100%	198,100	3,169,600
					YEAR	53,605,860.00

2.3 Fire Services

A fire service is required for the project in the form of Fire Sprinklers, Fire Hydrants, Fire Hose Reels and Fire Extinguishers.

Expected operational demand for the project as required by the NCC will be

15 lit/sec for the Fire Sprinkler Service

10 lit/sec for the Fire Hydrant Service.

Storage Tanks and Pumps will be required for this installation due to the lack of pressure in the Council Street main.

The storage volume that can be utilized under the ramps is approx. 285,000 litres.

This is more than adequate to provide 100% storage volume for Fire Fighting purposes.

2.4 Swimming Pools

Initial filling of the swimming pools would be expected from the Council Water main.

Approximately 3.5 million litres of water will be required.

Approximately 5 million litres of water will evaporate throughout the year.

The water to top up the swimming pool will be via a combination of rainwater and council water during the drier months.

Water Treatment will be via Chlorine dosing and other Filtration methods complying with the requirements of Queensland Health, Water Quality Guidelines for Public Aquatic Facilities.

Pool Backwash water will be discharged to Sewer via a storage tank at a controlled rate and outside of peak demands.

2.5 Stormwater Reticulation

Stormwater Reticulation and Site drainage will be assessed by a Civil Engineer.

Downpipes from the Hotel roof would be a syphonic stormwater system.

Downpipes from the Accommodation Buildings would be 100mm.

These would discharge into the Civil Stormwater system to a Legal Point of Discharge.

Stormwater Detention Tanks will be utilized for Irrigation Use and Topping up the Pool Supply.

3.0 CONCLUSIONS

Should you have any further queries, please do not hesitate to contact Shane Barnes at this office.

Yours faithfully

H2O Consultants



Shane Barnes

Attachment 10

Electrical Report



DAVIDSON STREET PORT DOUGLAS DEVELOPMENTS PTY LTD

THE DAVIDSON BY GURNER™

ELECTRICAL DA REPORT

APRIL 2023

HIGHLY CONFIDENTIAL



We design...
You enjoy

The Davidson by GURNER™

Electrical DA Report

DAVIDSON STREET PORT DOUGLAS DEVELOPMENTS PTY LTD

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Redlynch QLD 4870

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REV	DATE	DETAILS
A	12/04/2023	Final
B		
C	24/04/2023	Name Change

	NAME	DATE	SIGNATURE
Prepared by:	M. Hopkinson	24/04/2023	

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EXECUTIVE SUMMARY

The proposal is for a new short term accommodation development currently occupied by the existing Caravan Park and Backpackers Accommodation on Davidson Street, Port Douglas, QLD.

No major design or construction risks are anticipated from an electrical services perspective for this proposed development.

There will be a significant increase in electrical load required for the project, however this increase in load will be readily accommodated by the local energy authority (Ergon Energy) via their high voltage (22kV) reticulation system which runs along the street frontage on Davidson Street.

It is anticipated that a total of 2No. 1000kVA transformers will be required to power the site. There is already an existing transformer powering the caravan site. This will become redundant due to its location being at the northern end of the site. The proposed location for a new substation for this site will be at the southern end of the site at the end of Crimmins Street.

New National Broadband Network infrastructure will be required for the site and will be the focus of negotiations with NBN to get fibre to the development, which is currently serviced by copper infrastructure (Fibre to the Node Technology). The NBN services design will assume that fibre will be available to the site.

Whilst the quality of the product will be high, it will later be determined as to the appropriateness of payback periods when considering life cycle costing analysis on the various aspects of the building engineering services. Payback periods directly relate to ownership of the assets and the longevity of that ownership.

1 INTRODUCTION

1.1 PURPOSE OF REPORT

Hopkinson Consulting Engineers (HCE) have been engaged by Davidson Street Port Douglas Developments Pty Ltd to complete an electrical building services review of the proposed development at Lots 1 & 2 on RP723702 and Lots 3 & 4 on RP909815 & Emt A on RP860992 in Port Douglas, QLD.

The purpose of this report is to provide information on electrical building services design criteria and considerations involved in the construction of the new development, as well as provide guidance and recommendations of suitable building services systems applicable to the project.

1.2 PROJECT BACKGROUND

1.2.1 SITE

The site locality is Lots 1 & 2 on RP723702 and Lots 3 & 4 on RP909815 & Emt A on RP860992 in Port Douglas, QLD. The existing site locality currently holds a caravan park and a Backpackers Accommodation facility.



Figure 1 - Aerial View of the proposed development site

1.2.2 EXISTING SERVICES INFORMATION

1.2.2.1 “BEFORE YOU DIG AUSTRALIA” (BYDA)

A BYDA application (formerly known as Dial Before You Dig) has been lodged and the results of the services applicable to this report are summarised below.

ERGON

Ergon Energy owns the high voltage (22kV) infrastructure in Port Douglas. The snip below shows the main elements of that infrastructure within the bounds of this project (project boundary shown in green dashed line). The orange lines represent Ergon’s underground assets (cables) below 33kV. The orange lines along the street frontage are most likely 240V street lighting power as the HV cabling is overhead.

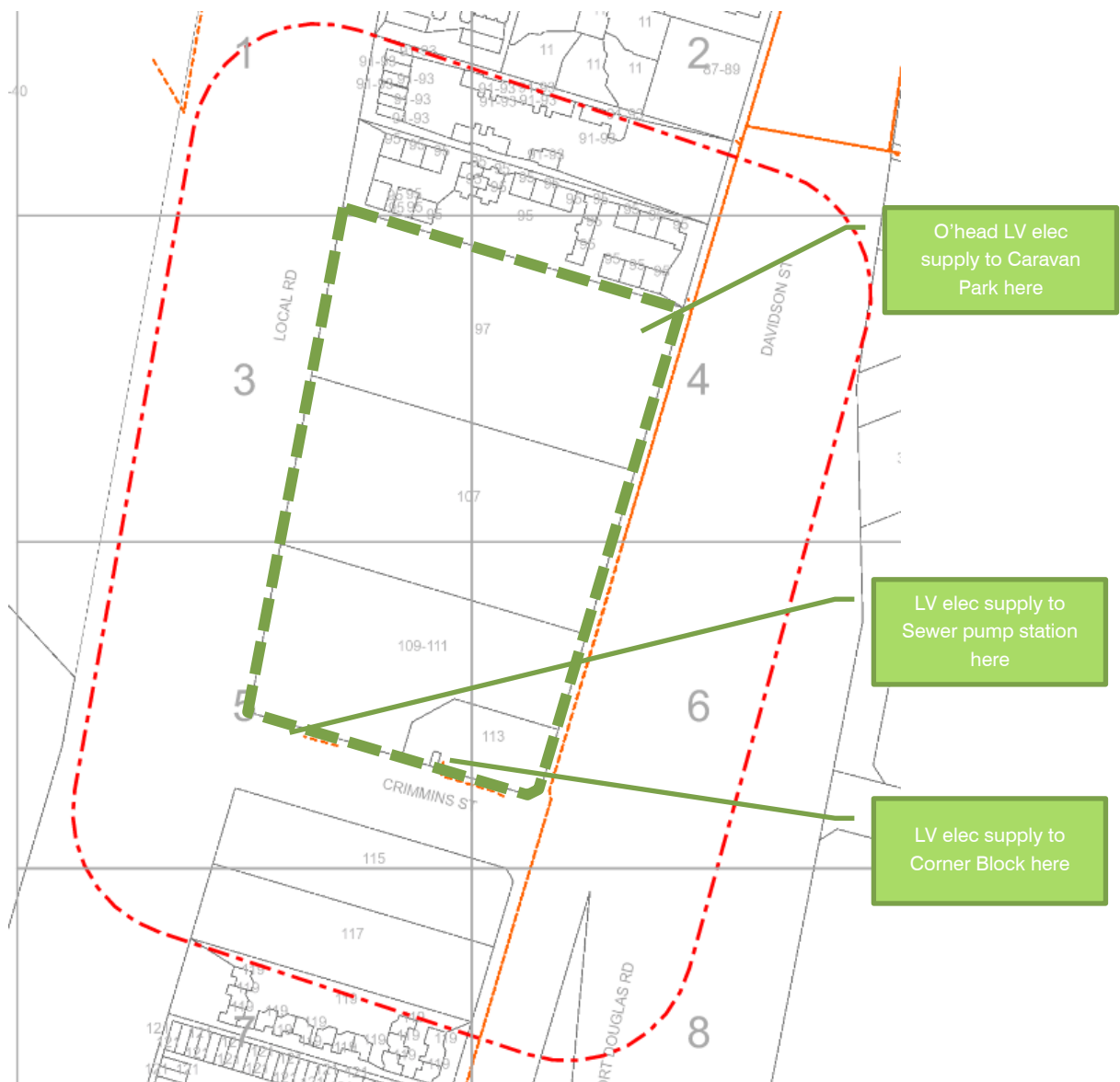
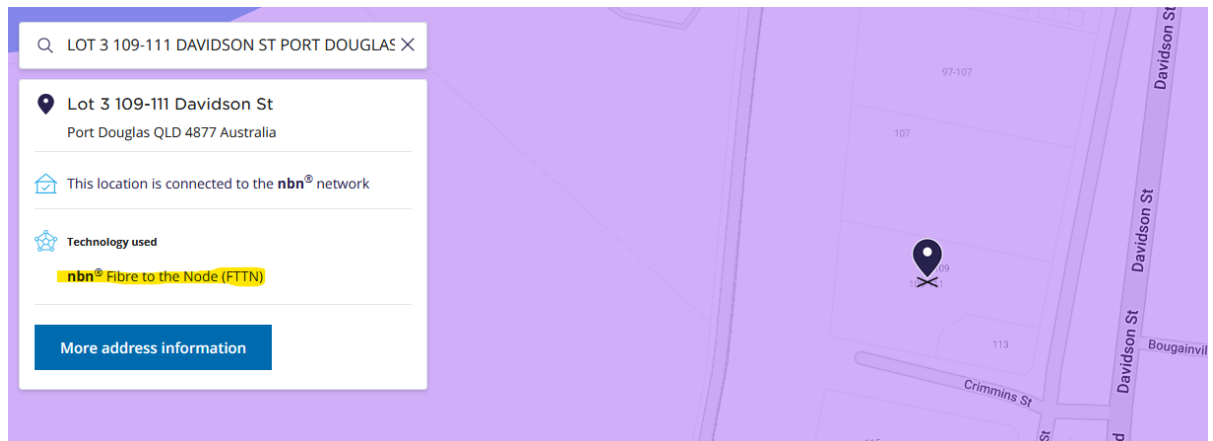


Figure 2 - Ergon Energy Network at the proposed development site

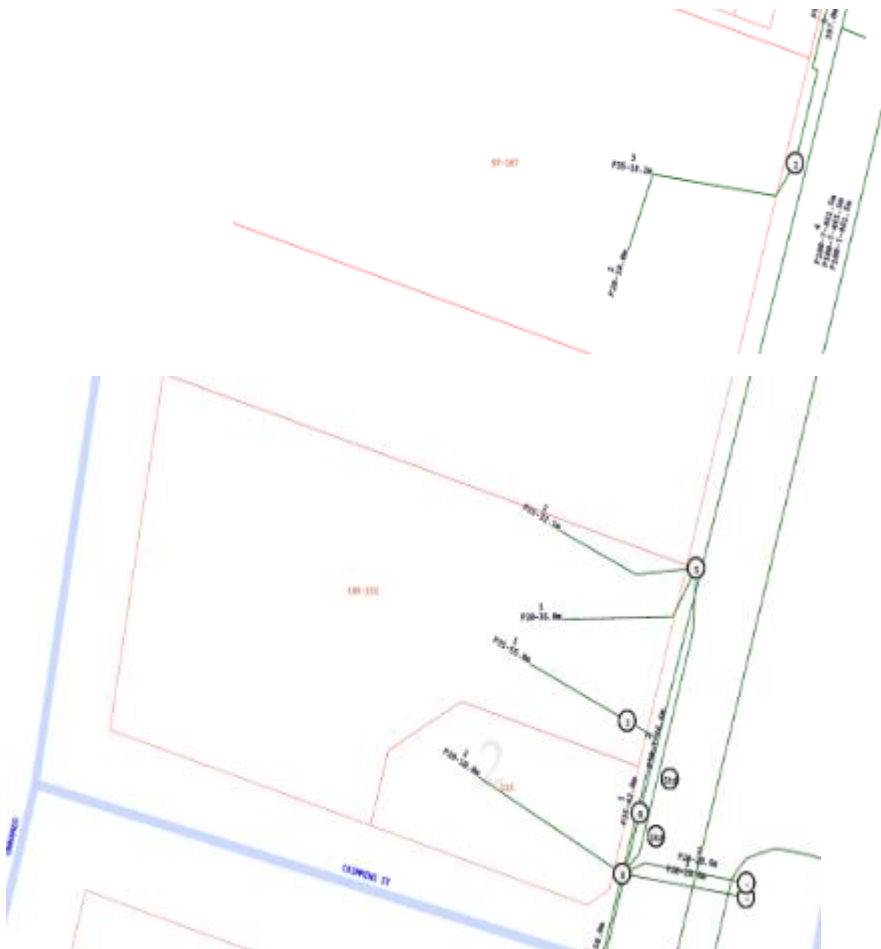
NATIONAL BROADBAND NETWORK

NBN is available in Port Douglas. See notification below.



However, the NBN technology available (as of April 2023) is “Fibre to the Node” (FTTN). FTTN technology uses copper cabling (not fibre optic) and has inherently lower data transfer speeds and bandwidth than ‘Fibre to the Premises’ (FTTP). However, with a project of this magnitude, it will be anticipated that fibre optic cabling will be provided for this development. The ‘pit and pipe’ reticulation design will be on the assumption that fibre will be provided to the site.

The existing NBN site reticulation is shown below.



2 PROPOSED DEVELOPMENT

2.1 GENERAL

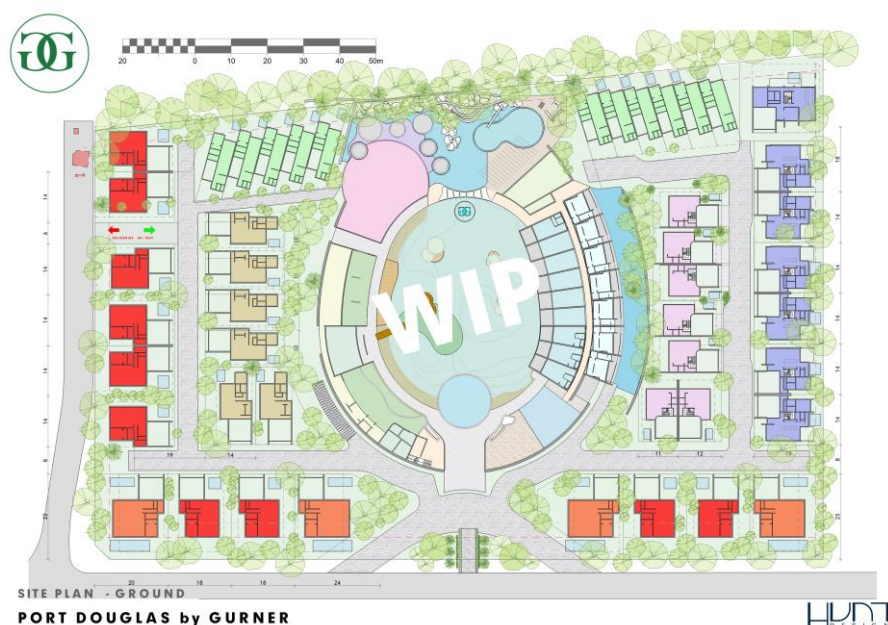
The objective of this report is to provide high level electrical building services guidance to assist the with the Development Application (DA) of the Architectural concept design of the project.

Key drivers for the design of this precinct from a building services perspective will be:

- Value for Money
- Energy Efficiency (with considerations of Net Zero¹ or Sustainable Precincts ethos)
- Flexibility
- Controllability
- Aesthetics
- Environmental considerations (e.g., Noise)

2.2 PROPOSED DEVELOPMENT

The project site plan is as follows:



¹ Net Zero is a target of completely negating the amount of greenhouse gases produced by human activity, to be achieved by reducing emissions and implementing methods of absorbing carbon dioxide from the atmosphere.

2.3 DESIGN CRITERIA

Design criteria presented herein form the basis of the design of the works including sizing of infrastructure: -

- All new buildings are to be designed in accordance with the requirements of the National Construction Code, relevant Australian Standards and Statutory Regulations.
- All major elements of the building services engineering design will undergo a rigorous 'life cycle cost analysis' to ensure the most appropriate and best value for money solution is implemented for the project.

2.3.1 EXTERNAL ENVIRONMENT CONDITIONS

	° C dry bulb	° C wet bulb
Winter	15	N/A
Summer – General	32.8	26.8

The proposed development site is coastal and subject to significant salt laden air blown in from the ocean from the prevailing south easterly breezes throughout most of the year. A fundamental theme of the design will be the supreme importance to make sure that all installed plant and equipment will be sufficiently protected from this corrosive environment. Preventative measures include enclosing plant, choosing appropriate materials (i.e., 316-grade stainless steel) or allowing a robust maintenance regime.

2.3.2 INTERNAL ENVIRONMENT CONDITIONS

For lighting levels, we will adhere to the recommendations in AS1158 and AS1680 for internal and external lighting levels to maintain comfort, minimise glare and dark sky retention.

3 ELECTRICAL SERVICES

3.1 SITE WIDE ELECTRICAL SERVICES

Site wide electrical services includes the following:

- High voltage reticulation (22kV)
- Low voltage reticulation (415 / 240V)
- NBN Fibre reticulation
- Telstra Copper reticulation
- CCTV Security Coverage and Access Control
- Street Lighting
- Precinct Lighting

3.1.1 HIGH VOLTAGE RETICULATION

The site has high voltage (22kV) overhead transmission lines running along the street frontage on Davidson Street. The site is currently serviced electrically from several low voltage (415V) supplies located at various locations around the site. These existing connection points will become redundant, and a new single location (point of supply) will be requested at the end of Crimmins Street in the vicinity of the existing sewerage pumping station.

When we consider the new infrastructure to be built as part of this new development and apply engineered electrical loading rates to each type of building, we derive a total power requirement for the site of around 2,000 amps per phase. Refer Appendix A.

Therefore, it is our recommendation that the existing 2 x 1000kVA transformers (with the ability to supply 2,600 amps per phase) be allowed for to service this new development. Refer extract below and full drawing in Appendix B.



Figure 3 – Proposed location of Substation.

3.1.2 LOW VOLTAGE RETICULATION

Low voltage reticulation is defined as voltages in the 240 – 415 voltage range. This is the power that comes from the transformers and is distributed around the site to the various Main Switchboards associated with each building.

The longer the runs of low voltage cabling, the larger the cabling becomes and the more expensive it becomes. Therefore, there is a balance when considering the electrical infrastructure layout of the site.

3.1.3 METERING

Metering will be low voltage only. Metering points will be within Main Switchboards and distribution boards throughout the development. It is anticipated that a combination of Ergon (Authority) meters and private meters will be used throughout. It is expected that any private metering will be monitored by Building Management Systems (BMS) for ease of operation and reporting.

3.1.4 NBN FIBRE RETICULATION

As mentioned previously, there is no NBN fibre currently available to the site. However, it is envisaged that an application to NBN will be made to provide fibre to the premises for this project.

3.1.5 TELSTRA COPPER RETICULATION

Existing telecommunications cabling throughout the site is copper. NBN use the copper to provide their broadband services currently.

3.1.6 CCTV SECURITY COVERAGE AND ACCESS CONTROL

An essential part of the new precinct development will be the development of a site wide CCTV system. For this infrastructure, fibre cabling will be reticulated throughout the site for camera connectivity over long distances.

Access control points around driveways, entries and access ramps to the basement will be centrally controlled and monitored.

3.1.7 STREET LIGHTING

Street lighting on the private streets will be designed to the relevant Australian standards, most likely to a pedestrian category as well as vehicles.

3.1.8 PRECINCT LIGHTING

Precinct lighting is defined as aesthetic lighting, such as decorative bollards, landscape lighting on features such as furniture, water features, fairy lights, festoon lights signage lights etc.

3.1.9 UNDERGROUNDING OF EXISTING ERGON ASSETS

The existing overhead cabling on the Davidson Street frontage is unsightly and not in keeping with the quality and first impressions sought by this development. Therefore, it is anticipated that the existing overhead reticulation (which consists of high voltage and low voltage electrical supplies) will be undergrounded by Ergon Energy and its contractors.

An application has been lodged with Ergon Energy for this relocation.

The enquiry reference is CX23DAV0438238Q. Refer Appendix C.

3.2 BUILDING ELECTRICAL SERVICES

The scope of building electrical services will include:

- Supply to the buildings and metering arrangements
- Sub-stations and underground cables
- General light and power throughout. Retail tenancies associated with the residential precinct will be cold shell, being provided with a distribution board only and safe movement lighting.
- Electrical submains to mechanical, fire, lifts and hydraulic switchboards
- General electrical distribution system throughout, including distribution boards
- Emergency/exit lights
- Telephone cabling system
- Data cabling
- Standby generators
- Lightning protection
- Master antenna television and radio systems
- Access control and intruder detection systems
- CCTV Surveillance systems
- General landscape lighting
- Main fire indicator panel
- Manual call points systems
- Thermal detector and smoke detector systems
- Emergency warning and intercom systems

4 LIMITATIONS

This Report is provided by Hopkinson Consulting Engineers (HCE) for Davidson Street Port Douglas Developments Pty Ltd (*Client*) in response to specific instructions from the Client and in accordance with HCE's proposal dated 14 Dec 2022 (*Agreement*).

4.1 PERMITTED PURPOSE

This Report is provided by HCE for the purpose described in the Agreement and no responsibility is accepted by HCE for the use of the Report in whole or in part, for any other purpose (*Permitted Purpose*).

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The services undertaken by HCE in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Report and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Report (*Conclusions*) are based in whole or in part on information provided by the Client and other parties identified in the report (*Information*), those Conclusions are based on assumptions by HCE of the reliability, adequacy, accuracy, and completeness of the Information and have not been verified. HCE accepts no responsibility for the Information.

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APPENDIX A

MAXIMUM DEMAND CALCULATIONS





Address	PD 2 - Port Douglas
REV	C
DATE	5/03/2023

LEVEL	FLOORS	APARTMENTS	CARPARK GFA	GFA SERVICES	GFA COMMON / CIRCULATION	GFA F&B	GFA WELLNESS	GFA RESIDENTIAL	AMENITY (INTERNAL)	Total GFA	NLA COMMERCIAL	NLA RETAIL	NSA RESIDENTIAL	Total NSA / NLA	RESIDENTIAL EFFICIENCY	RESIDENTIAL TERRACE GFA	AMENITY EXTERNAL TERRACE GFA	GBA	POOLS	GRAND TOTAL GBA	CARS	MOTORBIKE	BIKE
BASEMENT 1	1		4,517							-				-				4,517		4,517	120	12	50
GROUND	1	9	-	814	839	672	644	712	171	3,852			-	-		-					-		
LEVEL 01	1	35	-	138	471	168	614	3,316	121	4,828	-	-					319	4,171	2,789	6,960			
LEVEL 02	1	47	-	138	507		173	3,688		4,506			3,217	3,217				4,828		4,828			
LEVEL 03	1	-	-			-			-	-	-		-	-	#DIV/0!			4,506		4,506			
																		-	-	-	-		
TOTAL	5	91	4,517	1,090	1,817	840	1,431	7,716	292	13,186	-	-	3,217	3,217		-	319	18,022	2,789	20,811	120	12	50

[illegible]

CARPARK				GFA						NSA					RESIDENTIAL					TOTAL			
LEVEL	No	Lot SIZE	CARPARK GFA	GFA SERVICES	GFA COMMON / CIRCULATION	GFA COMMERCIAL	GFA RES GROUND	GFA RES LVL01	AMENITY (INTERNAL)	Total GFA	NLA COMMERCIAL	NLA RETAIL	NSA RESIDENTIAL	Total NSA / NLA	RESIDENTIAL EFFICIENCY	RESIDENTIAL TERRACE GFA	RES GARAGE	GBA	LANDSCAPED AREAS	GRAND TOTAL GBA	CARS	MOTORBIKE	BIKE
TYPE 1	10	308 to 411					151	151		3,020			182	182	121%	500	440	3,960		3,960			
TYPE 2	6	220 to 331		-			135	138		1,638			176	176		26	156	264	2,058		2,058		
TYPE 3	11	155 & 163					95	95		2,090			134			20	220	209	2,519		2,519		
TYPE 4	6	266					170	139		1,854			202			34	204	246	2,304		2,304		
TYPE 5	7	190 & 228					110	117		1,589			147			16	112	297	1,998		1,998		
TYPE 6	1	470					201	141		342			250			42		41	383		383		
	-	-						-		-						0		-		-			
TYPE 0	4	VARIOUS					183	217		1,600			291			40	160	186	1,946		1,946		
TOTAL		736	-	-	-	-	1,045	998	-	12,133	-	-	1,382	358			1,352	1,683	15,168	-	15,168	-	-

W/m2 L&P				40	40					10	
W/m2 A/C				43	53	-	-	-	-	-	
Watts	-	-	-	87,083	93,147	-	-	-	-	16,830	WATTS
Amps per Ph	-	-	-	121	130	-	-	-	-	23	274 AMPS / PHASE

FLOORS	APARTMENTS	CARPARK GFA	GFA							NSA					LANDSCAPED AREAS					TOTAL		
			GFA SERVICES	GFA COMMON / CIRCULATION	GFA COMMERCIAL	GFA RETAIL	GFA RESIDENTIAL	AMENITY (INTERNAL)	Total GFA	NLA COMMERCIAL	NLA RETAIL	NSA RESIDENTIAL	Total NSA / NLA	RESIDENTIAL EFFICIENCY	RESIDENTIAL TERRACE GFA	AMENITY EXTERNAL TERRACE GFA	GBA	LANDSCAPED AREAS	GRAND TOTAL GBA	CARS	MOTORBIKE	BIKE
827	4,517	4,517	1,090	1,817	840	2,476	8,714	292	25,319	-	-	4,599	3,575	-	1,352	2,002	33,190	2,789	35,979	120	12	50

[illegible]

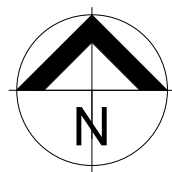
1439 kVA

APPENDIX B

SITE ELECTRICAL INFRASTRUCTURE



DO NOT SCALE



POWER POLE (PP1) TO BE DEMOLISHED,
ALONG WITH HV SUPPLY

POWER POLE (PP2) TO BE REMOVED AND
POWER RELOCATED TO UNDERGROUND.
TYPICAL FOR PP2 TO PP7 INCLUSIVE.

PASTEL YELLOW ZONE INDICATES AREA
WHERE OVERHEAD CABLING IS TO BE
UNDERGROUNDED.

SCOPE OF WORK NOTES

- UNDERGROUND LV AND HV CABLING IN THE
VICINITY OF THE YELLOW ZONE.
- REMOVE POWER POLES NUMBERED 1 TO 7.

PROPOSED LOCATION OF ERGON
SUBSTATION - 2 X 1000KVA TRANSFORMERS

TELSTRA PHONE BOX TO BE REMOVED /
RELOCATED.

NEXT POWER POLE DOWN THE PAGE MAY
REQUIRE UNDERGROUNDING ALSO, OR A
NEW POLE ON THE CORNER

ERGON WORKS - UNDERGROUND OHEAD
SCALE 1 : 500

DATE	REV	AMENDMENT	BY	CHKD

CLIENT:
GURNER

FOR:

DRAWING STATUS:
PRELIMINARY



PO BOX 188
REDLYNCH Q 4870
M +61 417 702 561
E info@hengineers.com.au
W hengineers.com.au

DRAWN:
HCE
CHECKED:
MH
APPROVED:
MH

PROJECT START DATE:
FEB 2023
PRINT IN COLOUR



PROJECT:
**GURNER - DAVIDSON STREET,
PORT DOUGLAS**
LOCATION:
Lots 1 & 2 on RP723702, Lots 3 & 4 on RP909815
& Emt A on RP860992

DRAWING TITLE:
**ELECTRICAL SERVICES
ERGON WORKS - UNDERGROUNDING O'HEAD**

SCALE @ A1: 1 : 500	PROJECT No: J000144	DRAWING No: E10	REV:
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APPENDIX C

ERGON APPLICATION REFERENCE



Mark Hopkinson | Hopkinson Consulting Engineers

From: ergonportal@ergon.com.au
Sent: Tuesday, 7 March 2023 12:36 PM
To: Mark Hopkinson | Hopkinson Consulting Engineers
Subject: Ergon Energy Network Enquiry CX23DAV0438238Q has been submitted.

An Ergon Energy Network Enquiry has been submitted for PANDANUS CARAVAN PARK SITE Lot: 1 RP723702 DAVIDSON Street PORT DOUGLAS QLD 4877, NMI - Unknown.

The Service Type is: Asset Relocation

The Enquiry reference is: CX23DAV0438238Q

Ergon Energy will evaluate your enquiry and contact you if further information is required.

Visit <https://www.ergon.com.au/network/connections/new-connections-and-connection-alterations/apply-for-connection-services> for more information on the Ergon Energy Network Connection Contract process.

Regards

Ergon Energy

To view status updates, visit [Ergon Self Service](#) (Go to *Track Service Orders*)

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Attachment 11

Assessment against Douglas Shire Council Planning Scheme 2018 v1



DEVELOPMENT & PROPERTY SERVICES

6.2.14 Tourist accommodation zone code

6.2.14.1 Application

- (1) This code applies to assessing development in the Tourist accommodation zone.
- (2) When using this code, reference should be made to Part 5.

6.2.14.2 Purpose

- (1) The purpose of the Tourist accommodation zone code is to provide for short-term accommodation supported by community uses and small-scale services and facilities in locations where there are tourist attractions.
- (2) The local government purpose of the code is to:
 - (a) implement the policy direction set in the Strategic Framework, in particular:
 - (i) Theme 4 : Strong communities and identity, Element 3.7.4 – Sense of place, community and identity.
 - (ii) Theme 5 – Economy. Element 3.8.2 – Economic growth and diversification, Element 3.8.2 – Tourism.
 - (b) provide for tourist accommodation development to establish in areas close to commercial and recreational services and facilities.
- (3) The purpose of the code will be achieved through the following overall outcomes:
 - (a) A range of accommodation activities, with an emphasis on short-term accommodation is established at a scale and density to service tourist needs.
 - (b) Tourist development is of an appropriate scale and achieves an attractive built form which incorporates the character and natural attributes of the site and the surrounding area as integral features of the theme and design of the development.
 - (c) Development facilitates opportunities for establishing tourist facilities and services within, or adjacent to, tourist accommodation to complement the tourist accommodation and enhance the attractiveness of tourist areas.
 - (d) Development is designed to take into account the tropical climate by incorporating appropriate architectural elements and design features.
 - (e) Landscaping of tourist development is of a high quality and contributes to the visual dominance of tropical vegetation and the local streetscape.
 - (f) Community facilities, open space and recreational areas and appropriate infrastructure to support the needs of the local community are provided.

6.2.14.3 Criteria for assessment

Table 6.2.14.3.a – Tourist accommodation zone code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		



<p>PO1 The height of all buildings and structures must be in keeping with the residential character of the area.</p>	<p>AO1 Buildings and structures are not more than 13.5 metres and 3 storeys in height.</p> <p>Note – Height is inclusive of roof height.</p>	<p>Complies with AO1.</p> <p>The proposed Resort Complex development is 13 metres and 3 storeys in height.</p> <p>The Short Term Accommodation/ Multiple Dwelling Villas are 2 storeys and between 6.3 – 6.7metres in height depending on the typology.</p>
<p>Setbacks (other than for a dwelling house)</p>		
<p>PO1 Buildings are setback to:</p> <ul style="list-style-type: none"> (a) maintain the character and amenity of the area; (b) achieve separation from neighbouring buildings and from road frontages. 	<p>AO1 Buildings are setback:</p> <ul style="list-style-type: none"> (a) a minimum of 6 metres from the main street frontage; (b) a minimum of 4 metres from any secondary street frontage; (c) 4.5 metres from a rear boundary; (d) 2 metres from a side or an average of half of 	<p>Complies with PO1.</p> <p>A detailed setback plan is provided in the Development Plans at Attachment 3.</p> <p>The setbacks are as follows-</p> <ul style="list-style-type: none"> (a) Main Street Frontage – 6m – 23.6m (b) Secondary Street Frontage – 4m – 4.5m (c) Rear Boundary – 3.3m – 6.8m (d) Side boundary – 1m – 3.8m. <p>The Main Street Frontage and Secondary Street Frontage setbacks comply with the AO.</p> <p>The rear boundary abuts a wide road reserve which contains Railway Service Lane which has minimal use. The reduced setback in this location is considered appropriate as there is an extensive vegetated buffer between the site boundary and the formed road.</p> <p>The reduced setbacks to the site boundary adjacent Lychee Tree Holiday apartments. The apartments at that location face internally to the</p>



		<p>site and are separated from the property boundary by existing landscaping. As such, the reduced setbacks still achieve sufficient separation from the adjoining units.</p> <p>The height of the buildings in this location is only 6.3 – 6.7m.</p>
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Performance outcomes	Acceptable outcomes	Applicant response
	the height of the building at the side setback, whichever is the greater.	
Site coverage (other than for a dwelling house)		
PO2 The site coverage of all buildings does not result in a built form that is bulky or visually obtrusive.	AO2 The site coverage of any building is limited to 50%	<p>Complies with PO2.</p> <p>The overall site coverage is limited to 50%.</p> <p>Technically, once the CTS lots are created that Short Term Accommodation/Multi Unit villas will exceed 50% site coverage of the created lot.</p> <p>This is a technicality and the site coverage overall does not result in a built form that is bulky of visually obtrusive.</p>
Building proportions and scale (other than for a dwelling house)		

**PO3**

The proportions and scale of any development are in character with the area and local streetscape.

AO3.1

The overall length of a building does not exceed 30 metres and the overall length of any continuous wall does not exceed 15 metres.

AO3.2

Balconies, patios and similar spaces are not enclosed or capable of being enclosed and used as a habitable room.

AO3.3

Balconies, patios and similar spaces are designed to be open and light weight in appearance with a maximum of 20% of the façade being fully enclosed.

AO3.4

Roof forms, materials and colours of buildings enhance the amenity of the street and locality, including:

- (a) the roofs of buildings are light coloured and non-reflecting;
- (b) white and shining metallic finishes are avoided on external surfaces in prominent view.

Note – The building incorporates building design features and architectural elements detailed in Planning scheme policy SC 6.2 – Building design and architectural elements.

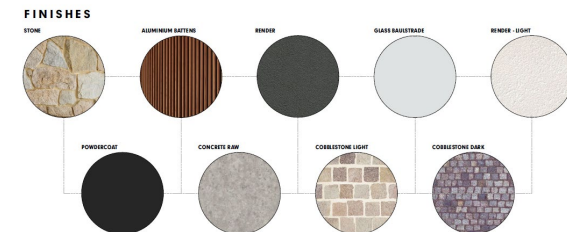
Complies with PO3.

The overall length of the Resort Complex building technically exceeds 30 metres but the large open entrance ensures that it does not appear bulky or obtrusive. The built form provides for a high degree of articulation and landscaping. The length is necessitated by the curved appearance of the structure.

Balconies and patios are spacious and in open in keeping with the tropical design of the built form.

The Facades of the buildings and structures are finished with natural tones and materials and are non-reflective. Additionally, the built form is screened by extensive landscaping both on the building façade and surrounding the built form.

The finishes are detailed in Attachment 3 and generally consist of the following-



Landscaping (other than for a dwelling house)

**PO4**

Landscape planting is provided for the recreational amenity of residents/guests and incorporates dominant tropical vegetation which enhances the streetscape and the amenity of the area.

AO4.1

A minimum of 35% of the site is provided as open space and recreation area with a minimum of 30% of this total; area provided for landscape planting.

AO4.2

Within the frontage setback area, a minimum width of 2 metres of landscape area includes a minimum 75% dense planting.

AO4.3

Within the side and rear setback areas, a minimum width of 1.5 metres of landscape area includes 75% dense planting.

Complies with PO4

Over 35% of the site consists of garden areas, parkland, or water bodies which form part of the hard landscaping.

A minimum 6m frontage is proposed for the front setback. This area is extensively landscaped providing a sense of arrival at a luxury tropical hotel.

Extensive landscaping is proposed throughout the development and at each property boundary. The development also benefits from the existing vegetation on Davidson Street, the Railway Service Lane reserve and Crimmins Street.

Detailed site plans and landscaping plans are provided at Attachment 3.



Performance outcomes	Acceptable outcomes	Applicant response
For assessable development		
PO5 The establishment of uses is consistent with the outcomes sought for the Tourist accommodation zone and protects the zone from the intrusion of inconsistent uses.	AO5 Inconsistent uses as identified in Table 6.2.14.3.b are not established in the Tourist accommodation zone.	Complies with AO5. The proposed Short Term Accommodation / Multiple Dwelling Villas, and Resort Complex are all consistent uses within the Tourist Accommodation Zone.
PO6 Development is located, designed, operated and managed to respond to the characteristics, features and constraints of the site and surrounds. Note – Planning scheme policy – Site assessments provides guidance on identifying the characteristics, features and constraints of a site and its surrounds.	AO6 No acceptable outcomes are prescribed.	Complies with PO6. The proposed development has been informed by extensive flood and stormwater studies, geotechnical studies, and hydrological design. Additionally, the proposed development is reflective of the low rise tourist accommodation currently developed in the area. The site is not mapped as containing any protected vegetation or natural areas. All vegetation on site has been established as a result of previous landscaping schemes associated with the existing use.
PO7 Development does not adversely affect the tropical, tourist and residential character and amenity of the area in terms of traffic, noise, dust, odour, lighting or other physical or environmental impacts.	AO7 No acceptable outcomes are prescribed.	Complies with PO7. The proposed development is consistent with the intent for the zone.



<p>PO8 Any loading/unloading areas, servicing areas and outdoor storage areas are screened from public view or adjacent sensitive uses.</p>	<p>AO8 Outdoor loading/unloading, servicing and storage areas are sited or screened so they are: (a) not visible from any off-site public place; (b) not located adjacent to premises used for sensitive uses.</p>	<p>Complies with AO8.</p> <p>Loading and unloading is provided for within the Resort Complex building and servicing occurs from Crimmins Street.</p>
<p>PO9 Tourist developments include recreational and ancillary services and facilities for the enjoyment of guests.</p>	<p>AO9.1 Development which includes accommodation for tourists incorporates a mix of the following recreational and ancillary services and facilities: (a) swimming pools; (b) tennis courts; (c) barbecue areas; (d) outdoor lounging / recreation areas; (e) restaurants / bars; (f) tourist-focussed shopping; (g) tour booking office; (h) spa / health clubs.</p> <p>AO9.2 Any commercial services or facilities incorporated into a tourist development are small scale and predominantly service in-house guests only.</p> <p>AO9.3 Where a commercial service or facility offers services to persons over and above in-house guests, the commercial component provides on- site car parking for 50% of the floor area available for use in accordance with the relevant requirements of the Parking and access code.</p>	<p>Complies with PO9</p> <p>The Resort Complex provides the following services for visitors and guests-</p> <p>(a) Swimming pools (b) Outdoor lounging/recreation areas (c) Restaurants (d) Spa/gym/wellness services/kids clubs etc.</p> <p>Commercial services are also available to external patrons including bars and restaurants. They are of an appropriate scale considering the size of the Resort Complex and will be used predominantly by visitors.</p> <p>A detailed carparking analysis is provide in the Traffic Impact Assessment at Attachment 6 and in the Access, Parking, and Servicing code compliance.</p>
<p>PO10 New lots contain a minimum area of 1000m².</p>	<p>AO10 No acceptable outcomes are prescribed.</p>	<p>The proposed development does not technically comply with PO10.</p> <p>The reconfiguration outcomes in the Tourist Accommodation Zone code anticipate 1000m² lots.</p> <p>The purpose of this lot size is to facilitate Tourist Accommodation outcomes.</p>



		<p>The proposed development is for Short Term Accommodation and Multiple Dwellings and meets the intent of the Tourist Accommodation Zone code.</p> <p>The Reconfiguring a Lot aspect of the development is a technical aspect to create the Community Title Scheme Development for the Resort Complex (Hotel lot) and the Short Term Accommodation/Multi Unit Dwelling (Villa) lots.</p> <p>Whilst the lots proposed are less than 1000m², the proposal meets the purpose of the Reconfiguring a Lot code and the Tourist Accommodation Zone Code.</p>
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Performance outcomes	Acceptable outcomes	Applicant response
<p>PO11 New lots have a minimum road frontage of 20 metres.</p>	<p>AO11 No acceptable outcomes are prescribed.</p>	<p>The proposed development does not technically comply with PO11.</p> <p>The reconfiguration outcomes in the Tourist Accommodation Zone code anticipate 1000m² lots.</p> <p>The purpose of this lot size is to facilitate Tourist Accommodation outcomes.</p> <p>The proposed development is for Short Term Accommodation and Multiple Dwellings and meets the intent of the Tourist Accommodation Zone code.</p> <p>The Reconfiguring a Lot aspect of the development is a technical aspect to create the Community Title Scheme Development for the Resort Complex (Hotel lot) and the Short Term Accommodation/Multi Unit Dwelling (Villa) lots.</p> <p>In this circumstance the proposal meets the purpose of the Reconfiguring a Lot code and the</p>



		Tourist Accommodation Zone Code.
PO12 New lots contain a 25 metre x 20 metre rectangle.	AO12 No acceptable outcomes are prescribed.	<p>The proposed development does not technically comply with PO12.</p> <p>The reconfiguration outcomes in the Tourist Accommodation Zone code anticipate 1000m² lots.</p> <p>The purpose of this lot size is to facilitate Tourist Accommodation outcomes.</p> <p>The proposed development is for Short Term Accommodation and Multiple Dwellings and meets the intent of the Tourist Accommodation Zone code.</p> <p>The Reconfiguring a Lot aspect of the development is a technical aspect to create the Community Title Scheme Development for the Resort Complex (Hotel lot) and the Short Term Accommodation/Multi Unit Dwelling (Villa) lots.</p> <p>In this circumstance the proposal meets the purpose of the Reconfiguring a Lot code and the Tourist Accommodation Zone Code.</p>

Table 6.2.14.3.b — Inconsistent uses within the Tourist accommodation zone

Inconsistent uses



<ul style="list-style-type: none"> • Adult store • Agricultural supplies store • Air services • Animal husbandry • Animal keeping • Aquaculture • Brothel • Bulk landscape supplies • Cropping • Detention facility • Extractive industry • Funeral parlour • Garden centre • Hardware and trade supplies • Health care services • High impact industry • Indoor sport and recreation • Intensive animal industry 	<ul style="list-style-type: none"> • Intensive horticulture • Landing • Low impact industry • Major electricity infrastructure • Major sport, recreation and entertainment facility • Marine industry • Market • Medium impact industry • Motor sport facility • Nightclub entertainment facility • Office • Outdoor sales • Outdoor sport and recreation • Outstation • Park • Parking station 	<ul style="list-style-type: none"> • Permanent plantation • Port services • Renewable energy facility • Roadside stall • Rural industry • Rural workers accommodation • Service station • Shopping centre • Showroom • Special industry • Substation • Theatre • Transport depot • Veterinary services • Warehouse • Wholesale nursery • Winery
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Note – This table does not imply that all other uses not listed in the table are automatically consistent uses within the zone. Assessable development must still demonstrate consistency through the assessment process.

9.3.3 Centre activities code

9.3.3.1 Application

- (1) This code applies to assessing development for:
- (a) for Centre activities; and
 - (b) all development in a Centre zone, if:
 - (i) if assessable development where the code is an applicable code identified in the assessment criteria column of a table of assessment; or
 - (ii) impact assessable.
- (2) When using this code, reference should be made to Part 5.

9.3.3.2 Purpose

- (1) The purpose of the Centre activities code is to facilitate the timely establishment of centre activities within the Centre zone.
- (2) The purpose of the code will be achieved through the following overall outcomes;
- (a) within the Centre zone, to ensure that centre activities:
 - (i) facilitates the timely establishment of specified uses that require only minor building work to an existing premises;
 - (ii) has a scale, intensity and operation of the use of premises that is consistent with existing floor space and infrastructure.

9.3.3.3 Criteria for assessment

Table 9.3.3.3.a – Centre activities code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
Change of use within existing building or facilities		
PO1 Development that involves a change of use within an existing building ensures: (a) changes to floor space of the centre activity is minor; (b) the appropriate design and amenity standards for the centre activity is maintained.	AO1 The centre activity: (a) is a use listed in Schedule 1, Table SC1.1.1.2 – Centre Activities; (b) is not a use listed in Schedule 1, Table SC1.1.1.2 – Large format retail activities; (c) is located within the Centre zone; (d) is for a tenancy change only; (e) involves only minor building work to an existing building; (f) complies with the car parking requirements specified in	Not applicable.



	<p>(g) Table 9.4.1.3.b in the Access, parking and servicing code.</p> <p>Note - The whole development means the entire building or activity on a site (or sites) where shared parking areas are utilised.</p>	
<p>PO2 Building plant or equipment cannot be viewed from public places.</p>	<p>AO2.1 Plant or equipment is not located on roofs; or</p> <p>AO2.2 Where plant or equipment is placed on roofs, it is appropriately screened from the streetscape behind a parapet or similar design feature.</p>	<p>Not applicable.</p>
For assessable development		
<p>PO3 Development is located: (a) within an existing Centre zone; (b) a building containing an existing centre activity; (c) on a site identified as being suitable for Centre activities in a Local plan.</p>	<p>AO3 No acceptable outcomes are prescribed.</p>	<p>Complies with PO3.</p> <p>The Tourist Accommodation Zone identifies acknowledges that small scale centre activities associated with Tourist Accommodation ie. Bars and restaurants will occur as part of a Resort Complex and as such are consistent with the zone.</p>



Performance outcomes	Acceptable outcomes	Applicant response
<p>PO4 A centre activity is only established outside an appropriately identified area where: (a) community need is demonstrated for the centre; (b) the centre activity does not compromise the establishment of consolidated activity centres with distinct roles and functions across the Far North Queensland Region; (c) the centre activity does not compromise the established hierarchy of activity centres in the Far North Queensland Region; the centre activity does not compromise the character and amenity of surrounding areas.</p> <p>Note – An appropriately identified area is defined in PO3 of this code.</p> <p>Note – Refer to the Far North Queensland Regional Plan to determine the distinct roles and functions, and the established hierarchy of activity centres in Far North Queensland.</p>	<p>AO4 No acceptable outcomes are prescribed.</p>	<p>Complies with PO4</p> <p>The Tourist Accommodation Zone identifies acknowledges that small scale centre activities associated with Tourist Accommodation ie. Bars and restaurants will occur as part of a Resort Complex and as such are consistent with the zone.</p>
<p>PO5 The siting of buildings contributes to the desired amenity and character of the area and protect the amenity of other land uses.</p>	<p>AO5.1 Buildings setbacks to road frontages are: (a) in accordance with the provisions of any applicable Local plan; (b) a minimum of 6 metres where no Local plan applies or there are no particular provisions specified in the Local pan for the site.</p> <p>AO5.2 Where adjoining land in the Industry Zone, buildings are setback: (a) 0 metres from the side and rear boundaries; or (b) 2.5 metres or ¼ of the height of the building, which ever if the greater; and (c) not any distance between 0 metres and 2.5 metres.</p> <p>AO5.3 Where adjoining land in any other zone, buildings</p>	<p>Complies with PO5</p> <p>The proposed Centre Activities are contained within the Resort Complex and form part of the overall Resort complex therefore they do not need to be independently defined. The proposed building contributes to the amenity and character of the area and protects the amenity of other land uses that are proximate to the proposed development.</p>



	<p>are setback 3.0 metres or $\frac{1}{4}$ of the height of the building, whichever is the greater and are provided with an acoustic barrier in accordance with the recommendations of a qualified acoustic expert.</p> <p>AO5.4 Setback areas are provided with a 2 metre landscaped strip capable of deep planting, which is kept clear of service equipment and storage areas: (a) adjacent to the road frontage in all areas not required for pedestrian or vehicular access for the setback area nominated in AO5.1(b) above; (b) adjacent to the boundary with the other zone for the setback</p>	
<p>PO6 The site coverage of buildings ensures that there is sufficient space available to cater for services, landscaping and on-site parking.</p>	<p>AO6 Site coverage does not exceed 50%, unless otherwise specified in a Local plan.</p>	<p>Complies with AO6</p> <p>The centre activities are contained within the Resort Complex and these elements are addressed in the applicable zone and use codes.</p>
<p>PO7 Building façades are articulated and finished in ways that respond to the attractive elements of surrounding buildings, and enhances existing streetscape character.</p>	<p>AO7 Building facades are articulated and finished with design elements such as: (a) variations in plane shape, such as curves, steps, recesses or projections; (b) variations in treatment and patterning of windows, sun protection devices, or other elements of the façade; (c) elements of finer scale, than the main structural framing.</p>	<p>Complies with AO7</p> <p>The centre activities are contained within the Resort Complex and these elements are addressed in the applicable zone and use codes.</p>
<p>PO8 Development results in an attractive streetscape that: (a) contributes to a high level of amenity for patrons and pedestrians; (b) facilitates interactions between the public and private realm.</p>	<p>AO8.1 Ground floor levels of buildings incorporate activities that are likely to foster casual, social or business interaction for extended periods (such as Shops, Food and drink outlets and the like).</p> <p>AO8.2 Where a building has frontage to a public street or other public or semi public space, an active</p>	<p>Complies with PO8</p> <p>The centre activities are contained within the Resort Complex and these elements are addressed in the applicable zone and use codes.</p> <p>.</p>



	<p>frontage is provided which includes a minimum of 75% of the façade consisting of transparent or semi-transparent windows or glazed doors.</p> <p>AO8.3 Frontages to public streets or other public or semi public spaces are articulated with vertical elements that emphasise a finer-grain and human scale to the building frontage.</p> <p>AO8.4 Where buildings are constructed up to a road frontage, a cantilever awning is to be provided over the footpath of the site, to the full frontage of the site, with a setback of 1 metre from the face of the kerb, and; (a) with a maximum height of 3 metres to the underside of the awning; or (b) at a height consistent with, or stepping up or down to, the awning structures on buildings on adjoining sites.</p>	
<p>PO9 Development provides for the site to be landscaped in a manner that is consistent with the function, location and setting of the development.</p>	<p>AO9.1 A minimum of 10% of the site is set aside for landscape planting.</p> <p>AO9.2 Landscaping is provided in accordance with the following: (a) a mixture of shade trees and low planting is provided along street frontages where buildings are setback from the frontage; (b) shade trees are provided in car parks; (c) a landscaped area is provided between the centre activity, associated car parking and any adjacent residential use or zone which: (i) has a minimum width of 3 metres and is not used for storage or mechanical plant; (ii) is planted with a variety of hardy screening shrubs and trees; (iii) incorporates a minimum 1.8 metre high solid screen fence.</p>	<p>Complies with PO9</p> <p>The centre activities are contained within the Resort Complex and these elements are addressed in the applicable zone and use codes.</p> <p>.</p>



	<p>Note – Additional fencing requirements beyond the minimum standard may be required for acoustic and lighting attenuation purposes in accordance with AO5.3.</p>	
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9.3.13 Multiple dwelling, short term accommodation and retirement facility code

9.3.13.1 Application

- (1) This code applies to assessing development for a Multiple dwelling, short term accommodation, residential care facility or retirement facility if:
 - (a) assessable development where the code is an applicable code identified in the assessment criteria column of a table of assessment for a material change of use; or
 - (b) impact assessable development.
- (2) When using this code, reference should be made to Part 5.

9.3.13.2 Purpose

- (1) The purpose of the Multiple dwelling, short term accommodation and retirement facility code is to assess the suitability of development to which this code applies.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) development is compatible with and complementary to surrounding development, with regard to scale, bulk, and streetscape patterns;
 - (b) master planning is undertaken for larger developments to ensure connectivity and integration with adjoining uses and the wider neighbourhood;
 - (c) development does not adversely impact on the natural features on the site;
 - (d) the design of development creates a pleasant living environment and is appropriate for the tropical climate of the region;
 - (e) the impacts of development on adjoining premises are managed.

9.3.13.3 Criteria for assessment

Table 9.3.13.3.a – Multiple dwelling, short term accommodation and retirement facility code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For assessable development		



<p>PO1 The site has sufficient area and frontage to:</p> <ul style="list-style-type: none"> (a) accommodate the scale and form of buildings considering site features; (b) achieve communal open space areas and private outdoor spaces; (c) deliver viable areas of deep planting and landscaping to retain vegetation and protect or establish tropical planting; (d) achieve safe and convenient vehicle and pedestrian access; (e) accommodate on-site car parking and manoeuvring for residents, visitors and service providers. 	<p>AO1.1 The site has a minimum area of 1000m².</p> <p>AO1.2 The site has a minimum frontage of 25 metres.</p>	<p>Complies with AO1.1</p> <p>The proposed site is 2.59Ha.</p> <p>Complies with AO1.2</p> <p>The site frontage is approximately 202m to Davidson Street (service road).</p>
<p>PO2 Development for large-scale multiple dwellings, short term accommodation and retirement villages contributes to the neighbourhood structure and integrates with the existing neighbourhood through:</p> <ul style="list-style-type: none"> (a) the establishment and extension of public streets and pathways; (b) the provision of parks and other public 	<p>AO2 Development on a site 5,000m² or greater is in accordance with a structure plan.</p> <p>Note – Guidance on preparing a structure plan is provided within Planning scheme policy SC6.14 – Structure planning.</p>	<p>Complies with AO2</p> <p>A structure plan has been provided to support the proposed development.</p>



Performance outcomes	Acceptable outcomes	Applicant response										
<p>spaces as appropriate to the scale of the development;</p> <p>(c) inclusion of a mix of dwelling types and tenures and forms;</p> <p>(d) buildings that address the street;</p> <p>(e) building height and setback transitions to adjoining development of a lower density or scale.</p>												
<p>PO3</p> <p>Development ensures that the proportion of buildings to open space is:</p> <p>(a) in keeping with the intended form and character of the local area and immediate streetscape;</p> <p>(b) contributes to the modulation of built form;</p> <p>(c) supports residential amenity including access to breezes, natural light and sunlight;</p> <p>(d) supports outdoor tropical living;</p> <p>(e) provides areas for deep tropical planting and / or for the retention of mature vegetation.</p>	<p>AO3.1</p> <p>The site cover is not more than 40%.</p> <p>AO3.2</p> <p>The development has a gross floor area of not more than:</p> <table><tr><th>Zone</th><th>Maximum GFA</th></tr><tr><td>Low-medium density residential</td><td>0.8 x site area</td></tr><tr><td>Medium density residential</td><td>1.2 x site area</td></tr><tr><td>Tourist accommodation</td><td>1.2 x site area</td></tr><tr><td>All other zones</td><td>No acceptable outcome specified</td></tr></table>	Zone	Maximum GFA	Low-medium density residential	0.8 x site area	Medium density residential	1.2 x site area	Tourist accommodation	1.2 x site area	All other zones	No acceptable outcome specified	<p>Complies with PO3.</p> <p>Site cover in the Tourist Accommodation zone allows for 50%.</p> <p>As the proposal is for multiple development aspects each component of the development needs to be considered on its merits.</p> <p>The development has been designed to reflect the form and character of the Tourist Accommodation Zone on Davidson Street. The superior architectural design of the Hotel and the Villas set amidst lush tropical landscaping improves the immediate streetscape of the site.</p> <p>The built form of the hotel allows for articulation and the use of Villas at the site boundaries provides modulation of built form.</p> <p>The Development has been designed specifically with luxury residential living in mind and responds to the sites characteristics in terms of access to breezes and natural light.</p> <p>The site provides extensive and expertly designed tropical landscaping and where mature vegetation cannot be retained, vegetation</p>
Zone	Maximum GFA											
Low-medium density residential	0.8 x site area											
Medium density residential	1.2 x site area											
Tourist accommodation	1.2 x site area											
All other zones	No acceptable outcome specified											



		capable of reaching maturing in the short term in proposed.
<p>PO4 Development is sited so that the setback from boundaries:</p> <ul style="list-style-type: none"> (a) provides for natural light, sunlight and breezes; (b) minimises the impact of the development on the amenity and privacy of neighbouring residents; (c) provides for adequate landscaping. 	<p>AO4.1 Buildings and structures are set back not less than 6 metres from a road frontage.</p> <p>AO4.2 Buildings and structures are setback not less than 4 metres to the rear boundary.</p> <p>AO4.3 The side boundary setback for buildings and structures is:</p> <ul style="list-style-type: none"> (a) for buildings up to 2 storeys not less than 2.5 metres for the entire building; (b) for buildings up to 3 storeys not less than 3.5 metres for the entire building. 	<p>Complies with PO4.</p> <p>A detailed setback plan is provided in the Development Plans at Attachment 3.</p> <p>The setbacks are as follows-</p> <ul style="list-style-type: none"> (a) Main Street Frontage – 6m – 23.6m (b) Secondary Street Frontage – 4m – 4.5m (c) Rear Boundary – 3.3m – 6.8m (d) Side boundary – 1m – 3.8m. <p>The Main Street Frontage and Secondary Street Frontage setbacks comply with the AO.</p> <p>The rear boundary abuts a wide road reserve which contains Railway Service Lane which has minimal use. The reduced setback in this location is considered appropriate as there is an extensive vegetated buffer between the site boundary and the formed road.</p> <p>The reduced setbacks to the site boundary adjacent Lychee Tree Holiday apartments. The apartments at that location face internally to the site and are separated from the property boundary by existing landscaping. As such, the reduced setbacks still achieve sufficient separation from the adjoining units.</p> <p>The height of the buildings in this location is only 6.3 – 6.7m.</p>

**PO5**

- Building depth and form must be articulated to
- (a) ensure that the bulk of the development is in keeping with the form and character intent of the area;
 - (b) provide adequate amenity for residents in terms of natural light and ventilation.

Note – Planning scheme policy SC6.1 – Building design and architectural elements provides guidance on reducing building bulk.

AO5.1

- (a) The maximum length of a wall in any direction is 30 metres with substantial articulation provided every 15 metres.
- (b) The minimum distance between buildings on a site is not less than 6 metres;

AO5.2

The length of any continuous eave line does not exceed 18 metres.

Complies with PO5.

The overall length of the Resort Complex technically exceeds 30 metres but the large open entrance ensures that it does not appear bulky or obtrusive. The built form provides for a high degree of articulation and landscaping. The length is necessitated by the curved appearance of the structure.

PO6

Development reduces the appearance of building bulk, ensures a human-scale, demonstrates variations in horizontal and vertical profile and

AO6.1

Development incorporates a number of the following design elements:

- (a) balconies;

Complies with AO 6.1 & AO 6.2

Balconies and patios are spacious and in open in keeping with the tropical design of the built form.

The facades of the buildings and structures are finished with natural tones and materials and are non-reflective. Additionally, the built form is screened by extensive landscaping both on the building façade and surrounding the built form.

The finishes are detailed in Attachment 3 and generally consist of the following-





Performance outcomes	Acceptable outcomes	Applicant response
supports streetscape character.	(b) verandahs; (c) terraces; (d) recesses. AO6.2 Development reduces building bulk by: (a) variation in building colours, materials and textures; (b) the use of curves, recesses, projections or variations in plan and elevation; (c) recession and projection of rooflines and the inclusion of interesting roof forms, such as cascading roof levels, gables, skillions or variations in pitch; (d) use of sun-shading devices and other façade features; (e) use of elements at a finer scale than the main structural framing of the building.	
PO7 Development provides a building that must define the street to facilitate casual surveillance and enhance the amenity of the street through: (a) orientation to the street; (b) front boundary setback; (c) balconies and windows to provide overlooking and casual surveillance; (d) building entrances.	AO7.1 Development provides a building that is not set back further than 2m beyond the minimum required street front setback. AO7.2 Development provides balconies and windows from the primary living area that face and overlook the street or public space.	Complies with AO 7.1 and AO7.2 The Short Term Accommodation / Multiple Dwelling Villa aspect of the Development is not setback further than 2m beyond the minimum required street front setback. Whilst balconies face inwards windows of habitable rooms front Davidson Street and allow for passive surveillance. Also, the nature of a luxury brand hotel will mean continuous operations of the facility allow for passive surveillance of the site boundaries.



<p>PO8 Buildings exhibit tropical design elements to support Douglas Shire's tropical climate, character and lifestyle.</p>	<p>AO8.1 Development has floor to ceiling heights of 2.7 metres;</p> <p>AO8.2 Buildings include weather protection and sun shading to all windows to all external doors and windows of habitable rooms.</p> <p>AO8.3 Development incorporates deep recesses, eaves and sun-shading devices</p> <p>AO8.4 Western orientated facades are shaded using building and landscape elements, such as adjustable screens, awnings or pergolas or dense tropical planting.</p> <p>AO8.5 Individual dwelling units are not located on both sides of an enclosed central corridor (i.e. not double banked).</p>	<p>Complies with PO8.</p> <p>Details of the architectural design considerations are provided in detail in Attachment 3.</p> <p>The Luxury Resort Complex and Short Term Accommodation / Multiple Dwelling Villas have been designed by Hunt Design who have been instrumental in developing the tropical design elements that define Port Douglas today.</p>
<p>PO9 Development minimises direct overlooking between buildings through appropriate building layout, location and the design of windows and balconies or screening devices.</p> <p>Note—Siting and building separation is used to minimise</p>	<p>AO9.1 Development where the dwelling is located within 2 metres at ground level or 9 metres above ground level of a habitable room window or private open space of an existing dwelling house, ensures habitable rooms and any private outdoor spaces have:</p>	<p>Complies with PO9</p> <p>The Resort Complex has been designed to allow for alternate terrace and pool views to prevent overlooking.</p> <p>The Short Term Accommodation / Multiple Dwelling Villas are separated by internal roadways and landscaping. The Villas abutting the Resort Complex are separated by extensive landscaping.</p> <p>Screening will be used where required as part of a built form solution to prevent overlooking.</p>



Performance outcomes	Acceptable outcomes	Applicant response
privacy screening requirements.	<p>(a) an offset from the habitable room or private open space of the existing dwelling to limit direct outlook; or</p> <p>(b) sill heights a minimum of 1.5m above floor level; or</p> <p>(c) fixed obscure glazing in any part of the window below 1.5m above floor level; or</p> <p>(d) fixed external screens; or</p> <p>(e) in the case of screening for a ground floor level unit, fencing to a minimum 1.8m above the ground storey floor level.</p> <p>AO9.2 Development where a direct view is available from balconies, terraces, decks or roof decks into windows of habitable rooms, balconies, terraces or decks in an adjacent existing dwelling house, is screened from floor level to a height above 1.5m above floor level.</p> <p>AO9.3 Development provides screening devices that are solid translucent screens, perforated or slatted panels or fixed louvres that have a maximum of 25% openings, with a maximum opening dimension of 50mm, and that are permanent and durable.</p> <p>Note—The screening device is offset a minimum of 0.3m from the wall around any window.</p> <p>Note—Screening devices are hinged or otherwise attached to facilitate emergency egress</p>	
<p>PO10 Development provides accessible and functional landscaping and recreation area for the benefit of residents/guests.</p>	<p>AO10 A minimum of 35% of the site is allocated as landscaping and recreation area.</p>	<p>Complies with PO10</p> <p>Over 35% of the site consists of garden areas, parkland, or water bodies which form part of the hard landscaping.</p>



<p>PO11 Landscaping must contribute positively to the amenity of the area, streetscape and public spaces.</p>	<p>AO11 Development provides landscaping as follows: (a) A dense landscape planting strip of at least 2 metres width suitable for deep planting is provided and maintained along all street frontages; (b) A dense landscape planting strip of at least 1.5 metres width suitable for deep planting is provided along all side and rear boundaries.</p>	<p>Complies with PO11</p> <p>A minimum 6m frontage is proposed for the front setback. This areas is extensively landscaped providing a sense of arrival at a luxury tropical hotel.</p> <p>Extensive landscaping is proposed throughout the development and at each property boundary. The development also benefits from the existing vegetation on Davidson Street, the Railway Service Lane reserve and Crimmins Street.</p> <p>Detailed site plans and landscaping plans are provided at Attachment 3.</p>
<p>PO12 The landscaping and recreation area provides for functional communal open space for all developments exceeding five dwellings on one site.</p>	<p>AO12.1 Communal open space is provided at: (a) a minimum of 5% of site area of 50m² whichever is the greater; and (b) a minimum dimension of 5 metres.</p> <p>AO12.2 Development provides communal open space that: (a) is consolidated into one useable space; (b) where communal open space exceeds 100m², the communal open space may be</p>	<p>Complies with PO12.</p> <p>Over 35% of the site consists of garden areas, parkland, or water bodies which form part of the hard landscaping.</p> <p>A minimum 6m frontage is proposed for the front setback. This areas is extensively landscaped providing a sense of arrival at a luxury tropical hotel.</p> <p>Extensive landscaping is proposed throughout the development and at each property boundary. The development also benefits from the existing vegetation on Davidson Street, the Railway Service Lane reserve and Crimmins Street.</p> <p>Detailed site plans and landscaping plans are provided at Attachment 3.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>split into two, and so forth incrementally.</p> <p>AO12.3 Communal open space:</p> <ul style="list-style-type: none"> (a) is a minimum of 50% open to the sky; (b) achieves 25% shading by trees in 5 years; (c) does not include vehicle driveways and manoeuvring; (d) does not contain surface structures such as rainwater tanks, fire hydrants, transformers or water boosters. <p>AO12.4 Communal open space is designed to provide for a range of facilities, typically including some, or all, of the following elements:</p> <ul style="list-style-type: none"> (a) seating; (b) barbecue; (c) play equipment; (d) swimming pool; (e) communal clothes drying; (f) vegetable garden. <p>AO12.5 Development involving 5 or fewer dwellings on one lot can allocate additional private open space to a ground storey dwelling instead of providing communal open space.</p>	

**PO13**

Development must provide attractive and functional private open space for residents and guests.

AO13.1

Development provides private open space which:

- (a) for ground storey dwellings, comprises of a minimum area of 35m² with a minimum dimension of 3 metres;
- (b) for dwellings above ground storey, comprises of a balcony with minimum area of 12m² and a minimum dimension of 3 metres.

AO13.2

Development provides private open space areas that are:

- (a) directly accessible from internal primary living area of the dwelling (not bedrooms);
- (b) provided with a screened area of 2m² minimum dimension capable of screening air conditioning plant, private clothes drying etc...
- (c) provided with adjustable, moveable or operable privacy screening where appropriate.

AO13.3

Development provides balconies that are located to the front or rear of the building except where adequate building separation can be achieved to maintain privacy.

AO13.4

Where secondary balconies are provided to a

The proposed Development complies with PO13.

Overall, the proposal complies with AO13.1, AO13.3, AO 13.4, and AO13.5.

Each Short Term Accommodation / Multiple Dwelling Villa has at least extensive private recreational space consisting of roof terraces, balconies, and courtyards.

Each Resort Complex room has a balcony of 13m² – 15m².

Clothes washing and other servicing will be offered onsite.

Some outdoor recreational space is provided via bedroom access.



Performance outcomes	Acceptable outcomes	Applicant response
	<p>side of a building for additional amenity or services, such as clothes drying or to articulate facades, the setback may be reduced to the minimum setback, but these areas are not included in the calculation of private open space requirements.</p> <p>AO13.5 Private open space:</p> <ul style="list-style-type: none">(a) does not include vehicle driveways and manoeuvring;(b) does not contain surface structures such as rainwater tanks, fire hydrants, transformers or water boosters.	



<p>PO14 Development provides front fencing and retaining walls that must:</p> <ul style="list-style-type: none"> (a) facilitate casual surveillance of the street and public space; (b) enable use of private open space; (c) assist in highlighting entrances to the property; (d) provide a positive interface to the streetscape. 	<p>AO14.1 Development ensures that, where fencing is provided, the height of any new fence located on any common boundary to a street or public space is a maximum of:</p> <ul style="list-style-type: none"> (a) 1.2m, where fence construction is solid or less than 50% transparent; (b) 1.5m, where fence construction is at least 50% transparent; (c) 1.8m and solid only where the site is on an arterial road or higher order road. <p>AO14.2 Development incorporating solid front fences or walls that front the street or other public spaces and are longer than 10m, indentations, material variation or landscaping is provided to add visual interest and soften the visual impact</p> <p>AO14.3 Development for a retaining wall is:</p> <ul style="list-style-type: none"> (a) stepped to minimise impact on the streetscape and pedestrian environment; (b) a maximum of 0.6m in height if directly abutting the edge of the adjoining road reserve verge 	<p>The Development is able to comply with AO14.1 – 14.3.</p>
<p>PO15 Development minimises light nuisances.</p>	<p>AO15 Outdoor lighting is in accordance with AS 4282-1997 Control of the obtrusive effects of outdoor lighting.</p>	<p>The Development will comply with AO15 and can be conditioned to comply.</p>

**PO16**

Waste and recyclable material storage areas are:

- (a) convenient and accessible to residents and waste and recyclable material collection services;
- (b) located and designed to mitigate adverse impacts:
 - (i) within the site;
 - (ii) on adjoining properties;
 - (iii) to the street.

AO16

Waste and recyclable material storage areas:

- (a) are located on site;
- (b) are sited and designed to be unobtrusive and screened from view from the street frontage;
- (c) are imperviously sealed roofed and bunded, and contain a hose down area draining to Council's sewer network;
- (d) are of a sufficient size to accommodate bulk (skip) bins;
- (e) have appropriate access and sufficient on site manoeuvrability area for waste and recyclable material collection services.

Complies with AO 16.

The proposal is intending to use an Automated Waste Collection System.

The system is also in place in new urban developments in Stockholm, Seoul, Barcelona, London, Singapore and Beijing and is currently used by Sunshine Coast Council for the Maroochydore City Centre.

The waste is transported to a collection point through a system of underground pipes.

This will reduce the impacts of waste storage on site.

If this technology cannot be utilized the design is still able to achieve compliance with the Acceptable outcomes.



Performance outcomes	Acceptable outcomes	Applicant response
	Note - The Environmental performance code contains requirements for waste and recyclable material storage.	
PO17 Development provides a secure storage area for each dwelling.	AO17 A secure storage area for each dwelling: (a) is located to enable access by a motor vehicle or be near to vehicle parking; (b) has a minimum space of 3.5m ² per dwelling; (c) has a minimum height of 2 metres; (d) is weather proof; (e) is lockable; (f) has immunity to the 1% AEP inundation event. Note – A cupboard within a unit will not satisfy this requirement.	Complies with AO17. The Short Term Accommodation / Multiple Dwelling Villas have sufficient storage space incorporated into the design.
Additional requirements for a Retirement facility		
PO18 Retirement facilities are located in areas which offer convenience to residents, and are designed to be compatible with the locality and surrounding area in which they are located.	AO18 Retirement facilities are conveniently located in established areas close to public transport, shopping facilities and health care services.	Not applicable.



<p>PO19 Retirement facilities are designed to provide for the amenity and security of residents.</p>	<p>AO19.1 The Retirement facility incorporates covered walkways wide enough to accommodate wheel chairs and ramps, and where necessary, provide on-site weather protection between all parts of the complex.</p> <p>AO19.2 Internal pathways have firm, well drained and non-slip surfaces.</p> <p>AO19.2 Security screens are provided to all dwelling units or residential rooms to ensure the safety and security of residents.</p> <p>AO19.3 An illuminated sign and site map of the layout of the development is located near the main entrance to the facility.</p>	<p>Not applicable.</p>
<p>PO20 The internal layout of a Retirement facility and the location of the retirement facility allows for safe evacuation of residents in an emergency and provides emergency services to efficiently access the site.</p>	<p>AO20.1 The design of the Retirement facility ensures that external circulation and access and egress points on the site facilitate the evacuation of the site in an efficient manner.</p> <p>AO20.2 The site of a Retirement facility is not prone to inundation.</p> <p>AO20.3 The location of the Retirement facility is readily accessible to emergency vehicles.</p>	<p>Not applicable.</p>



Performance outcomes	Acceptable outcomes	Applicant response
PO21 The development is designed for the needs of the age group, and to allow 'aging in place' to occur.	AO21.1 Development applies adaptable housing principles. AO21.2 A range of housing designs and sizes are provided in the development to cater for different individual and household needs.	Not applicable.

9.4.1 Access, parking and servicing code

9.4.1.1 Application

- (1) This code applies to assessing:
 - (a) operational work which requires a compliance assessment as a condition of a development permit; or
 - (b) a material change of use or reconfiguring a lot if:
 - (i) self-assessable or assessable development where this code is identified in the assessment criteria column of the table of assessment;
 - (ii) impact assessable development, to the extent relevant.
- (2) When using this code, reference should be made to Part 5.

9.4.1.2 Purpose

- (1) The purpose of the Access, parking and servicing code is to assess the suitability of access, parking and associated servicing aspects of a development.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) sufficient vehicle parking is provided on-site to cater for all types of vehicular traffic accessing and parking on-site, including staff, guests, patrons, residents and short term delivery vehicles;
 - (b) sufficient bicycle parking and end of trip facilities are provided on-site to cater for customer and service staff;
 - (c) on-site parking is provided so as to be accessible and convenient, particularly for any short term uses;
 - (d) development provides walking and cycle routes through the site which link the development to the external walking and cycling network;
 - (e) the provision of on-site parking, loading / unloading facilities and the provision of access to the site do not impact on the efficient function of street network or on the area in which the development is located;
 - (f) new vehicular access points are safely located and are not in conflict with the preferred ultimate streetscape character and local character and do not unduly disrupt any current or future on-street parking arrangements.

9.4.1.3 Criteria for assessment

Table 9.4.1.3.a – Access, parking and servicing code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		

**PO1**

Sufficient on-site car parking is provided to cater for the amount and type of vehicle traffic expected to be generated by the use or uses of the site, having particular regard to:

- (a) the desired character of the area;
- (b) the nature of the particular use and its specific characteristics and scale;
- (c) the number of employees and the likely number of visitors to the site;
- (d) the level of local accessibility;
- (e) the nature and frequency of any public transport serving the area;
- (f) whether or not the use involves the retention

AO1.1

The minimum number of on-site vehicle parking spaces is not less than the number prescribed in Table 9.4.1.3.b for that particular use or uses.

Note - Where the number of spaces calculated from the table is not a whole number, the number of spaces provided is the next highest whole number.

AO1.2

Car parking spaces are freely available for the parking of vehicles at all times and are not used for external storage purposes, the display of products or rented/sub-leased.

Complies with PO1

The Resort Complex will require the following carparking-

Resort Complex – 95

Food and Drink Outlets – 12 (note this is not required to be applied for a separate use now that the use is a Resort Complex however we have used the food and drink outlets (associated with tourist accommodation) rates for the purpose of calculating carparking.

Total – 107

The proposed development provides for 99 carparking spaces inclusive of accessible parking.

An additional 14 Motorcycle spaces are provided.

The Short Term Accommodation / Multi Unit Dwelling Villas require 66 spaces. The design of the Villas accommodate 88 spaces.

Overall, the development achieves compliance with AO1.1 but for practical application each aspect of the development is considered separately.

The Resort Complex and Food and Drink Outlets (associated with Tourist Accommodation) aspect of the development is 8 carparking spaces short. This does not consider the 2% allowable for motorcycles which results in a shortfall of only 5 spaces.

Parking calculations and assumptions are



		<p>attached to this compliance table and are further articulated in the Traffic Impact Assessment at Attachment 6.</p> <p>Realistically, the majority of patrons to the restaurants and bars will be guests of the Hotel or residents/guests of the adjoining Villas. It is also likely that patronage will be received from adjacent Tourism Accommodation which will be pedestrian traffic.</p> <p>It is also reasonable to assume that patrons of the restaurants and bars will come from Port Douglas and are likely to take alternative modes of transport like a taxi, courtesy shuttle, or Uber if they are intending to enjoy a drink with lunch or dinner.</p> <p>On this basis, the minor non-compliance with the carparking rates is considered reasonable and will not impact the operations of the Resort Complex.</p> <p>For completion, car parking spaces are located such that they are freely available for parking at all times. Sufficient space has been allowed for external storage purposes and there is no intent to lease or rent the carparks commercially.</p>
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Performance outcomes	Acceptable outcomes	Applicant response
<p>of an existing building and the previous requirements for car parking for the building</p> <p>(g) whether or not the use involves a heritage building or place of local significance;</p> <p>(h) whether or not the proposed use involves the retention of significant vegetation.</p>	<p>AO1.3 Parking for motorcycles is substituted for ordinary vehicle parking to a maximum level of 2% of total ordinary vehicle parking.</p> <p>AO1.4 For parking areas exceeding 50 spaces parking, is provided for recreational vehicles as a substitute for ordinary vehicle parking to a maximum of 5% of total ordinary vehicle parking rate.</p>	<p>Complies with AO 1.3</p> <p>Motorcycle parking is provided in addition to the amount required to achieve compliance with PO1. A total of 14 Motorcycle parks are provided for on site.</p> <p>AO1.4 is not applicable to this application as RV parking is not required to service the Resort Complex component as the accommodation is provided on site. If the site is accessed by a patron requiring RV parking, there is sufficient on street parking available.</p>
<p>PO2 Vehicle parking areas are designed and constructed in accordance with relevant standards.</p>	<p>AO2 Vehicle parking areas are designed and constructed in accordance with Australian Standard:</p> <p>(a) AS2890.1; (b) AS2890.3; (c) AS2890.6.</p>	<p>Complies with AO2.</p> <p>Vehicle parking is designed in accordance with the Australia Standards.</p> <p>This can further be conditioned to comply.</p>

**PO3**

Access points are designed and constructed:

- (a) to operate safely and efficiently;
- (b) to accommodate the anticipated type and volume of vehicles
- (c) to provide for shared vehicle (including cyclists) and pedestrian use, where appropriate;
- (d) so that they do not impede traffic or pedestrian movement on the adjacent road area;
- (e) so that they do not adversely impact upon existing intersections or future road or intersection improvements;
- (f) so that they do not adversely impact current and future on-street parking arrangements;
- (g) so that they do not adversely impact on existing services within the road reserve adjacent to the site;
- (h) so that they do not involve ramping, cutting of the adjoining road reserve or any built structures (other than what may be necessary to cross over a stormwater channel).

AO3.1

Access is limited to one access cross over per site and is an access point located, designed and constructed in accordance with:

- (a) Australian Standard AS2890.1;
- (b) Planning scheme policy SC6.5 – FNQROC Regional Development Manual - access crossovers.

AO3.2

Access, including driveways or access crossovers:

- (a) are not placed over an existing:
 - (i) telecommunications pit;
 - (ii) stormwater kerb inlet;
 - (iii) sewer utility hole;
 - (iv) water valve or hydrant.
- (b) are designed to accommodate any adjacent footpath;
- (c) adhere to minimum sight distance requirements in accordance with AS2980.1.

AO3.3

Driveways are:

- (a) designed to follow as closely as possible to the existing contours, but are no steeper than the gradients outlined in Planning scheme policy SC6.5 – FNQROC Regional Development Manual;
- (b) constructed such that where there is a grade shift to 1 in 4 (25%), there is an area with a grade of no more than 1 in 6 (16.6%) prior to this area, for a distance of at least 5 metres;
- (c) on gradients greater than 1 in 6 (16.6%) driveways are constructed to ensure the cross-fall of the driveway is one way and directed into the hill, for vehicle safety and drainage purposes;

Complies with PO3.

The development fronts Davidson Street (service road) which accesses the State-controlled Port Douglas Road/Davidson Street from the Crimmins Street and Port Street intersections.

The existing development has three (3) separate access locations to Davidson Street (service road).

The proposed development consolidates a single ingress and single egress to Davidson Street (service road) central to the site. Servicing is also provided from Crimmins Street.

Davidson Street (service road) is a straight road with a low speed environment and no impediments to site lines.

The proposed new access locations are approximately 90m to the closest intersection with Crimmins Street.

Additionally, the Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.

A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.



Performance outcomes	Acceptable outcomes	Applicant response
	<p>(d) constructed such that the transitional change in grade from the road to the lot is fully contained within the lot and not within the road reserve;</p> <p>(e) designed to include all necessary associated drainage that intercepts and directs storm water runoff to the storm water drainage system.</p> <p>AO3.4 Surface construction materials are consistent with the current or intended future streetscape or character of the area and contrast with the surface construction materials of any adjacent footpath.</p>	
<p>PO4 Sufficient on-site wheel chair accessible car parking spaces are provided and are identified and reserved for such purposes.</p>	<p>AO4 The number of on-site wheel chair accessible car parking spaces complies with the rates specified in AS2890 Parking Facilities.</p>	<p>Complies with AO4</p> <p>6 accessible carparking spaces are provided which is in accordance with the rates specified in AS2890 Parking Facilities.</p>
<p>PO5 Access for people with disabilities is provided to the building from the parking area and from the street.</p>	<p>AO5 Access for people with disabilities is provided in accordance with the relevant Australian Standard.</p>	<p>Complies with AO5</p> <p>See comments above.</p>
<p>PO6 Sufficient on-site bicycle parking is provided to cater for the anticipated demand generated by the development.</p>	<p>AO6 The number of on-site bicycle parking spaces complies with the rates specified in Table 9.4.1.3.b.</p>	<p>Complies with AO6.</p> <p>The development requires 33 bicycle parks and the plans proposes approximately 74 bicycle parks across all aspects with 30 dedicated to the Resort Complex component.</p> <p>Detail is provided in the carparking requirements attached to this compliance table.</p>



<p>PO7 Development provides secure and convenient bicycle parking which:</p> <ul style="list-style-type: none"> (a) for visitors is obvious and located close to the building's main entrance; (b) for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building; (c) is easily and safely accessible from outside the site. 	<p>AO7.1 Development provides bicycle parking spaces for employees which are co-located with end-of-trip facilities (shower cubicles and lockers);</p> <p>AO7.2 Development ensures that the location of visitor bicycle parking is discernible either by direct view or using signs from the street.</p> <p>AO7.3 Development provides visitor bicycle parking which does not impede pedestrian movement.</p>	<p>Complies with PO7.</p> <p>The development provides secure and convenient bicycle parking which:</p> <ul style="list-style-type: none"> • for visitors is obvious and located close to the building's main entrance. • for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building. <p>All parking is easily and safely accessible from outside the site.</p>
<p>PO8 Development provides walking and cycle routes through the site which:</p> <ul style="list-style-type: none"> (a) link to the external network and pedestrian and cyclist destinations such as schools, shopping centres, open space, public transport stations, shops and local activity centres along the safest, most direct and convenient routes; (b) encourage walking and cycling; (c) ensure pedestrian and cyclist safety. 	<p>AO8 Development provides walking and cycle routes which are constructed on the carriageway or through the site to:</p> <ul style="list-style-type: none"> (a) create a walking or cycle route along the full frontage of the site; (b) connect to public transport and existing cycle and walking routes at the frontage or boundary of the site. 	<p>Complies with AO8</p> <p>This site frontage is already connected by a dedicated footpath/cycle way between Davidson Street (service road) and Davidson Street.</p>
<p>PO9 Access, internal circulation and on-site parking for service vehicles are designed and constructed:</p> <ul style="list-style-type: none"> (a) in accordance with relevant standards; 	<p>AO9.1 Access driveways, vehicle manoeuvring and on-site parking for service vehicles are designed and constructed in accordance with AS2890.1 and</p>	<p>Complies with AO9.1 – AO9.3</p> <p>The access design is detailed in the Civil Report provided as Attachment 5. All servicing and loading occurs from within the site.</p> <p>The Traffic Impact Assessment provided as Attachment 6 details site circulation to ensure the movement of service vehicles does not impact on the parking or site circulation.</p>



Performance outcomes	Acceptable outcomes	Applicant response
(b) so that they do not interfere with the amenity of the surrounding area; (c) so that they allow for the safe and convenient movement of pedestrians, cyclists and other vehicles.	AS2890.2. AO9.2 Service and loading areas are contained fully within the site. AO9.3 The movement of service vehicles and service operations are designed so they: (a) do not impede access to parking spaces; (b) do not impede vehicle or pedestrian traffic movement.	
PO10 Sufficient queuing and set down areas are provided to accommodate the demand generated by the development.	AO10.1 Development provides adequate area on-site for vehicle queuing to accommodate the demand generated by the development where drive through facilities or drop-off/pick-up services are proposed as part of the use, including, but not limited to, the following land uses: (a) car wash; (b) child care centre; (c) educational establishment where for a school; (d) food and drink outlet, where including a drive-through facility; (e) hardware and trade supplies, where including a drive-through facility; (f) hotel, where including a drive-through facility; (g) service station. AO10.2 Queuing and set-down areas are designed and constructed in accordance with AS2890.1.	Complies with PO10. The site is serviced by a single ingress and separate egress which allows for sufficient queuing and efficient site circulation.

Table 9.4.1.3.b – Access, parking and servicing requirements

Note – Where the number of spaces is not a whole number, the number of spaces to be provided is the next highest whole number.

Note – Where the proposed development involves one or more land use, the minimum number of spaces for the proposed development will be calculated using the minimum number of spaces specified for each land use component.



Land use	Minimum number of ordinary vehicle parking spaces	Minimum number of bicycle spaces	End of trip facilities	Minimum standard design service vehicle (refer to Table 9.4.1.3c)
Agricultural supplies store	1 space per 50m ² of GFA and outdoor display area.	1 space per 200m ² of GFA.	n/a	LRV
Air services	1 car space per 20m ² of covered reception area, plus 1 car space per 2 staff, plus a covered bus set down area adjacent to the entry of the reception area and 2 bus parking spaces.	n/a	n/a	LRV



Land use	Minimum number of ordinary vehicle parking spaces	Minimum number of bicycle spaces	End of trip facilities	Minimum standard design service vehicle (refer to Table 9.4.1.3c)
Bulk landscape supplies	1 space per 50m ² GFA and outdoor display area.	1 space per 200m ² of GFA.	n/a	MRV
Caretaker's accommodation	A minimum of 1 space	n/a	n/a	n/a
Child care centre	1 space per 10 children to be used for setting down and picking up of children, with a minimum of 3 car spaces to be provided for set down and collection; plus 1 space per employee. Any drive-through facility can provide tandem short term parking for 3 car spaces for setting down/picking up of children, on the basis that a passing lane is provided and line-marked to be kept clear of standing vehicles at all times.	n/a	n/a	VAN
Club	Unlicensed clubrooms: 1 space per 45m ² of GFA. Licensed clubrooms: 1 space per 15m ² of GFA.	1 space per 4 employees.	n/a	Licensed and equal or greater than 1500m ² : RCV Other: VAN
Community care centre	1 space per 20m ² of GFA.	A minimum of 1 space.	n/a	RCV



Community residence	A minimum of 2 spaces.	A minimum of 1 space.	n/a	VAN
Community use	1 space per 15m ² GFA.	1 space per 100m ² of GFA.	n/a	RCV
Dual occupancy	A minimum of 2 spaces per dwelling unit which may be in tandem with a minimum of 1 covered space per dwelling unit.	n/a	n/a	n/a
Dwelling house	A minimum of 2 spaces which may be in tandem plus 1 space for a secondary dwelling	n/a	n/a	n/a
Dwelling unit	1.5 spaces per one or two bedroom unit; or 2 spaces per three bedroom unit.	n/a	n/a	n/a
Educational establishment	Primary school or secondary schools: 1 car space per 2 staff members, plus provision of space to be used	Primary school or secondary schools: 1 space per 5	Required for all educational establishments with a GFA	RCV



Land use	Minimum number of ordinary vehicle parking spaces	Minimum number of bicycle spaces	End of trip facilities	Minimum standard design service vehicle (refer to Table 9.4.1.3c)
	for setting down and picking up of students. Tertiary and further education: 1 car space per 2 staff members, plus 1 car space per 10 students, plus provision of space to be used for setting down and picking up of students.	students over year 4. Tertiary and further education: 2 spaces per 50 full time students.	greater than 2000m ² .	
Food and drink outlet	1 space per 25m ² GFA and outdoor dining area. or If within Precinct 1 : Port Douglas precinct in the Port Douglas / Craiglie local plan or if with Precinct 5: Town centre precinct in the Mossman local plan: 1 space per 50m ² of GFA, and outdoor dining area.	1 space per 100m ² of GFA, and outdoor dining area.	n/a	See Table 9.4.1.3.d
Function facility	1 space per 15m ² GFA.	1 space per 100m ² of GFA.	n/a	RCV
Funeral parlour	1 space per 15m ² GFA.	n/a	n/a	RCV
Garden centre	1 space per 50m ² GFA and outdoor display area	1 space per 200m ² of GFA.	n/a	AV
Hardware and trade supplies	1 space per 50m ² GFA and outdoor display area	1 space per 200m ² of GFA.	n/a	AV



Health care services	1 space per 20m ² of GFA.	1 space per 100m ² of GFA.	Required for all health care services with a GFA greater than 2000m ² .	VAN
High impact industry	1 space per 90m ² of GFA.	n/a	n/a	AV
Home based business	The parking required for the dwelling house, plus 1 space per bedroom where the Home based business involves the provision of accommodation; or 1 space per 25m ² GFA for any other Home Based Business.	n/a	n/a	n/a
Hospital	The greater of 1 space per 2 bedrooms or 1 space per 4 beds; plus 1 car space for ambulance parking, designated accordingly.	1 space per 100m ² of GFA.	Required for all hospitals with a GFA greater than 2000m ² .	RCV
Hotel	1 space per 10m ² GFA and	1 space per	n/a	LRV



Land use	Minimum number of ordinary vehicle parking spaces	Minimum number of bicycle spaces	End of trip facilities	Minimum standard design service vehicle (refer to Table 9.4.1.3c)
	licensed outdoor area; plus For 1 space per 50m ² GFA of floor area of liquor barn or bulk liquor sales area; plus, if a drive in bottle shop is provided, queuing lane/s on site for 12 vehicles. Note - Use standard for any Short Term Accommodation for hotel accommodation use.	100m ² of GFA.		
Indoor sport and recreation	Squash court or another court game: 4 spaces per court. Basketball, netball, soccer, cricket: 25 spaces per court / pitch. Ten pin bowling: 3 spaces per bowling lane. Gymnasium: 1 space per 15m ² of GFA.	1 space per 4 employees.	n/a	RCV
Low impact industry	1 space per 90m ² of GFA.	n/a	n/a	AV
Marine industry	1 space per 90m ² of GFA.	n/a	n/a	AV
Medium impact industry	1 space per 90m ² of GFA.	n/a	n/a	AV



Multiple dwelling	If within Precinct 1 : Port Douglas precinct in the Port Douglas / Craiglie Local plan: 1 car space per dwelling unit. If outside Precinct 1 : Port Douglas precinct in the Port Douglas / Craiglie Local plan: 1.5 car spaces per dwelling unit In all cases 60% of the car parking area is to be covered.	1 bicycle space per 3 units and 1 visitor bicycle space per 12 units.	n/a	RCV (over 10 units)
Office	1 space per 25m ² of GFA or If within Precinct 1 : Port Douglas precinct in the Port Douglas / Craiglie local plan or if with Precinct 5: Town centre precinct in the Mossman local plan: 1 space per 50m ² of GFA	1 space per 200m ² GFA	Required for all office development with a GFA greater than 2000m ² .	See Table 9.4.1.3.e
Outdoor sales	1 space per 50m ² GFA and outdoor display area	1 space per 200m ² of GFA.	n/a	AV
Outdoor sport and recreation	Coursing, horse racing, pacing, trotting: 1 space per 5 seated spectators,	Football: 5 space per field.	n/a	RCV



Land use	Minimum number of ordinary vehicle parking spaces	Minimum number of bicycle spaces	End of trip facilities	Minimum standard design service vehicle (refer to Table 9.4.1.3c)
	<p>plus 1 space per 5m² of other spectator areas.</p> <p>Football: 50 spaces per field.</p> <p>Lawn bowls: 30 spaces per green.</p> <p>Swimming pool: 15 spaces; plus 1 space per 100m² of useable site area.</p> <p>Tennis court or other court game: 4 spaces per court.</p> <p>Golf course: 4 spaces per tee on the course.</p> <p>Note - Use standard for Club for clubhouse component.</p>	<p>Lawn bowls: 5 spaces per green.</p> <p>Swimming pool: 1 space per swimming lane.</p> <p>Tennis court or other court game: 4 space per court.</p> <p>Golf course: 1 space per 15m² of GFA for clubhouse component.</p>		
Place of worship	1 space per 15m ² of GFA.	1 space per 100m ² of GFA.	n/a	LRV
Relocatable home park	1 space per relocatable home site; plus 0.1 space per relocatable home site for visitor parking; plus 1 space for an on-site manager	n/a	n/a	LRV



Research and technology industry	1 space per 90m ² of GFA.	n/a	n/a	MRV
Residential care facility	1 visitor car space per 5 bedroom units; plus 1 car space per 2 staff members	n/a	n/a	LRV
Resort complex	Use standard for relevant standard for each component. For example: Use Short Term Accommodation standard for accommodation component and Food and Drink Outlet for restaurant component.	Use standard for relevant standard for each component. For example: Use Short Term Accommodation standard for accommodation component and Food and	n/a	RCV



Land use	Minimum number of ordinary vehicle parking spaces	Minimum number of bicycle spaces	End of trip facilities	Minimum standard design service vehicle (refer to Table 9.4.1.3c)
		Drink Outlet for restaurant component.		
Retirement facility	1 space per dwelling unit; plus 1 visitor space per 5 dwelling units; plus 1 visitor car space per 10 hostel units, nursing home or similar beds, plus 1 car space per 2 staff members; plus 1 car parking space for ambulance parking.	n/a	n/a	LRV
Sales office	A minimum of 1 space.	n/a	n/a	n/a
Service industry	1 space per 90m ² of GFA.	n/a	n/a	SRV
Service station	1 space per 25m ² of GFA	n/a	n/a	AV
Shop	1 space per 25m ² of GFA. or If within Precinct 1 : Port Douglas precinct in the Port Douglas / Craiglie local plan or if with Precinct 5: Town centre precinct in the Mossman local plan: 1 space per 50m ² of GFA.	1 space per 100m ² of GFA.	Required for all shops with a GFA greater than 2000m ² .	See Table 9.4.1.3.d



Shopping centre	1 space per 25m ² of GFA. or If within Precinct 1 : Port Douglas precinct in the Port Douglas / Craiglie local plan or if with Precinct 5: Town centre precinct in the Mossman local plan: 1 space per 50m ² of GFA.	1 space per 200m ² GFA.	Required for all shopping centres with a GFA greater than 2000m ² .	See Table 9.4.1.3.d
Short term accommodation	If within Precinct 1 : Port Douglas precinct in the Port Douglas / Craiglie local plan: 0.5 car spaces per dwelling unit. If outside Precinct 1 : Port Douglas precinct in the Port Douglas / Craiglie local plan: For up to 5 units: 1 car space per dwelling unit, plus 1 space for visitors and 1 service/staff spaces. For 5 – 10 units: 1 car space per dwelling unit, plus 2 spaces for visitors and 1 service/staff spaces.	1 space per 10 rooms	n/a	SRV



Land use	Minimum number of ordinary vehicle parking spaces	Minimum number of bicycle spaces	End of trip facilities	Minimum standard design service vehicle (refer to Table 9.4.1.3c)
	<p>For over 10 units: 0.75 car spaces per dwelling unit, plus 3 spaces for visitors and 2 service/staff parking for the first 10 units and 0.5 additional service/staff space per 10 units, there-above.</p> <p>In all cases 60% of the car parking area is to be covered.</p> <p>Note: Where Short term accommodation is to be inter-changeable with a Multiple dwelling land use, multiple dwelling parking rates apply.</p>			
Showroom	1 space per 50m ² GFA.	1 space per 200m ² GFA.	n/a	AV
Special industry	1 space per 90m ² of GFA.	n/a	n/a	AV
Tourist park	1 car space per caravan site, tent site or cabin; plus 1 visitor car space per 10 caravan sites, tent sites or cabins; plus 1 car space for an on-site manager.	n/a	n/a	LRV
Theatre	<p>Indoor: 1 space per 15m² of GFA.</p> <p>Outdoor cinema: 1 space per 5m² of designated viewing area, plus 1 car space per 2 employees.</p>	1 space per 200m ² GFA.	n/a	VAN



Veterinary services	1 space per 50m ² of GFA.	n/a	n/a	VAN
Warehouse	1 space per 90m ² of GFA.	n/a	n/a	Where self-storage: RCV Other: AV
Any use not otherwise specified in this table.	Sufficient spaces to accommodate number of vehicles likely to be parked at any one time.	Sufficient spaces to accommodate number of vehicles likely to be parked at any one time.		To be determined



Table 9.4.1.3.c – Design vehicles

VAN	A 99.8th percentile vehicle equivalent to a large car.
SRV	Small rigid vehicle as in AS2890.2-2002 parking facilities – Off-street commercial vehicle facilities, but incorporating a body width of 2.33m
MRV	Medium rigid vehicle equivalent to an 8-tonne truck.
LRV	Large rigid vehicle described by AS2890.2-2002 parking facilities – Off-street commercial vehicle facilities as heavy rigid vehicle.
RCV	Industrial refuse collection vehicle
AV	19 metre articulated vehicle from AUSTROADS

Table 9.4.1.3.d – Standard number of service bays required for Food and drink outlet, Shop or Shopping centre

Gross floor area (m ²)	Service bays required			
	VAN	SRV	MRV	LRV
0-199	-	1	-	-
200 – 599	1	-	1	-
600 – 999	1	1	1	-
1000 – 1499	2	1	1	-
1500 – 1999	2	2	1	-
2000 – 2799	2	2	2	-
2800 – 3599	2	2	2	1
3600 and over	To be determined via a parking study.			

Table 9.4.1.3.e – Standard number of service bays required for Office

Gross floor area (m ²)	Service bays required			
	VAN	SRV	MRV	LRV
0-999	-	1	-	-



1000 – 2499	1	-	1	-
2500 – 3999	2	1	1	-
4000 – 5999	3	1	1	-
6000 – 7999	4	1	1	-
8000 – 9999	4	2	1	-
10000 and over	To be determined via a parking study.			

9.4.3 Environmental performance code

9.4.3.1 Application

- (1) This code applies to assessing:
 - (a) building work for outdoor lighting;
 - (b) a material change of use or reconfiguring a lot if:
 - (i) assessable development where the code is identified in the assessment criteria column of a table of assessment; or
 - (ii) impact assessable development, to the extent relevant.

Note – Where for the purpose of lighting a tennis court in a Residential zone, a compliance statement prepared by a suitably qualified person must be submitted to Council with the development application for building work.

- (2) When using this code, reference should be made to Part 5.

9.4.3.2 Purpose

- (1) The purpose of the Environmental performance code is to ensure development is designed and operated to avoid or mitigate impacts on sensitive receiving environments.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) activities that have potential to cause an adverse impact on amenity of adjacent and surrounding land, or environmental harm is avoided through location, design and operation of the development;
 - (b) sensitive land uses are protected from amenity related impacts of lighting, odour, airborne particles and noise, through design and operation of the development;
 - (c) stormwater flowing over, captured or discharged from development sites is of a quality adequate to enter receiving waters and downstream environments;
 - (d) development contributes to the removal and ongoing management of weed species.

9.4.3.3 Criteria for assessment

Table 9.4.3.3.a – Environmental performance code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
Lighting		



<p>PO1 Lighting incorporated within development does not cause an adverse impact on the amenity of adjacent uses and nearby sensitive land uses.</p>	<p>AO1.1 Technical parameters, design, installation, operation and maintenance of outdoor lighting comply with the requirements of Australian standard AS4282-1997 Control of the obtrusive effects of outdoor lighting.</p> <p>AO1.2 Development that involves flood lighting is restricted to a type that gives no upward component of light where mounted horizontally.</p> <p>AO1.3 Access, car parking and manoeuvring areas are designed to shield nearby residential premises from impacts of vehicle headlights.</p>	<p>Complies with AO1.1</p> <p>Outdoor lighting will be designed to comply with the requirements of Australian standard AS4282-1997 Control of the obtrusive effects of outdoor lighting.</p> <p>AO1.2 -Not applicable</p> <p>Complies with AO1.3</p> <p>Access, car parking and maneuvering areas have been designed to shield the proposed Short Term Accommodation / Multiple Dwelling Villas. Additional consideration has been given to Lychee Tree Holiday apartments in the design of site circulation.</p>
Noise		
<p>PO2 Potential noise generated from the development is avoided through design, location and operation of the activity.</p> <p>Note – Planning Scheme Policy SC6.4 – Environmental management plans provides guidance on preparing a report to demonstrate compliance with the purpose and outcomes of the code.</p>	<p>AO2.1 Development does not involve activities that would cause noise related environmental harm or nuisance; or</p> <p>AO2.2 Development ensures noise does not emanate from the site through the use of materials, structures and architectural features to not cause an adverse noise impact on adjacent uses.</p>	<p>Complies with AO 2.1</p> <p>The development is for Short Term Accommodation, Multiple Dwellings and Resort Complex uses which are forms of development anticipated in this zone. It is of a similar scale to the existing development on site.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO2.3 The design and layout of development ensures car parking areas avoid noise impacting directly on adjacent sensitive land uses through one or more of the following:</p> <ul style="list-style-type: none"> (a) car parking is located away from adjacent sensitive land uses; (b) car parking is enclosed within a building; (c) a noise ameliorating fence or structure is established adjacent to car parking areas where the fence or structure will not have a visual amenity impact on the adjoining premises; (d) buffered with dense landscaping. <p>Editor's note - The <i>Environmental Protection (Noise) Policy 2008</i>, Schedule 1 provides guidance on acoustic quality objectives to ensure environmental harm (including nuisance) is avoided.</p>	<p>Complies with AO2.3</p> <p>The development has been designed to ensure carparking is provided within the building and existing and proposed sensitive land uses are additionally screened by the provision of dense landscaping.</p>
Airborne particles and other emissions		
<p>PO3 Potential airborne particles and emissions generated from the development are avoided through design, location and operation of the activity.</p> <p>Note – Planning Scheme Policy SC6.4 – Environmental management plans provides guidance on preparing a report to demonstrate compliance with the purpose and outcomes of the code.</p>	<p>AO3.1 Development does not involve activities that will result in airborne particles or emissions being generated;</p> <p>or</p> <p>AO3.2 The design, layout and operation of the development activity ensures that no airborne particles or emissions cause environmental harm or nuisance.</p> <p>Note - examples of activities which generally cause airborne particles include spray painting, abrasive blasting, manufacturing activities and car wash facilities.</p>	<p>Complies with AO 3.1 and AO3.2</p> <p>The proposed uses on site to do result in any airborne particles or emissions.</p>



	<p>Examples of emissions include exhaust ventilation from basement or enclosed parking structures, air conditioning/refrigeration ventilation and exhaustion.</p> <p>The <i>Environmental Protection (Air) Policy 2008</i>, Schedule 1 provides guidance on air quality objectives to ensure environmental harm (including nuisance) is avoided.</p>	
Odours		
<p>PO4 Potential odour causing activities associated with the development are avoided through design, location and operation of the activity.</p> <p>Note – Planning Scheme Policy SC6.4 – Environmental management plans provides guidance on preparing a report to demonstrate compliance with the purpose and outcomes of the code.</p>	<p>AO4.1 The development does not involve activities that create odorous emissions;</p> <p>or</p> <p>AO4.2 The use does not result in odour that causes environmental harm or nuisance with respect to surrounding land uses.</p>	<p>Complies with AO 4.1 and AO4.2</p> <p>The proposed uses on site to do result in any activities that create odorous emissions.</p>



Performance outcomes	Acceptable outcomes	Applicant response
Waste and recyclable material storage		
<p>PO5 Waste and recyclable material storage facilities are located and maintained to not cause adverse impacts on adjacent uses.</p> <p>Note – Planning Scheme Policy SC6.4 – Environmental management plans provides guidance on preparing a report to demonstrate compliance with the purpose and outcomes of the code.</p>	<p>AO5.1 The use ensures that all putrescent waste is stored in a manner that prevents odour nuisance and is disposed of at regular intervals.</p> <p>AO5.2 Waste and recyclable material storage facilities are located, designed and maintained to not cause an adverse impact on users of the premises and adjacent uses through consideration of:</p> <ul style="list-style-type: none"> (a) the location of the waste and recyclable material storage areas in relation to the noise and odour generated; (b) the number of receptacles provided in relation to the collection, maintenance and use of the receptacles; (c) the durability of the receptacles, sheltering and potential impacts of local climatic conditions; (d) the ability to mitigate spillage, seepage or leakage from receptacles into adjacent areas and sensitive receiving waters and environments. <p>Editor's note - the <i>Environmental Protection (Waste Management) Policy 2008</i> provides guidance on the design of waste containers (receptacles) to ensure environmental harm (including nuisance) is avoided.</p>	<p>Complies with AO 5.1 and 5.2</p> <p>The proposal is intending to use an Automated Waste Collection System.</p> <p>The system is also in place in new urban developments in Stockholm, Seoul, Barcelona, London, Singapore and Beijing and is currently used by Sunshine Coast Council for the Maroochydore City Centre.</p> <p>The waste is transported to a collection point through a system of underground pipes.</p> <p>This will reduce the impacts of waste storage on site.</p> <p>If this technology cannot be utilized the design is still able to achieve compliance with the Acceptable outcomes.</p>
Sensitive land use activities		



<p>PO6 Sensitive land use activities are not established in areas which will receive potentially incompatible impacts on amenity from surrounding, existing development activities and land uses.</p>	<p>AO6.1 Sensitive land use activities are not established in areas that will be adversely impacted upon by existing land uses, activities and potential development possible in an area;</p> <p>or</p> <p>AO6.2 Sensitive land activities are located in areas where potential adverse amenity impacts mitigate all potential impacts through layout, design, operation and maintenance.</p>	<p>Complies with AO6.1 and AO6.2</p> <p>The development of Short Term Accommodation, Multiple Dwellings, and Resort Complex is anticipated and encouraged in the Tourist Accommodation Zone.</p>
Stormwater quality		
<p>PO7 The quality of stormwater flowing over, through or being discharged from development activities into watercourses and drainage lines is of adequate quality for downstream environments, with respect to:</p> <ul style="list-style-type: none"> (a) the amount and type of pollutants borne from the activity; (b) maintaining natural stream flows; 	<p>AO7.1 Development activities are designed to ensure stormwater over roofed and hard stand areas is directed to a lawful point of discharge.</p> <p>AO7.2 Development ensures movement of stormwater over the site is not impeded or directed through potentially polluting activities.</p>	<p>Complies with AO 7.1 to AO 7.3</p> <p>All stormwater is directed to a lawful point of discharge and in accordance with FNQROC's Design Manual D5 Stormwater Quality Management and the State Planning Policy, the proposed drainage outlet locations will be provided with quality control devices which have been modelled in MUSIC to ensure nutrient reduction loading compliance.</p>



Performance outcomes	Acceptable outcomes	Applicant response
<p>(c) the amount and type of site disturbance; (d) site management and control measures.</p>	<p>AO7.3 Soil and water control measures are incorporated into the activity's design and operation to control sediment and erosion potentially entering watercourses, drainage lines and downstream receiving waters.</p> <p>Note - Planning scheme policy - FNQROC Regional Development Manual provides guidance on soil and water control measures to meet the requirements of the <i>Environmental Protection Act 1994</i>.</p> <p>During construction phases of development, contractors and builders are to have consideration in their work methods and site preparation for their environmental duty to protect stormwater quality.</p>	
Pest plants (for material change of use on vacant land over 1,000m²)		
<p>PO8 Development activities and sites provide for the removal of all pest plants and implement ongoing measures to ensure that pest plants do not reinfest the site or nearby sites.</p> <p>Editor's note - This does not remove or replace all land owner's obligations or responsibilities under the <i>Land Protection (Pest and Stock Route Management) Act 2002</i>.</p>	<p>AO8.1 The land is free of declared pest plants before development establishes new buildings, structures and practices;</p> <p>or</p> <p>AO8.2 Pest plants detected on a development site are removed in accordance with a management plan prepared by an appropriately qualified person prior to construction of buildings and structures or earthworks.</p> <p>Note - A declaration from an appropriately qualified person validates the land being free from pest plants.</p> <p>Declared pest plants include locally declared and State declared pest plants.</p>	<p>Not applicable.</p>

9.4.4 Filling and excavation code

9.4.4.1 Application

- (1) This code applies to assessing:
 - (a) operational work for filling or excavation which is self-assessable or code assessable development if this code is an applicable code identified in the assessment criteria column of a table of assessment; or
 - (b) a material change of use or reconfiguring a lot if:
 - (i) assessable development where this code is identified as a prescribed secondary code in the assessment criteria column of a table of assessment; or
 - (ii) impact assessable development, to the extent relevant.

Note—This code does not apply to building work that is regulated under the Building Code of Australia.

- (2) When using this code, reference should be made to Part 5.

9.4.4.2 Purpose

- (1) The purpose of the Filling and excavation code is to assess the suitability of development for filling or excavation.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) filling or excavation does not impact on the character or amenity of the site and surrounding areas;
 - (b) filling and excavation does not adversely impact on the environment;
 - (c) filling and excavation does not impact on water quality or drainage of upstream, downstream or adjoining properties;
 - (d) filling and excavation is designed to be fit for purpose and does not create land stability issues;
 - (e) filling and excavation works do not involve complex engineering solutions.

9.4.4.3 Criteria for assessment

Table 9.4.4.3.a – Filling and excavation code – for self-assessable and assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
Filling and excavation - General		

**PO1**

All filling and excavation work does not create a detrimental impact on the slope stability, erosion potential or visual amenity of the site or the surrounding area.

AO1.1

The height of cut and/or fill, whether retained or not, does not exceed 2 metres in height.

and

Cuts in excess of those stated in A1.1 above are separated by benches/ terraces with a minimum width of 1.2 metres that incorporate drainage provisions and screen planting.

AO1.2

Cuts are supported by batters, retaining or rock walls and associated benches/terraces are capable of supporting mature vegetation.

AO1.3

Cuts are screened from view by the siting of the building/structure, wherever possible.

Complies with PO1.

The Excavation and Filling Code is only an assessment benchmark for the Reconfiguring a Lot aspect of the Development Application. It is not required to be addressed in response to the Material Change of Use Application.

The Reconfiguring a Lot aspect of this Development Application is required to create a Community Title Scheme for the Resort Complex (Hotel lot) and the Short Term Accommodation / Multiple Dwelling (Villa) lot.

The excavation and filling occurs as a result of the primary material change of use.

This code will be addressed in detail at the Operational Works stage of the development.

Existing ground levels across the site generally range from low RL 3s along the rear boundary to high RL 4's along the Davidson Street frontage.

The finished surface level of the Resort Complex of RL 5.8m AHD is set by the service basement's minimum head height of 4.5m, and gradient of the basement entrance ramp from Crimmins Street and the desire to limit excavation within any probable ASS/PASS material.

The finished surface level of the hotel and the need for connectivity with the surrounding buildings results in the site requiring the importation of fill and the retaining of the majority of the site's perimeter.



		<p>The perimeter retaining wall is generally keep below a height of 1.5m in the areas which are likely visible to the general public (i.e., north, east and south boundaries), however the height increase to approximately 2.6m high along the rear boundary which is visually shielded by the existing vegetation.</p> <p>Preliminary 12D modelling of the sites finished levels, basements and pools indicates earthworks volumes are in the order of the following amounts:</p> <ul style="list-style-type: none">• Cut 9,500 m³• Fill 24,500 m³ <p>After consideration of bulking factors and fill won from services and retaining walls, the imported fill amount required for the proposed development is expected to be approximately 15,000m³.</p>
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Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO1.4 Topsoil from the site is retained from cuttings and reused on benches/terraces.</p> <p>AO1.5 No crest of any cut or toe of any fill, or any part of any retaining wall or structure is closer than 600mm to any boundary of the property, unless the prior written approval of the adjoining landowner has been obtained.</p> <p>AO1.6 Non-retained cut and/or fill on slopes are stabilised and protected against scour and erosion by suitable measures, such as grassing, landscaping or other protective/aesthetic measures.</p>	
Visual Impact and Site Stability		
<p>PO2 Filling and excavation are carried out in such a manner that the visual/scenic amenity of the area and the privacy and stability of adjoining properties is not compromised.</p>	<p>AO2.1 The extent of filling and excavation does not exceed 40% of the site area, or 500m² whichever is the lesser, except that AO2.1 does not apply to reconfiguration of 5 lots or more.</p> <p>AO2.2 Filling and excavation does not occur within 2 metres of the site boundary.</p>	<p>Complies with PO2</p> <p>Filling and excavation will be carried out in such a manner that the visual/scenic amenity of the area and the privacy and stability of adjoining properties is not compromised</p>
Flooding and drainage		



<p>PO3 Filling and excavation does not result in a change to the run off characteristics of a site which then have a detrimental impact on the site or nearby land or adjacent road reserves.</p>	<p>AO3.1 Filling and excavation does not result in the ponding of water on a site or adjacent land or road reserves.</p> <p>AO3.2 Filling and excavation does not result in an increase in the flow of water across a site or any other land or road reserves.</p> <p>AO3.3 Filling and excavation does not result in an increase in the volume of water or concentration of water in a watercourse and overland flow paths.</p> <p>AO3.4 Filling and excavation complies with the specifications set out in Planning Scheme Policy No SC5 – FNQROC Development Manual.</p>	<p>Complies with AO3.1 – AO3.4</p> <p>Filling and excavation does not result in stormwater run-off or overland flow that-</p> <ul style="list-style-type: none"> Increases the flow of water across the site or any other land/road reserves. Increases the volume of water or concentration of water in a watercourse and overland flow paths. <p>The filling and excavation will not result in ponding of water on a site or adjacent road reserves.</p> <p>The flood modelling concludes that base on a 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas there is no worsening effect on surrounding properties or road reserve.</p> <p>A supporting civil engineering report is provided as Attachment 5. A detailed flood study is provided at Attachment 8. The Site's hydraulic design is provided at Attachment 9.</p>
Water quality		
<p>PO4 Filling and excavation does not result in a reduction of the water quality of receiving waters.</p>	<p>AO4 Water quality is maintained to comply with the specifications set out in Planning Scheme Policy No SC5 – FNQROC Development Manual.</p>	<p>The proposed development can be conditioned to comply with AO4.</p>



Performance outcomes	Acceptable outcomes	Applicant response
Infrastructure		
PO5 Excavation and filling does not impact on Public Utilities.	AO5 Excavation and filling is clear of the zone of influence of public utilities.	The proposed development can be conditioned to comply with AO5.

9.4.6 Landscaping code

9.4.6.1 Application

- (1) This code applies to assessing:
 - (a) operational work which requires a compliance assessment as a condition of a development permit; or
 - (b) a material change of use or reconfiguring a lot if:
 - (i) assessable development where this code is identified in the assessment criteria column of the table of assessment;
 - (ii) impact assessable development, to the extent relevant.
- (2) When using this code, reference should be made to Part 5.

9.4.6.2 Purpose

- (1) The purpose of the Landscaping code is to assess the landscaping aspects of a development.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) The tropical, lush landscape character of the region is retained, promoted and enhanced through high quality landscape works;
 - (b) The natural environment of the region is enhanced;
 - (c) The visual quality, amenity and identity of the region is enhanced;
 - (d) Attractive streetscapes and public places are created through landscape design;
 - (e) As far as practical, existing vegetation on site is retained, and protected during works and integrated with the built environment;
 - (f) Landscaping is provided to enhance the tropical landscape character of development and the region;
 - (g) Landscaping is functional, durable, contributes to passive energy conservation and provides for the efficient use of water and ease of ongoing maintenance;
 - (h) Landscaping takes into account utility service protection;
 - (i) Weed species and invasive species are eliminated from development sites;
 - (j) Landscape design enhances personal safety and incorporates CPTED principles.

9.4.6.3 Criteria for assessment

Table 9.4.6.3.a – Landscaping code –assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
Landscape design		

**PO1**

Development provides landscaping that contributes to and creates a high quality landscape character for the site, street and local areas of the Shire by:

- (a) promoting the Shire's character as a tropical environment;
- (b) softening the built form of development;
- (c) enhancing the appearance of the development from within and outside the development and makes a positive contribution to the streetscape;
- (d) screening the view of buildings, structures, open storage areas, service equipment, machinery plant and the like from public places, residences and other sensitive development;
- (e) where necessary, ensuring the privacy of

AO1

Development provides landscaping:

- (a) in accordance with the minimum area, dimensions and other requirements of applicable development codes;
- (b) that is designed and planned in a way that meets the guidelines for landscaping outlined in Planning Scheme Policy SC6.7 – Landscaping;
- (c) that is carried out and maintained in accordance with a landscaping plan that meets the guidelines for landscaping outlined in Planning Scheme Policy SC6.7 – Landscaping.

Note - Planning scheme policy SC6.7 – Landscaping provides guidance on meeting the outcomes of this code. A landscape plan submitted for approval in accordance with the Planning policy is one way to achieve this outcome.

Complies with PO1

The Development meets the landscaping requirements of the Tourist Accommodation Zone.

The landscaping for the site is a key feature in creating a tropical environment at the streetscape and internal to the development.

All servicing and equipment will be appropriately screen internal and external to the site.

The proposed development will deliver a superior result in terms of scenic amenity when compared to the current on-site development.

Dense tropical landscaping is a critical feature of this Luxury Resort Complex and Short Term Accommodation / Multiple Dwelling Villas.

A detailed landscaping plan is provided at Attachment 3.



Performance outcomes	Acceptable outcomes	Applicant response
habitable rooms and private outdoor recreation areas; (f) contributing to a comfortable living environment and improved energy efficiency, by providing shade to reduce glare and heat absorption and re-radiation from buildings, parking areas and other hard surfaces; (g) ensuring private outdoor recreation space is useable; (h) providing long term soil erosion protection; (i) providing a safe environment; (j) integrating existing vegetation and other natural features of the premises into the development; (k) not adversely affecting vehicular and pedestrian sightlines and road safety.		
For assessable development		
PO2 Landscaping contributes to a sense of place, is functional to the surroundings and enhances the streetscape and visual appearance of the development.	AO2.1 No acceptable outcomes are specified. Note - Landscaping is in accordance with the requirements specified in Planning scheme policy SC6.7 – Landscaping. AO2.2 Tropical urbanism is incorporated into building design. Note – ‘Tropical urbanism’ includes many things such as green walls, green roofs, podium planting and vegetation incorporated into the design of a building.	Complies with AO2.2. The building design incorporates Tropical Urbanism and includes internal features which incorporate extensive landscaping. The external façade is designed to incorporate a number of aspects of tropical urbanism. A detailed landscaping plan is provided at Attachment 3. Elevations and renders of the built form of the Resort Complex demonstrate Tropical Urbanism features.



<p>PO3 Development provides landscaping that is , as far as practical, consistent with the existing desirable landscape character of the area and protects trees, vegetation and other features of ecological, recreational, aesthetic and cultural value.</p>	<p>AO3.1 Existing vegetation on site is retained and incorporated into the site design, wherever possible, utilising the methodologies and principles outline in AS4970-2009 Protection of Trees on Development Sites.</p> <p>AO3.2 Mature vegetation on the site that is removed or damaged during development is replaced with advanced species.</p> <p>AO3.3 Where there is an existing landscape character in a street or locality which results from existing vegetation, similar species are incorporated into new development.</p> <p>AO3.4 Street trees are species which enhance the landscape character of the streetscape, with species chosen from the Planning scheme policy SC6.7 – Landscaping.</p>	<p>Complies with PO3.</p> <p>The proposed development does require the removal of trees on site and within the streetscape.</p> <p>A detailed landscaping plan and palette has been designed to ensure the proposed development is not only consistent with the landscaped character of the area but promotes an exemplary standard of landscaping in the tropics.</p> <p>Dense planting is proposed at the street frontage and throughout the development and species selection ensures mature planting on site is achievable.</p> <p>Details of vegetation removal and a detailed landscaping plan is provided at Attachment 3.</p>
<p>PO4 Plant species are selected with consideration to the scale and form of development, screening, buffering, streetscape, shading and the locality of</p>	<p>AO4 Species are selected in accordance with Planning scheme policy SC6.7 – Landscaping.</p>	<p>Complies with AO4.</p> <p>The species selected generally correspond to the Planning Scheme policy.</p>



Performance outcomes	Acceptable outcomes	Applicant response
the area.		
PO5 Shade planting is provided in car parking areas where uncovered or open, and adjacent to driveways and internal roadways.	AO5 Species are selected in accordance with Planning scheme policy SC6.7 – Landscaping.	Complies with PO5. Internal roadways will be landscaped in accordance with the provided landscaping plan. Lush internal landscaping within the site in a defining feature of this development proposed.
PO6 Landscaped areas are designed in order to allow for efficient maintenance.	AO6.1 A maintenance program is undertaken in accordance with Planning scheme policy SC6.7 – Landscaping. AO6.2 Tree maintenance is to have regard to the 'Safe Useful Life Expectancy of Trees (SULE). Note – It may be more appropriate to replace trees with a SULE of less than 20 years (as an example), and replant with younger healthy species.	The Development can be conditioned to comply with AO6.1 & 6.2.
PO7 Podium planting is provided with appropriate species for long term survival and ease of maintenance, with beds capable of proper drainage.	AO7.1 Podium planting beds are provided with irrigation and are connected to stormwater infrastructure to permit flush out. AO7.2 Species of plants are selected for long term performance designed to suit the degree of access to podiums and roof tops for maintenance.	Complies with PO7. Where podium planting is proposed it has been designed for ease of maintenance and proper drainage. As the brand is a luxury hotel, operational processes will be in place to ensure landscaping is adequately maintained.
PO8 Development provides for the removal of all weed and invasive species and implement on-going measures to ensure that weeds and invasive species do not reinfest the site and nearby premises.	AO8 Weed and invasive species detected on a development site are removed in accordance with a management plan prepared by an appropriately qualified person.	Complies with AO8. Any weed species detected on the development site will be removed during construction and prior to landscaping.



PO9 The landscape design enhances personal safety and reduces the potential for crime and vandalism.	AO9 No acceptable outcomes are specified. Note - Planning scheme policy SC6.3 – Crime prevention through environmental design (CPTED) provides guidance on meeting this outcome.	Complies with PO9. The landscaping plan has adopted CPTED principles in design.
PO10 The location and type of plant species does not adversely affect the function and accessibility of services and facilities and service areas.	AO10 Species are selected in accordance with Planning scheme policy SC6.7 – Landscaping.	Complies with PO10. The landscaping has been designed specifically to ensure continued access to and function of services.

9.4.9 Vegetation management code

9.4.9.1 Application

- (1) This code applies to assessing operational works for vegetation damage if:
 - (a) assessable development where the code is an applicable code identified in the assessment criteria column of a table of assessment;
 - (b) impact assessable development, to the extent relevant.
- (2) When using this code, reference should be made to Part 5.

9.4.9.2 Purpose

- (1) The purpose of the Vegetation management code is achieved through the overall outcomes.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) vegetation is protected from inappropriate damage;
 - (b) where vegetation damage does occur it is undertaken in a sustainable manner;
 - (c) significant trees are maintained and protected;
 - (d) biodiversity and ecological values are protected and maintained;
 - (e) habitats for rare, threatened and endemic species of flora and fauna are protected and maintained;
 - (f) landscape character and scenic amenity is protected and maintained;
 - (g) heritage values are protected and maintained.

9.4.9.3 Criteria for assessment

Table 9.4.9.3.a – Vegetation management –assessable development

Note – All vegetation damage is to have regard to the provisions of AS4373-2009 Pruning of Amenity Trees

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		

**PO1**

Vegetation is protected to ensure that:

- (a) the character and amenity of the local area is maintained;
- (b) vegetation damage does not result in fragmentation of habitats;
- (c) vegetation damage is undertaken in a sustainable manner;
- (d) the Shire's biodiversity and ecological values are maintained and protected;
- (e) vegetation of historical, cultural and / or visual significance is retained;
- (f) vegetation is retained for erosion prevention and slope stabilisation.

AO1.1

Vegetation damage is undertaken by a statutory authority on land other than freehold land that the statutory authority has control over;

or

AO1.2

Vegetation damage is undertaken by or on behalf of the local government on land controlled, owned or operated by the local government;

or

AO1.3

Vegetation damage, other than referenced in AO1.1 or AO1.2 is the damage of:

- (a) vegetation declared as a pest pursuant to the *Land Protection (Pest and Stock Route Management) Act 2002*; or
- (b) vegetation identified within the local government's register of declared plants pursuant to the local government's local laws; or
- (c) vegetation is located within a Rural zone and the trunk is located within ten metres of an existing building; or
- (d) vegetation is located within the Conservation zone or Environmental management zone and the trunk is located within three metres of an existing or approved structure, not including a boundary fence;.

or

AO1.4

Vegetation damage that is reasonably necessary for carrying out work that is:

- (a) authorised or required under legislation or a local law;
- (b) specified in a notice served by the local government or another regulatory authority;

Complies with PO1.

The Vegetation Management Code is only an assessment benchmark for the Reconfiguring a Lot aspect of the Development Application. It is not required to be addressed in response to the Material Change of Use Application.

The Reconfiguring a Lot aspect of this Development Application is required to create a Community Title Scheme for the Resort Complex (Hotel lot) and the Short Term Accommodation / Multiple Dwelling (Villa) lot.

The vegetation clearing occurs as a result of the primary material change of use.

Notwithstanding, this code has been addressed in detail.

The site is not mapped as containing any protected vegetation or natural areas.

All vegetation on site has been established as a result of previous landscaping schemes associated with the existing use.

The vegetation to be removed is plotted on the Development Plans provided at Attachment 3.

Whilst there are some reasonably large trees to be removed, most trees are palms and mangoes and other landscaped species.

Given the extent of development already occurring on site, additional vegetation damage will not result in fragmentation of habitats or



	<p>or</p> <p>AO1.5 Vegetation damage for development where the damage is on land the subject of a valid development approval and is necessary to give effect to the development approval;</p> <p>or</p> <p>AO1.6 Vegetation damage is in accordance with an approved Property Map of Assessable Vegetation issued under the <i>Vegetation Management Act 1999</i>;</p> <p>or</p> <p>AO1.7 Vegetation damage is essential to the maintenance of an existing fire break;</p> <p>or</p> <p>AO1.8 Vegetation damage is essential to prevent interference to overhead service cabling;</p> <p>or</p> <p>AO1.9 Vegetation damage is for an approved Forest practice, where the lot is subject to a scheme approved under the <i>Vegetation Management Act 1999</i>;</p> <p>or</p>	<p>any impact on Shire's biodiversity and ecological values.</p> <p>There is no known vegetation of historical, cultural and / or visual significance on site.</p> <p>Additionally, vegetation is not required to be retained for erosion prevention and slope stabilisation.</p> <p>Finally, the character and amenity of the local area is improved as a result of the proposed landscaping plan provided at Attachment 3.</p>
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Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO1.10 Vegetation damage is undertaken in accordance with section 584 of the <i>Sustainable Planning Act 2009</i>.</p> <p>AO1.11 Vegetation damage where it is necessary to remove one tree in order to protect an adjacent more significant tree (where they are growing close to one another).</p>	



Performance outcomes	Acceptable outcomes	Applicant response
	AO1.12 Private property owners may only remove dead, dying, structurally unsound vegetation following receipt of written advice from, at minimum, a fully qualified Certificate V Arborist. A copy of the written advice is to be submitted to Council for its records, a minimum of seven business days prior to the vegetation damage work commencing.	
PO2 Vegetation damaged on a lot does not result in a nuisance	AO2.1 Damaged vegetation is removed and disposed of at an approved site; or AO2.2 Damaged vegetation is mulched or chipped if used onsite.	The development can be conditioned to comply with AO2.1 and AO 2.2.
For assessable development		
PO3 Vegetation damage identified on the Places of significance overlay lot does not result in a negative impact on the site's heritage values.	AO3 No acceptable outcomes are prescribed.	Not applicable.

8.2.1 Acid sulfate soils overlay code

8.2.1.1 Application

- (1) This code applies to assessing a material change of use, reconfiguring a lot, operational work or building work within the Acid sulfate soils overlay, if:
 - (a) self-assessable or assessable development where the code is identified as being applicable in the Assessment criteria for the Overlay Codes contained in the Levels of Assessment Tables in section 5.6;
 - (b) impact assessable development.
- (2) Land in the Acid sulphate soils overlay is identified on the Acid sulfate soils overlay map in Schedule 2 and includes the following sub-categories:
 - (a) Land at or below the 5m AHD sub-category;
 - (b) Land above the 5m AHD and below the 20m AHD sub-category.
- (3) When using this code, reference should be made to Part 5.

8.2.1.2 Purpose

- (1) The purpose of the acid sulfate soils overlay code is to:
 - (a) implement the policy direction in the Strategic Framework, in particular:
 - (i) Theme 2: Environment and landscape values, Element 3.5.4 Coastal zones.
 - (ii) Theme 3: Natural resource management, Element 3.6.2 land and catchment management, Element 3.6.3 Primary production, forestry and fisheries.
- (2) enable an assessment of whether development is suitable on land within the Acid sulfate soils overlay sub-categories.
- (3) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Development ensures that the release of any acid and associated metal contaminant is avoided by not disturbing acid sulfate soils when excavating, removing soil or extracting ground water or filling land;
 - (b) Development ensures that disturbed acid sulfate soils, or drainage waters, are treated and, if required, on-going management practices are adopted that minimise the potential for environmental harm from acid sulfate soil and protect corrodible assets from acid sulfate soil.

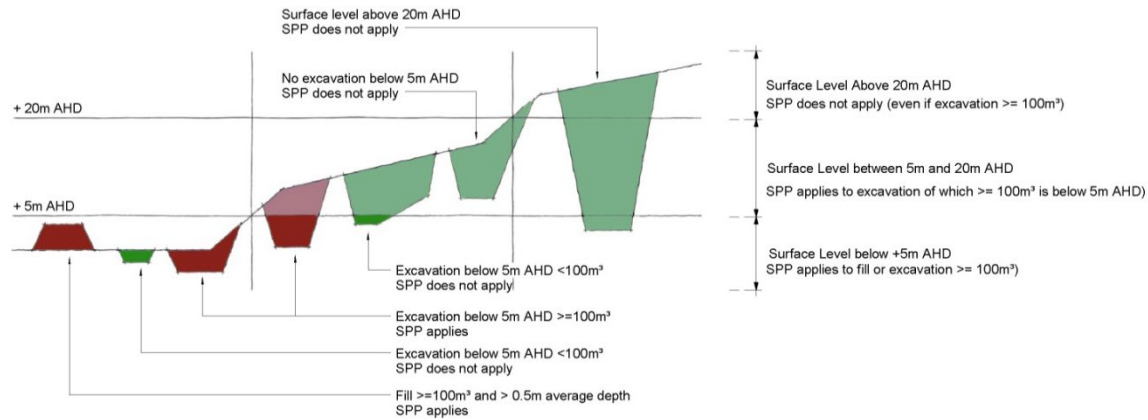
Criteria for assessment**Table 8.2.1.3.a – Acid sulfate soils overlay code – assessable development**

Performance outcomes	Acceptable outcomes	Applicant response
For assessable development		
PO1 The extent and location of potential or actual acid sulfate soils is accurately identified.	AO1.1 No excavation or filling occurs on the site. or AO1.2 An acid sulfate soils investigation is undertaken. Note - Planning scheme policy SC 6.12– Potential and actual acid sulfate soils provides guidance on preparing an acid sulfate soils investigation.	Complies with PO1. The main PASS materials are the marine clay unit. Marine clay starts generally between RL1.4 m to -2.7 and extends to about RL-2.8 m to -6.4 m. PASS is identified in the Geotechnical Report provided at Attachment 7 and has been considered during the development of the civil plans.
PO2 Development avoids disturbing potential acid sulfate soils or actual acid sulfate soils, or is managed to avoid or minimise the release of acid and metal contaminants.	AO2.1 The disturbance of potential acid sulfate soils or actual acid sulfate soils is avoided by: (a) not excavating, or otherwise removing, soil or sediment identified as containing potential or actual acid sulfate soils; (b) not permanently or temporarily extracting groundwater that results in the aeration of previously saturated acid sulfate soils; (c) not undertaking filling that results in: (i) actual acid sulfate soils being moved below the water table; (ii) previously saturated acid sulfate soils being aerated. or	The Development can be conditioned to comply with PO2 during construction and is capable of complying with this requirement.



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO2.2</p> <p>The disturbance of potential acid sulfate soils or actual acid sulfate soils is undertaken in accordance with an acid sulfate soils management plan and avoids the release of metal contaminants by:</p> <ul style="list-style-type: none"> (a) neutralising existing acidity and preventing the generation of acid and metal contaminants; (b) preventing the release of surface or groundwater flows containing acid and metal contaminants into the environment; (c) preventing the in situ oxidisation of potential acid sulfate soils and actual acid sulfate soils through ground water level management; (d) appropriately treating acid sulfate soils before disposal occurs on or off site; (e) documenting strategies and reporting requirements in an acid sulfate soils environmental management plan. <p>Note - Planning scheme policy SC 6.12 – Acid sulfate soils provides guidance on preparing an acid sulfate soils management plan.</p>	
<p>PO3</p> <p>No environmental harm is caused as a result of exposure to potential acid sulfate soils or actual acid sulfate soils.</p>	<p>AO3</p> <p>No acceptable outcomes are prescribed.</p>	<p>The Development will comply with PO3 and can be conditioned to ensure compliance with PO3.</p>

Figure 8.2.1.3.a – Acid sulfate soils (SPP triggers)



8.2.3 Coastal environment overlay code

8.2.3.1 Application

- (1) This code applies to assessing a material change of use, reconfiguring a lot, operational work or building work within the Coastal environment overlay, if:
 - (a) self assessable or assessable development where the code is identified as being applicable in the Assessment criteria for the Overlay Codes contained in the Levels of Assessment Tables in section 5.6;
 - (b) impact assessable development.
- (2) Land in the Coastal hazard overlay is identified on the Coastal environment overlay map in Schedule 2 and includes the following sub-categories:
 - (a) Coastal management district sub-category;
 - (b) Erosion prone area sub-category.
- (3) When using this code, reference should be made to Part 5.

8.2.3.2 Purpose

- (1) The purpose of the Coastal environment overlay code is to:
 - (a) implement the policy direction in the Strategic Framework, in particular:
 - (i) Theme 1 Settlement pattern: Element 3.4.7 Mitigation of hazards;
 - (ii) Theme 2 Environment and landscape values: Element 3.5.4 Coastal zones;
 - (iii) Theme 3 Natural resource management: Element 3.6.2 Land and catchment management.
 - (b) enable an assessment of whether development is suitable on land within the Coastal processes sub-categories.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) facilitate the protection of both coastal processes and coastal resources;
 - (b) facilitating coastal dependent development on the foreshore over other development;
 - (c) public access to the foreshore protects public safety;
 - (d) maintain the erosion prone area as a development free buffer zone (other than for coastal dependent, temporary or relocatable development);
 - (e) require redevelopment of existing permanent buildings or structures in an erosion prone area to avoid coastal erosion risks, manage coastal erosion risks through a strategy of planned retreat or mitigate coastal erosion risks;

- (f) require development to maintain or enhance natural processes and the protective function of landforms and vegetation that can mitigate risks associated with coastal erosion;
- (g) locate and design community infrastructure to maintain the required level of functionality during and immediately after a coastal hazard event.

Criteria for assessment

Table 8.2.3.3.a – Coastal environment overlay code – self-assessable and assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
PO1 No works other than coastal protection works extend seaward of the coastal building line.	AO1.1 Development (including all buildings and other permanent structures such as swimming pools and retaining walls) does not extend seaward of a coastal building line. Note – Coastal building lines are declared under the Coastal Protection and Management Act 1995 and are administered by the State Department of Environment and Heritage Protection. AO1.2 Coastal protection works are only undertaken as a last resort where coastal erosion presents an immediate threat to public safety or existing buildings or structures and the property cannot be relocated or abandoned. AO1.3 Coastal protection works are as far landward as practicable on the lot containing the property to the maximum extent reasonable. AO1.4 Coastal protection work mitigates any increase in the coastal hazard.	Complies with AO 1.1 – AO1.4 There is no nominated coastal building line and coastal protection works are not proposed.



Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
PO2 Where a coastal building line does not exist on a lot fronting the coast or a reserve adjoining the coast, development is setback to maintain the amenity and use of the coastal resource.	AO2 Where a coastal building line does not exist on a lot fronting the coast or a reserve adjoining the coast, development (including all buildings and structures such as swimming pools) and retaining walls are set back not less than 6 metres from the seaward boundary of the lot.	Complies with PO2. The adjacent reserve is not used and does not visible to an extent it would cause an amenity issue. The setbacks are consistent with existing short term accommodation development fronting Davidson Street.
For assessable development		
Erosion prone areas		
PO3 Development identifies erosion prone areas (coastal hazards).	AO3 No acceptable outcomes are prescribed.	Complies with PO3 Erosion prone areas are identified in the supporting Planning Report at Attachment 4.
PO4 Erosion prone areas are free from development to allow for natural coastal processes.	AO4.1 Development is not located within the Erosion prone area, unless it can be demonstrated that the development is for: (a) community infrastructure where no suitable alternative location or site exists for this infrastructure; or (b) development that reflects the preferred development outcomes in accordance with the zoning of the site (i.e. in the Low density residential zone, a dwelling house is a preferred development outcome in accordance with the zoning of the site)	Complies with PO4 The development reflects the preferred development outcomes in accordance with the zoning of the site. Additionally, development within the Erosion Prone area is consistently undertaken for existing short term accommodation development fronting Davidson Street. The development allows for natural coastal processes to continue and this is addressed in s2.4 of the Flood Study provided at Attachment 8.



Performance outcomes	Acceptable outcomes	Applicant response
	AO4.2 Development involving existing permanent buildings and structures within an erosion prone area does not increase in intensity of its use by: (a) adding additional buildings or structures; or (b) incorporating a land use that will result in an increase in the number of people or employees occupying the site.	
Coastal management districts		
PO5 Natural processes and protective functions of landforms and vegetation are maintained.	PO5.1 Development within the coastal management district: (a) maintains vegetation on coastal land forms where its removal or damage may: (i) destabilise the area and increase the potential for coastal erosion, or (ii) interrupt the natural sediment trapping processes or dune or land building processes; (b) maintains sediment volumes of dunes and near-shore coastal landforms, or where a reduction in sediment volumes cannot be avoided, increased risks to development from coastal erosion are mitigated by location, design and construction and operating standards; (c) minimises the need for erosion control structures or riverine hardening through location, design and construction standards; (d) maintains physical coastal processes outside the development footprint for the development, including longshore transport of sediment along the coast; (e) reduces the risk of shoreline erosion for areas adjacent to the development footprint to the	Not applicable.



Performance outcomes	Acceptable outcomes	Applicant response
	maximum extent feasible in the case of erosion control structures.	



Performance outcomes	Acceptable outcomes	Applicant response
	<p>PO5.2 Where development proposes the construction of an erosion control structure:</p> <ul style="list-style-type: none"> (a) it is demonstrated that it is the only feasible option for protecting permanent structures from coastal erosion; and (b) those permanent structures cannot be abandoned or relocated in the event of coastal erosion occurring <p>PO5.3 Development involving reclamation:</p> <ul style="list-style-type: none"> (a) does not alter, or otherwise minimises impacts on, the physical characteristics of a waterway or the seabed near the reclamation, including flow regimes, hydrodynamic forces, tidal water and riverbank stability; (b) is located outside active sediment transport area, or otherwise maintains sediment transport processes as close as possible to their natural state; (c) ensures activities associated with the operation of the development maintain the structure and condition of vegetation communities and avoid wind and water run-off erosion. 	
<p>PO6 Development avoids or minimises adverse impacts on coastal resources and their values to the maximum extent reasonable.</p>	<p>AO6.1 Coastal protection work that is in the form of beach nourishment uses methods of placement suitable for the location that do not interfere with the long-term use of the locality, or natural values within or neighbouring the proposed placement site.</p> <p>And</p>	Not applicable.



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO6.2 Marine development is located and designed to expand on or redevelop existing marine infrastructure unless it is demonstrated that it is not practicable to co-locate the development with existing marine infrastructure;</p> <p>and</p> <p>AO6.3 Measures are incorporated as part of siting and design of the development to maintain or enhance water quality to achieve the environmental values and water quality objectives outlined in the Environmental Protection (Water) Policy 2009.</p> <p>and</p> <p>AO6.4 Development avoids the disturbance of acid sulfate soils, or where it is demonstrated that this is not possible, the disturbance of acid sulfate soils is carefully managed to minimise and mitigate the adverse effects of disturbance on coastal resources.</p> <p>and</p> <p>AO6.4 Design and siting of development protects and retains identified ecological values and underlying ecosystem processes within the development site to the greatest extent practicable.</p>	



Performance outcomes	Acceptable outcomes	Applicant response
P07 Development is to maintain access to and along the foreshore for general public access.	A07.1 Development provides for regular access points for pedestrians including approved walking tracks, boardwalks and viewing platforms. and A07.2 Development provides for regular access points for vehicles including approved roads and tracks. or A07.3 Development demonstrates an alternative solution to achieve an equivalent standard of performance.	Not applicable.
P08 Public access to the coast is appropriately located, designed and operated.	A08.1 Development maintains or enhances public access to the coast. or A08.2 Development is located adjacent to state coastal land or tidal water and minimises and offsets any loss of access to and along the foreshore within 500 metres. or A08.3 Development adjacent to state coastal land or tidal water demonstrates an alternative solution to achieve an equivalent standard and quality of access	Not applicable.



Performance outcomes	Acceptable outcomes	Applicant response
<p>PO9 Development adjacent to state coastal land or tidal water is located, designed and operated to:</p> <ul style="list-style-type: none"> (a) maintain existing access to and along the foreshore; (b) minimise any loss of access to and along the foreshore, or (c) offset any loss of access to and along the foreshore by providing for enhanced alternative access in the general location. 	<p>AO9.1 Development adjacent to state coastal land or tidal water:</p> <ul style="list-style-type: none"> (a) demonstrates that restrictions to public access are necessary for: <ul style="list-style-type: none"> (i) the safe and secure operation of development; (ii) the maintenance of coastal landforms and coastal habitat; or (b) maintains public access (including public access infrastructure that has been approved by the local government or relevant authority) through the site to the foreshore for: <ul style="list-style-type: none"> (i) pedestrians via access points including approved walking tracks, boardwalks and viewing platforms; (ii) vehicles via access points including approved roads or tracks. <p>AO9.2 Development adjacent to state coastal land or tidal water:</p> <ul style="list-style-type: none"> (a) is located and designed to: <ul style="list-style-type: none"> (i) allow safe unimpeded access to, over, under or around built infrastructure located on, over or along the foreshore, for example through the provision of esplanades or easement corridors to preserve future access; (ii) ensure emergency vehicles can access the area near the development. <p>or</p>	<p>Not applicable.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>(b) minimises and offsets any loss of access to and along the foreshore within 500m of existing access points and development is located and designed to:</p> <p>(i) allow safe unimpeded access to, over, under or around built infrastructure located on, over or along the foreshore, and</p> <p>(ii) ensure emergency vehicles can access the area near the development.</p>	
<p>AO10 Development that involves reconfiguring a lot for urban purposes adjacent to the coast is designed to ensure public access to the coast in consideration of public access demand from a whole-of-community basis and the maintenance of coastal landforms and coastal habitat.</p>	<p>AO10.1 Development complies if consideration of public access demand from a whole-of-community basis and the maintenance of coastal landforms and coastal habitat is undertaken.</p> <p>or</p> <p>AO10.2 Development demonstrates an alternative solution to achieve an equivalent standard and quality of access.</p>	Not applicable.
<p>PO11 Development maintains public access to State coastal land by avoiding private marine development attaching to, or extending across, non-tidal State coastal land.</p>	<p>AO11 Private marine access structures and other structures such as decks or boardwalks for private use do not attach to or extend across State coastal land that is situated above high water mark</p>	Not applicable.
<p>PO12 Development in connection with an artificial waterway enhances public access to coastal waters.</p>	<p>AO12 The artificial waterway avoids intersecting with or connection to inundated land or leased land where the passage, use or movement of vessels in water on the land could be restricted or prohibited by the registered proprietor of the inundated land or leased land.</p>	Not applicable.



Performance outcomes	Acceptable outcomes	Applicant response
Coastal landscapes, views and vistas		
PO13 Development maintains and / or enhances natural coastal landscapes, views and vistas.	AO13 No acceptable outcomes are prescribed.	Complies with PO13 There are no specific views or vistas impacted by the proposed development.
PO14 Coastal settlements are consolidated through the concentration of development within the existing urban areas through infill and conserving the natural state of the coastal area outside existing urban areas.	AO14 No acceptable outcomes are prescribed.	Complies with PO14 The proposed development is consolidated with existing short term accommodation and tourism offerings in an identified urban area.
Private marine development		
PO15 Private marine development is to avoid attaching to, or extending across, non-tidal State coastal land.	AO15 Private marine development and other structures such as decks or boardwalks for private use do not attach to, or extend across, State coastal land that is situated above high water mark. Note – For occupation permits or allocations of State land, refer to the <i>Land Act 1994</i> .	Not applicable.
PO16 The location and design of private marine development does not adversely affect the safety of members of the public access to the foreshore.	AO16 Private marine development does not involve the erection or placement of any physical barrier preventing existing access, along a public access way to the foreshores.	Not applicable.
PO17 Private marine development is of a height and scale and size compatible with the character and amenity of the location.	AO17 Private marine development has regard to: <ul style="list-style-type: none"> (a) the height, scale and size of the natural features of the immediate surroundings and locality; (b) the height, scale and size of existing buildings or other structures in the immediate surroundings and the locality; 	Not applicable.



Performance outcomes	Acceptable outcomes	Applicant response
	<p>(c) if the relevant planning scheme states that desired height, scale or size of buildings or other structures in the immediate surroundings or locality – the stated desired height, scale or size.</p> <p>Note – The prescribed tidal works code in the <i>Coastal Protection and Management Regulation 2003</i> outlines design and construction requirements that must be complied with.</p>	
PO18 Private marine development avoids adverse impacts on coastal landforms and coastal processes.	AO18 Private marine development does not require the construction of coastal protection works, shoreline or riverbank hardening or dredging for marine access.	Not applicable.
For dry land marinas and artificial waterways		
PO19 Dry land marinas and artificial waterways: <ul style="list-style-type: none"> (a) avoid impacts on coastal resources; (b) do not contribute to the degradation of water quality; (c) do not increase the risk of flooding; (d) do not result in the degradation or loss of MSES; (e) do not result in an adverse change to the tidal prism of the natural waterway to which development is connected. (f) does not involve reclamation of tidal land other than for the purpose of: <ul style="list-style-type: none"> (i) coastal dependent development, public marine development; or (i) community infrastructure, where there is no feasible alternative; or 	AO19 No acceptable solutions are prescribed.	Not applicable.

Performance outcomes		Acceptable outcomes	Applicant response
(iii)	strategic ports, boat harbours or strategic airports and aviation facilities in accordance with a statutory land use plan; or		
(iv)	coastal protection works or works necessary to protect coastal resources and processes.		

8.2.4 Flood and storm tide hazard overlay code

8.2.4.1 Application

- (1) This code applies to assessing a material change of use, reconfiguring a lot, operational work or building work within the Flood and storm tide hazard overlay, if:
 - (a) self assessable or assessable development where the code is identified as being applicable in the Assessment criteria for the Overlay Codes contained in the Levels of Assessment Tables in section 5.6;
 - (b) impact assessable development.
- (2) Land in the Flood and storm tide hazard overlay is identified on the Flood and storm tide hazard overlay map in Schedule 2 and includes the:
 - (a) Storm tide – high hazard sub-category;
 - (b) Storm tide – medium hazard sub-category;
 - (c) Flood plain assessment sub-category;
 - (d) 100 ARI Mossman, Port Douglas and Daintree Township Flood Studies sub-category.
- (3) When using this code, reference should be made to Part 5.

Note - The Flood and storm tide hazards overlay maps contained in Schedule 2 identify areas (Flood and storm tide inundation areas) where flood and storm tide inundation modelling has been undertaken by the Council. Other areas not identified by the Flood and inundation hazards overlay maps contained in Schedule 2 may also be subject to the defined flood event or defined storm tide event.

8.2.4.2 Purpose

- (1) The purpose of the Flood and storm tide hazard overlay code is to:
 - (a) implement the policy direction in the Strategic Framework, in particular:
 - (i) Theme 1 Settlement pattern: Element 3.4.7 Mitigation of hazards;
 - (ii) Theme 6 Infrastructure and transport: Element 3.9.2 Energy.
 - (b) enable an assessment of whether development is suitable on land within the Flood and storm tide hazard sub-categories.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) development siting, layout and access responds to the risk of the natural hazard and minimises risk to personal safety;
 - (b) development achieves an acceptable or tolerable risk level, based on a fit for purpose risk assessment;
 - (c) the development is resilient to natural hazard events by ensuring siting and design accounts for the potential risks of natural hazards to property;



- (d) the development supports, and does not unduly burden disaster management response or recovery capacity and capabilities;
- (e) the development directly, indirectly and cumulatively avoids an unacceptable increase in severity of the natural hazards and does not significantly increase the potential for damage on site or to other properties;
- (f) the development avoids the release of hazardous materials as a result of a natural hazard event;
- (g) natural processes and the protective function of landforms and/or vegetation are maintained in natural hazard areas;
- (h) community infrastructure is located and designed to maintain the required level of functionality during and immediately after a hazard event.

Criteria for assessment

Table 8.2.4.3.a – Flood and storm tide hazards overlay code –assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
<p>PO1 Development is located and designed to: ensure the safety of all persons; minimise damage to the development and contents of buildings; provide suitable amenity; minimise disruption to residents, recovery time, and rebuilding or restoration costs after inundation events.</p> <p>Note – For assessable development within the flood plain assessment sub-category, a flood study by a suitably qualified professional is required to identify compliance with the intent of the acceptable outcome.</p>	<p>AO1.1 Development is sited on parts of the land that is not within the Flood and Storm tide hazards overlay maps contained in Schedule 2;</p> <p>or</p> <p>For dwelling houses,</p> <p>AO1.2 Development within the Flood and Storm Tide hazards overlay maps (excluding the Flood plain assessment sub-category) is designed to provide immunity to the Defined Inundation Event as outlined within Table 8.2.4.3.b plus a freeboard of 300mm.</p>	<p>Complies with PO1</p> <p>A detailed Flood Study was undertaken which considered the impacts for flood and storm tide hazards.</p> <p>The report concluded that the flood mapping showed that the proposed extent of the site was not impacted by flood waters for any of the modelled cases.</p> <p>The 2100 climate case had a small area of depth at the proposed entry to the underground parking. This was caused by the global initial water level being applied within the car park, this is not a concern in terms of the flooding for the site.</p> <p>Storm tide maps also indicated that storm tide flooding would not reach the site for the current and 2100 climate. An afflux</p>



Performance outcomes	Acceptable outcomes	Applicant response
		<p>map was created that compared the existing and developed case.</p> <p>The afflux map indicated no change, meaning that surrounding properties would not be adversely impacted by the development</p> <p>A copy of the report is provided at Attachment 8.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO1.3 New buildings are:</p> <ul style="list-style-type: none"> (a) not located within the overlay area; (b) located on the highest part of the site to minimise entrance of flood waters; (c) provided with clear and direct pedestrian and vehicle evacuation routes off the site. <p>AO1.4 In non urban areas, buildings and infrastructure are set back 50 metres from natural riparian corridors to maintain their natural function of reducing velocity of floodwaters.</p>	
For assessable development		
<p>PO2 The development is compatible with the level of risk associated with the natural hazard.</p>	<p>AO2 The following uses are not located in land inundated by the Defined Flood Event (DFE) / Storm tide:</p> <ul style="list-style-type: none"> (a) Retirement facility; (b) Community care facility; (c) Child care centre. 	<p>Complies with AO2.</p>
<p>PO3 Development siting and layout responds to flooding potential and maintains personal safety</p>	<p>For Material change of use</p> <p>AO3.1 New buildings are:</p> <ul style="list-style-type: none"> (a) not located within the overlay area; (b) located on the highest part of the site to minimise entrance of flood waters; (c) provided with clear and direct pedestrian and vehicle evacuation routes off the site. <p>or</p>	<p>Complies with PO3</p> <p>A detailed Flood Study was undertaken which considered the impacts for flood and storm tide hazards.</p> <p>The report concluded that the flood mapping showed that the proposed extent of the site was not impacted by flood waters for any of the modelled cases.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO3.2 The development incorporates an area on site that is at least 300mm above the highest known flood inundation level with sufficient space to accommodate the likely population of the development safely for a relatively short time until flash flooding subsides or people can be evacuated.</p> <p>or</p> <p>AO3.3 Where involving an extension to an existing dwelling house that is situated below DFE /Storm tide, the maximum size of the extension does not exceed 70m² gross floor area.</p> <p>Note – If part of the site is outside the Hazard Overlay area, this is the preferred location of all buildings.</p> <p>For Reconfiguring a lot</p> <p>AO3.4 Additional lots: (a) are not located in the hazard overlay area; or (b) are demonstrated to be above the flood level identified for the site.</p> <p>Note - If part of the site is outside the Hazard Overlay area, this is the preferred location for all lots (excluding park or other open space and recreation lots).</p> <p>Note – Buildings subsequently developed on the lots will need to comply with the relevant building assessment provisions under the <i>Building Act 1975</i>.</p>	<p>The 2100 climate case had a small area of depth at the proposed entry to the underground parking. This was caused by the global initial water level being applied within the car park, this is not a concern in terms of the flooding for the site.</p> <p>Storm tide maps also indicated that storm tide flooding would not reach the site for the current and 2100 climate. An afflux map was created that compared the existing and developed case.</p> <p>The afflux map indicated no change, meaning that surrounding properties would not be adversely impacted by the development</p> <p>A copy of the report is provided at Attachment 8.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO3.5 Road and/or pathway layout ensures residents are not physically isolated from adjacent flood free urban areas and provides a safe and clear evacuation route path:</p> <ul style="list-style-type: none"> (a) by locating entry points into the reconfiguration above the flood level and avoiding culs-de-sac or other non-permeable layouts; and (b) by direct and simple routes to main carriageways. <p>AO3.6 Signage is provided on site (regardless of whether the land is in public or private ownership) indicating the position and path of all safe evacuation routes off the site and if the site contains, or is within 100m of a floodable waterway, hazard warning signage and depth indicators are also provided at key hazard points, such as at floodway crossings or entrances to low-lying reserves.</p> <p>or</p> <p>AO3.7 There is no intensification of residential uses within the flood affected areas on land situated below the DFE/Storm tide.</p>	



Performance outcomes	Acceptable outcomes	Applicant response
	<p>For Material change of use (Residential uses) AO3.8 The design and layout of buildings used for residential purposes minimise risk from flooding by providing: (a) parking and other low intensive, non-habitable uses at ground level;</p> <p>Note - The high-set 'Queenslander' style house is a resilient low-density housing solution in floodplain areas. Higher density residential development should ensure only non-habitable rooms (e.g. garages, laundries) are located on the ground floor.</p>	
<p>PO4 Development is resilient to flood events by ensuring design and built form account for the potential risks of flooding.</p>	<p>For Material change of use (Non-residential uses) AO4.2 Non residential buildings and structures allow for the flow through of flood waters on the ground floor. Note - Businesses should ensure that they have the necessary contingency plans in place to account for the potential need to relocate property prior to a flood event (e.g. allow enough time to transfer stock to the upstairs level of a building or off site). Note - The relevant building assessment provisions under the <i>Building Act 1975</i> apply to all building work within the Hazard Area and need to take into account the flood potential within the area. AO4.3 Materials are stored on-site: (a) are those that are readily able to be moved in a flood event; (b) where capable of creating a safety hazard by being shifted by flood waters, are contained in order to minimise movement in times of flood.</p> <p>Notes - (a) Businesses should ensure that they have the necessary contingency plans in place to account for the potential need to relocate property prior to a flood event (e.g. allow enough time to transfer stock to the upstairs level of a building or off site).</p>	<p>Complies with PO4. See discussion above.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	(b) Queensland Government Fact Sheet 'Repairing your House after a Flood' provides information about water resilient products and building techniques.	
<p>P05 Development directly, indirectly and cumulatively avoids any increase in water flow velocity or flood level and does not increase the potential flood damage either on site or on other properties.</p> <p>Note – Berms and mounds are considered to be an undesirable built form outcome and are not supported.</p>	<p>For Operational works</p> <p>A05.1 Works in urban areas associated with the proposed development do not involve:</p> <ul style="list-style-type: none"> (a) any physical alteration to a watercourse or floodway including vegetation clearing; or (b) a net increase in filling (including berms and mounds). <p>A05.2 Works (including buildings and earthworks) in non urban areas either:</p> <ul style="list-style-type: none"> (a) do not involve a net increase in filling greater than 50m³; or (b) do not result in any reductions of on-site flood storage capacity and contain within the subject site any changes to depth/duration/velocity of flood waters; <p>or</p> <ul style="list-style-type: none"> (c) do not change flood characteristics outside the subject site in ways that result in: <ul style="list-style-type: none"> (i) loss of flood storage; (ii) loss of/changes to flow paths; (iii) acceleration or retardation of flows or any reduction in flood warning times elsewhere on the flood plain. 	<p>Not applicable. This is not an application for Operational Works.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>For Material change of use</p> <p>AO5.3 Where development is located in an area affected by DFE/Storm tide, a hydraulic and hydrology report, prepared by a suitably qualified professional, demonstrates that the development maintains the flood storage capacity on the subject site; and</p> <p>(a) does not increase the volume, velocity, concentration of flow path alignment of stormwater flow across sites upstream, downstream or in the general vicinity of the subject site; and</p> <p>(b) does not increase ponding on sites upstream, downstream or in the general vicinity of the subject site.</p> <p>For Material change of use and Reconfiguring a lot</p> <p>AO5.4 In non urban areas, buildings and infrastructure are set back 50 metres from natural riparian corridors to maintain their natural function of reducing velocity of floodwaters.</p> <p>Note – Fences and irrigation infrastructure (e.g. irrigation tape) in rural areas should be managed to minimise adverse the impacts that they may have on downstream properties in the event of a flood.</p>	
<p>PO6 Development avoids the release of hazardous materials into floodwaters.</p>	<p>For Material change of use</p> <p>AO6.1 Materials manufactured or stored on site are not hazardous or noxious, or comprise materials that may cause a detrimental effect on the environment if discharged in a flood event;</p>	<p>Complies with AO6.1</p> <p>There is no hazardous or noxious material use proposed as part of the development.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>or</p> <p>AO6.2 If a DFE level is adopted, structures used for the manufacture or storage of hazardous materials are:</p> <ul style="list-style-type: none"> (a) located above the DFE level; or (b) designed to prevent the intrusion of floodwaters. <p>AO6.3 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the DFE.</p> <p>AO6.4 If a flood level is not adopted, hazardous materials and their manufacturing equipment are located on the highest part of the site to enhance flood immunity and designed to prevent the intrusion of floodwaters.</p> <p><small>Note – Refer to <i>Work Health and Safety Act 2011</i> and associated Regulation and Guidelines, the <i>Environmental Protection Act 1994</i> and the relevant building assessment provisions under the <i>Building Act 1975</i> for requirements related to the manufacture and storage of hazardous materials.</small></p>	
<p>P07 The development supports, and does not unduly burden, disaster management response or recovery capacity and capabilities.</p>	<p>A07 Development does not:</p> <ul style="list-style-type: none"> (a) increase the number of people calculated to be at risk of flooding; (b) increase the number of people likely to need evacuation; (c) shorten flood warning times; and 	<p>Complies with A07.</p> <p>See discussion above. There is no identified risk of flooding or storm tide inundation.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	(d) impact on the ability of traffic to use evacuation routes, or unreasonably increase traffic volumes on evacuation routes.	
PO8 Development involving community infrastructure: (a) remains functional to serve community need during and immediately after a flood event; is designed, sited and operated to avoid adverse impacts on the community or environment due to impacts of flooding on infrastructure, facilities or access and egress routes; retains essential site access during a flood event; is able to remain functional even when other infrastructure or services may be compromised in a flood event.	AO8.1 The following uses are not located on land inundated during a DFE/Storm tide: (a) community residence; and (b) emergency services; and (c) residential care facility; and (d) utility installations involving water and sewerage treatment plants; and (e) storage of valuable records or items of historic or cultural significance (e.g. archives, museums, galleries, libraries). or AO8.2 The following uses are not located on land inundated during a 1% AEP flood event: (a) community and cultural facilities, including facilities where an education and care service under the Education and care Services National law (Queensland) is operated or child care service under the <i>Child Care Act 2002</i> is conducted, (b) community centres; (c) meeting halls; (d) galleries; (e) libraries.	Complies with AO8.1, 8.4 and 8.5 See discussion above. There is no identified risk of flooding or storm tide inundation and no uses listed in AO8.1 are proposed.



Performance outcomes	Acceptable outcomes	Applicant response
	<p>The following uses are not located on land inundated during a 0.5% AEP flood event.</p> <ul style="list-style-type: none"> (a) emergency shelters; (b) police facilities; (c) sub stations; (d) water treatment plant <p>The following uses are not located on land inundated during a 0.2% AEP flood event:</p> <ul style="list-style-type: none"> (a) correctional facilities; (b) emergency services; (c) power stations; (d) major switch yards. <p>and/or</p> <p>AO8.3 The following uses have direct access to low hazard evacuation routes as defined in</p> <p>Table 8.2.4.3.c :</p> <ul style="list-style-type: none"> (a) community residence; and (b) emergency services; and (c) hospitals; and (d) residential care facility; and (e) sub stations; and (f) utility installations involving water and sewerage treatment plants. <p>AO8.4 Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood, such as electrical switch gear and</p>	



Performance outcomes	Acceptable outcomes	Applicant response
	<p>motors, telecommunications connections, or water supply pipeline air valves are:</p> <p>(a) located above DFE/Storm tide or the highest known flood level for the site;</p> <p>(b) designed and constructed to exclude floodwater intrusion / infiltration.</p> <p>AO8.5 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by a flood.</p>	

Table 8.2.4.3.b - Minimum immunity (floor levels) for development

Minimum immunity to be achieved (floor levels)	Uses and elements of activities acceptable in the event
20% AEP level	<ul style="list-style-type: none"> • Parks and open space.
5% AEP level	<ul style="list-style-type: none"> • Car parking facilities (including car parking associated with use of land).
1% AEP level	<ul style="list-style-type: none"> • All development (where not otherwise requiring an alternative level of minimum immunity).
0.5% AEP level	<ul style="list-style-type: none"> • Emergency services (if for a police station); • Industry activities (if including components which store, treat or use hazardous materials); • Substation; • Utility installation.
0.2% AEP level	<ul style="list-style-type: none"> • Emergency services; • Hospital; • Major electricity infrastructure; • Special industry.

Table 8.2.4.3.c - Degree of flood

Criteria	Low	Medium	High	Extreme
Wading ability	If necessary children and the elderly could wade. (Generally, safe wading velocity depth product is less than 0.25)	Fit adults can wade. (Generally, safe wading velocity depth product is less than 0.4)	Fit adults would have difficulty wading. (Generally, safe wading velocity depth product is less than 0.6)	Wading is not an option.
Evacuation distances	< 200 metres	200-400 metres	400-600 metres	600 metres
Maximum flood depths	< 0.3 metre	< 0.6 metre	< 1.2 metres	1.2 metres
Maximum flood velocity	< 0.4 metres per second	< 0.8 metres per second	< 1.5 metres per second	1.5 metres per second
Typical means of egress	Sedan	Sedan early, but 4WD or trucks later	4WD or trucks only in early stages, boats or helicopters	Large trucks, boats or helicopters
Timing Note: This category cannot be implemented until evacuation times have been established in the Counter Disaster Plan (Flooding)	Ample flood forecasting. Warning and evacuation routes remain passable for twice as long as evacuation time.	Evacuation routes remain trafficable for 1.5 times as long as the evacuation.	Evacuation routes remain trafficable for only up to minimum evacuation time.	There is insufficient evacuation time.

Note: The evacuation times for various facilities or areas would (but not necessarily) be included in the Counter Disaster Plan.
Generally safe wading conditions assume even walking surfaces and no obstructions, steps, soft underfoot etc.

8.2.6 Landscape values overlay code

8.2.6.1 Application

- (1) This code applies to assessing a material change of use, reconfiguring a lot, operational work or building work within the Landscape values overlay, if:
 - (a) self-assessable or assessable development where the code is identified as being applicable in the Assessment criteria for the Overlay Codes contained in the Levels of Assessment Tables in section 5.6;
 - (b) impact assessable development.
- (2) Land in the Landscape values overlay is identified on the Landscape values overlay map in Schedule 2 and includes in following sub-categories:
 - (a) High landscape value sub-category;
 - (b) Medium landscape value sub-category;
 - (c) Scenic route buffer / view corridor area sub-category;
 - (d) Coastal scenery area sub-category.
- (3) When using this code, reference should be made to Part 5.

8.2.6.2 Purpose

- (1) The purpose of the Landscape values overlay code is to:
 - (a) implement the policy direction of the Strategic Framework, in particular:
 - (i) Theme 2: Environment and landscape values Element 3.5.5 Scenic amenity;
 - (ii) Theme 3: Natural resource management Element 3.6.4 – Resource extraction.
 - (b) enable an assessment of whether development is suitable on land within the Landscape values overlay sub-categories.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) areas of High landscape value are protected, retained and enhanced;
 - (b) areas of Medium landscape value are managed to integrate and limit the visual impact of development;
 - (c) the landscape values of the Coastal scenery area are managed to integrate and limit the visual impact of development;
 - (d) development maintains and enhances the significant landscape elements and features which contribute to the distinctive character and identity of Douglas Shire;
 - (e) ridges and vegetated hillslopes are not developed in a way that adversely impacts on landscape values;

- (f) watercourses, forested mountains and coastal landscape character types remain predominantly natural in appearance in order to maintain the region's diverse character and distinctive tropical image, in particular:
 - (i) areas in the coastal landscape character type which are predominantly natural and undeveloped in appearance retain this natural landscape character;
 - (ii) watercourses which are predominantly natural and undeveloped in appearance retain this natural landscape character;
 - (iii) the rural character of cane fields and lowlands landscape character types which are predominantly rural or natural in appearance are maintained;
 - (iv) landscape values are maintained when viewed from lookouts, scenic routes, gateways and public places.
- (g) views towards High landscape value areas and the Coral Sea are not diminished;
- (h) development is consistent with the prevailing landscape character of its setting, and is neither visually dominant nor visually intrusive;
- (i) advertising devices do not detract from the landscape values, character types or amenity of an area.

Criteria for assessment

Table 8.2.6.3.z – Landscape values overlay code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For assessable development		
Development in a High landscape value area		
PO1 Development within High landscape value areas identified on the Landscape values overlay maps contained in Schedule 2: <ul style="list-style-type: none"> (a) avoids detrimental impacts on the landscape values of forested skylines, visible hillslopes, ridgelines, the coastal foreshore or the shoreline of other water bodies through the loss of vegetation; (b) is effectively screened from view from a road, lookout or other public place by an existing natural landform or native vegetation, or will be effectively screened by native vegetation within 3 years of construction; 	AO1.1 Buildings and structures are not more than 8.5 metres and two storeys in height. Note - Height is inclusive of roof height. AO1.2 Buildings and structures are setback not less than 50 metres from ridgelines or peaks. AO1.3 Development is screened from view from roads or other public places by an existing natural landform or an existing native vegetation buffer.	Not applicable.



Performance outcomes	Acceptable outcomes	Applicant response
<p>(c) retains existing vegetation and incorporates new landscaping to enhance existing vegetation and visually soften built form elements;</p> <p>(d) incorporates development of a scale, design, height, position on site, construction materials and external finishes that are compatible with the landscape values of the locality;</p> <p>(e) avoids detrimental impacts on landscape values and excessive changes to the natural landform as a result of the location, position on site, scale, design, extent and alignment of earthworks, roads, driveways, retaining walls and other on-ground or in-ground infrastructure;</p> <p>(f) avoids detrimental impacts on landscape values and views as a result of the location, position on site, scale, design and alignment of telecommunications facilities, electricity towers, poles and lines and other tall infrastructure;</p> <p>(g) extractive industry operations are avoided.</p> <p>Note - A visual impact assessment is undertaken in accordance with Planning scheme policy SC6.6 – Landscape values in order to satisfy performance outcomes.</p>	<p>AO1.4 Where development on land steeper than 1 in 6 (16.6%) cannot be avoided: (a) development follows the natural; contours of the site; buildings are split level or suspended floor construction, or a combination of the two; lightweight materials are used to areas with suspended floors.</p> <p>Note - Examples of suitable lightweight materials include timber or fibre cement boards or sheeting for walls and factory treated metal sheeting for walls and roofs.</p> <p>AO1.5 The external features, walls and roofs of buildings and structures have a subdued and non-reflective palette.</p> <p>Note - Examples of suitable colours include shades of green, olive green, blue green, grey green, green blue, indigo, brown, blue grey, and green yellow.</p> <p>AO1.6 No clearing of native vegetation occurs on land with a slope greater than 1 in 6 (16.5%).</p> <p>AO1.7 Where for accommodation activities or reconfiguration of a lot in a High landscape value area, development demonstrates that the height, design, scale, positioning on-site, proposed construction materials and external finishes are compatible with the landscape values.</p> <p>Note - A visual impact assessment undertaken in accordance with Planning scheme policy SC6.6 – Landscape values may be required.</p>	



Performance outcomes	Acceptable outcomes	Applicant response
	AO1.8 Advertising devices do not occur.	
Development within the Medium landscape value area		
P02 Development within Medium landscape value areas identified on the Landscape values overlay maps contained in Schedule 2: (a) avoids detrimental impacts on the landscape values of forested skylines, visible hillslopes, ridgelines, the coastal foreshore or the shoreline of other water bodies through the loss of vegetation; (b) is effectively screened from view from a road, lookout or other public place by an existing natural landform or native vegetation, or will be effectively screened by native vegetation within 5 years of construction; (c) retains existing vegetation and incorporates new landscaping to enhance existing vegetation and visually soften built form elements; (d) incorporates development of a scale, design, height, position on site, construction materials and external finishes that are compatible with the landscape values of the locality; (e) avoids detrimental impacts on landscape values and excessive changes to the natural landform as a result of the location, position on site, scale, design and alignment of earthworks, roads, driveways, retaining walls and other on-ground or in-ground infrastructure;	AO2.1 Buildings and structures are not more than 8.5 metres and two storeys in height. Note - Height is inclusive of the roof height. AO2.2 Development is screened from view from roads or other public places by an existing natural landform or an existing native vegetation buffer. AO2.3 Where development on land steeper than 1 in 6 (16.6%) cannot be avoided: (a) development follows the natural; contours of the site; (b) buildings are split level or suspended floor construction, or a combination of the two; (c) lightweight materials are used to areas with suspended floors. Note - Examples of suitable lightweight materials include timber or fibre cement boards or sheeting for walls and factory treated metal sheeting for walls and roofs. AO2.4 The external features, walls and roofs of buildings and structures have a subdued and non-reflective palette. Note - Examples of suitable colours include shades of green, olive green, blue green, grey green, green blue, indigo, brown, blue grey, and green yellow.	Not applicable.



Performance outcomes	Acceptable outcomes	Applicant response
<p>(f) avoids detrimental impacts on landscape values and views as a result of the location, position on site, scale, design and alignment of telecommunications facilities, electricity towers, poles and lines and other tall infrastructure;</p> <p>(g) extractive industry operations are avoided, or where they cannot be avoided, are screened from view.</p> <p>Note - A visual impact assessment is undertaken in accordance with Planning scheme policy SC6.6 – Landscape values in order to satisfy performance outcomes.</p>	<p>AO2.5 No clearing of native vegetation occurs on land with a slope greater than 1 in 6 (16.6%).</p> <p>AO2.6 Advertising devices do not occur.</p>	
Development within a Scenic route buffer / view corridor area		
<p>PO3 Development within a Scenic route buffer / view corridor area as identified on the Landscape values overlay maps contained in Schedule 2:</p> <p>(a) retains visual access to views of the surrounding landscape, the sea and other water bodies;</p> <p>(b) retains existing vegetation and incorporates landscaping to visually screen and soften built form elements whilst not impeding distant views or view corridors;</p> <p>(c) incorporates building materials and external finishes that are compatible with the visual amenity and the landscape character;</p> <p>(d) minimises visual impacts on the setting and views in terms of:</p> <p>(e) the scale, height and setback of buildings;</p> <p>(f) the extent of earthworks and impacts on the landform including the location and configuration of access roads and driveways;</p>	<p>AO3.1 Where within a Scenic route buffer / view corridor area, the height of buildings and structures is not more than identified within the acceptable outcomes of the applicable zone code.</p> <p>AO3.2 No clearing of native vegetation is undertaken within a Scenic route buffer area.</p> <p>AO3.3 Where within a Scenic route buffer / view corridor area development is set back and screened from view from a scenic route by existing native vegetation with a width of at least 10 metres and landscaped in accordance with the requirements of the landscaping code.</p> <p>AO3.4 Development does not result in the replacement of, or creation of new, additional, or enlarged advertising devices.</p>	<p>Complies with PO3</p> <p>The lot is within the scenic route buffer for the entry to Port Douglas along Port Douglas Road/ Davidson Street.</p> <p>The features of this scenic route is dense tropical landscaping and appropriate height and setbacks for development.</p> <p>The proposed development necessitates the removal of some onsite vegetation for yield and constructability but it is replaced by expertly designed, dense tropical landscaping particularly to the Davidson Street frontage.</p> <p>The buildings are finished in high quality natural materials which integrate into the surrounding vegetation.</p>



Performance outcomes	Acceptable outcomes	Applicant response
<p>(g) the scale, extent and visual prominence of advertising devices.</p> <p>Note - A visual impact assessment is undertaken in accordance with Planning scheme policy SC6.6 – Landscape values in order to satisfy performance outcomes.</p>		<p>The scale, height and setback of the buildings is in keeping with the Acceptable Outcomes of the relevant zone code.</p> <p>The proposed development will deliver a superior result in terms of scenic amenity when compared to the current on site development.</p> <p>It is a critical feature of this Luxury Resort Complex and Short Term Accommodation / Multiple Dwelling Villas.</p>
Development within the Coastal scenery area		
<p>PO4 The landscape values of the Coastal scenery zone as identified on the Landscape values overlay maps contained in Schedule 2 are managed to integrated and limit the visual impact of development.</p> <p>Note - A visual impact assessment is undertaken in accordance with Planning scheme policy SC6.6 – Landscape values in order to satisfy performance outcomes.</p>	<p>AO4.1 The dominance of the natural character of the coast is maintained or enhanced when viewed from the foreshore.</p> <p>AO4.2 Where located adjacent to the foreshore buildings and structures are setback:</p> <p>(a) Where no adjoining development, a minimum of 50 metres from the coastal high water mark and the setback area is landscaped with a native vegetation buffer that has a minimum width of 25 metres; or</p> <p>(b) Where there is adjoining development, setbacks will be consistent with that of adjoining buildings and structures, but not less than 10 metres from the coastal high water mark. The setback area is landscaped in accordance with the requirements of the Landscaping code.</p>	<p>Not applicable.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO4.3 Where separated from the foreshore by land contained within public ownership (e.g. unallocated State land, esplanade or other public open space), buildings and structures area setback:</p> <p>(a) where no adjoining development, a minimum of 6 metres from the coastward property boundary. The setback area is landscaped in accordance with the requirements of the Landscaping code; or</p> <p>(b) where there is adjoining development, setbacks will be consistent with that of adjoining buildings and structures. The setback area is landscaped in accordance with the requirements of the Landscaping code.</p>	
<p>PO5 Development is to maximise opportunities to maintain and/or enhance natural landscape values through the maintenance and restoration of vegetated buffers between development and coastal waters, where practical.</p> <p>Note – A visual impact assessment is undertaken in accordance with Planning scheme policy SC6.6 – Landscape values in satisfaction of a performance outcome.</p>	<p>AO5 No clearing of native vegetation is undertaken within a Coastal scenery area zone, except for exempt vegetation damage undertaken in accordance with the Vegetation management code</p>	<p>Not applicable.</p>

7.2.4 Port Douglas/Craiglie local plan code

7.2.4.1 Application

- (1) This code applies to assessing development within the Port Douglas/Craiglie local plan area as identified on the Port Douglas/Craiglie local plan maps contained in Schedule 2.
- (2) When using this code, reference should be made to Part 5.

6.2.5.2 Context and setting

Editor's note - This section is extrinsic material under section 15 of the *Statutory Instruments Act 1992* and is intended to assist in the interpretation of the Port Douglas/Craiglie local plan code.

The Port Douglas/Craiglie local plan encompasses the traditional Port Douglas town centre and surrounding tourist and residential areas, including Four Mile Beach and Craiglie.

Port Douglas was officially named in 1877. It was initially settled as the port of entry and supply for the Hodgkinson goldfield on the Hann Tableland which was proclaimed in 1876. It was the dominant port in Far North Queensland until a decision was made to establish Cairns as the terminus for a new railway in 1884. This ended the town's dominance, and it gradually became a small centre for local residents and fishing activities. During the 1970s and 1980s, a renewed interest in Far North Queensland as a holiday destination led to a boom in large scale tourism and residential development with Port Douglas re-emerging as a premium destination.

The Captain Cook Highway runs north-south to the west of Port Douglas through Craiglie (Four Mile). Craiglie caters for the permanent resident population associated with Port Douglas, as well as providing for service industries to support business in the town. The majority of urban development is confined to the eastern side of the highway. The main entrance to Port Douglas at the intersection of Port Douglas Road is accentuated by mature oil palms lining both sides of the street for almost the entire length of the corridor into the heart of Port Douglas.

Flagstaff Hill is a prominent headland on the northern side of the Port Douglas town centre providing a green tropical backdrop to the town. Island Point Road runs to the top of Flagstaff Hill and provides access to the iconic lookout overlooking the sweep of Four Mile Beach.

Macrossan Street is the main shopping area in Port Douglas running in a general east-west direction at the base of Flagstaff Hill connecting Four Mile Beach to Dickson Inlet. Tourist and commercial development is concentrated towards the western side of Macrossan Street, with marine orientated activity focussed around the inlet. The western side of the inlet provides unspoiled views across mangroves to the distinctive formations and features of the coastal range.

The street pattern in the town centre is based on the original grid pattern survey of 1878. While the town has lost many of its original buildings to cyclones and redevelopment, a number of important built features remain including the Central Hotel, the Court House Hotel, a number of relocated buildings such as St Mary's Church, the former Clink Theatre and the Court House Museum and scattered memorials such as the Carstens memorial in Macrossan Street

and the Port Douglas War memorial in Wharf Street. The Sugar Wharf on Dickson Inlet was the original terminus of the tramline to Mossman. The tramline now terminates adjacent to the Port Douglas marina and operates as the Balley Hooley passenger service on four kilometres of track between the Port Douglas Marina and St Crispins Station.

A particular characteristic of the local plan area is its high quality, lush landscaping complementing the tropical resort town atmosphere. This theme will be carried throughout the local plan area with gateways, nodes and corridor planting emphasising the role of the town as a tropical tourist destination.

7.2.4.3 Purpose

- (1) The purpose of the Port Douglas/Craigie local plan code is to facilitate development outcomes consistent with community values, the local tropical built-form and protection of the natural environment within the Port Douglas/Craigie local plan area, while providing a platform for investment and prosperity.
 - (a) In addition, the purpose of the code is supported by the Port Douglas Waterfront Master Plan which provides a clear strategic direction for the incremental transformation of the Port Douglas Waterfront, including the following objectives:
 - (b) To set out a vision for revitalisation of the waterfront;
 - (c) To protect and enhance the environmental attributes; and
- (2) To provide a flexible framework, expressed through several key strategies that will assist the Council and community in managing change.
- (3) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Port Douglas will continue to develop as the premium destination for international and domestic tourists in the Far North Queensland Region, while also acting for permanent residents attracted to the associated lifestyle.
 - (b) Major tourist, retail, dining and entertainment facilities will consolidate in the Town Centre and the Waterfront North sub-precincts, with improved pedestrian connections between the town centre and the waterfront.
 - (c) Craigie will develop as an integrated residential community with some low scale tourism development opportunities in appropriate locations. Craigie will also function as small scale commercial and light industry node, providing employment opportunities for the Shire's permanent resident population.
 - (d) All forms of development will complement the tropical image of the town through distinctive tropical vernacular, urban design and landscaping.
 - (e) Character will be enhanced through the identification of gateway sites, landmarks, main approach routes and pedestrian thoroughfares and view corridors;
 - (f) The Flagstaff Hill, Dickson Inlet, Four Mile Beach and other areas of scenic and environmental significance will be protected from development. Vegetation cover will dominate over built form.

- (g) Vegetation, iconic to the character of Port Douglas, including the avenues of Oil Palms, is retained and where appropriate supplemented.
 - (h) Development will be indistinguishable from view from Four Mile Beach. In addition, any development on Flagstaff Hill will be indistinguishable when viewed from vantage points in Port Douglas.
 - (i) Residential areas are designed as pleasant, functional and distinctive, in visually well-defined areas.
- (4) The purpose of the code will be further achieved through the following overall outcomes:
- (a) Precinct 1 – Port Douglas precinct
 - (i) Sub-precinct 1a – Town Centre sub-precinct
 - (ii) Sub-precinct 1b – Waterfront North sub-precinct
 - (iii) Sub-precinct 1c – Waterfront South sub-precinct
 - (iv) Sub-precinct 1d – Limited Development sub-precinct
 - (v) Sub-precinct 1e – Community and recreation sub-precinct
 - (vi) Sub-precinct 1f – Flagstaff Hill sub-precinct
 - (b) Precinct 2 – Integrated Resort precinct
 - (c) Precinct 3 – Craiglie Commercial and Light Industry precinct
 - (d) Precinct 4 – Old Port Road / Mitre Street precinct
 - (e) Precinct 5 – Very Low Density Residential/ Low Scale Recreation/Low Scale Educational/Low Scale Entertainment Uses precinct

Precinct 1 – Port Douglas precinct

- (5) In addition to the overall outcomes, the outcomes sought for the precinct are to ensure that:
- (a) development will contribute to the incremental transformation of the township, preserving and enhancing maritime activities and environmental areas, delivering tropical open spaces and a high quality public realm, and allowing for tourism opportunities and investment.
 - (b) development contributes to the enhancement of the Port Douglas precinct through the following development outcomes:
 - (i) access and connectivity throughout the township is enhanced through a series of improvements to circulation and mobility, including:
 - (A) access to, and connectivity along, the waterfront and foreshore areas is maintained and, where appropriate, enhanced;
 - (B) reducing reliance on the waterfront as a car parking resource.
 - (ii) the use of land in the Port Douglas precinct improves the cohesive layout of the township through:
 - (A) the establishment of distinct sub-precincts that reinforce the character and built form of the Port Douglas local plan area including:

- Port Douglas centre sub-precinct 1a – Town Centre sub-precinct;
 - Port Douglas centre sub-precinct 1b – Waterfront North sub-precinct;
 - Port Douglas centre sub-precinct 1c – Waterfront South sub-precinct;
 - Port Douglas centre sub-precinct 1d – Limited development sub-precinct;
 - Port Douglas centre sub-precinct 1e – Community and recreation precinct;
 - Port Douglas centre sub-precinct 1f – Flagstaff Hill sub-precinct;
- (B) facilitating marina facilities and supporting marine industry uses as a key part of the local economy;
- (C) reducing conflict between industry, community and commercial activities in the waterfront, without diminishing the marine industry capacity in the Port Douglas precinct;
- (iii) environment and sustainability is integrated into the township through:
- (A) preservation and enhancement of the qualities and characteristics of environmental areas of the township;
- (B) water sensitive urban design is considered as a means of water quality improvement and management of overland flow to ensure hard infrastructure solutions in Warner Street can be mitigated;
- (C) design of buildings and access way improvements prioritises walking and cycling modes of transport.
- (iv) the tropical character of the Port Douglas precinct is enhanced by ensuring development:
- (A) maintains and enhances the built form, local character, streetscapes and natural elements of the township;
- (B) is compatible with the desired character and amenity of local places and neighbourhoods;
- (C) does not exceed the height of buildings designations which contribute to the desired form of the township which contains three storey development heights in sub-precinct 1a – Town Centre sub-precinct and part of sub-precinct 1b – Waterfront North sub-precinct;
- (D) implements high quality landscaped environments around buildings and on streets;
- (E) protects the recognisable character and locally significance sites throughout the precinct.
- (v) public spaces and the streetscape are enhanced through:
- (A) an increase in the quantity and quality of public land and places throughout the precinct;
- (B) consolidating community recreation and sporting uses to create a precinct of community focussed activity between Mudlo Street and Wharf Street;
- (C) improved connections between the town centre and the waterfront marina, including an investigation of a plaza on the waterfront;

- (D) improved streetscapes with high quality landscaping, surface treatments and shaded pedestrian environments;
 - (E) the creation of a sense of place through aesthetic streetscapes and built-form character;
 - (F) managing vegetation to ensure succession of planting and the ongoing presence of significant trees.
- (vi) advertising signage is small scale, low-key and complements the tropical character of the town.

Sub-precinct 1a – Town Centre sub-precinct

- (6) In addition to other overall development outcomes, development in the Town Centre sub-precinct facilitates the following development outcomes:
- (a) tourist, retail, dining and entertainment activities are facilitated at an appropriate pedestrian scale;
 - (b) drive-through developments, bulky goods showrooms, outdoor sales, saleyards and other big-box retailing or entertainment facilities are not established;
 - (c) development contributes to a high quality public realm;
 - (d) parking (and associated infrastructure) does not undermine the relationship between buildings and street or pedestrian circulation patterns;
 - (e) consolidation of community and cultural land use activities along Mowbray Street between Wharf Street and Mudlo Street;
 - (f) active street frontages are established along Macrossan and Wharf Streets and other nearby streets as shown on the Port Douglas Centre Active Frontages and Pedestrian and Cycle Network Plan;
 - (g) Live entertainment activities are concentrated within the Live Entertainment Precinct and are subject to the recommendations of a suitably qualified acoustic engineer.

Sub-precinct 1b - Waterfront North sub-precinct

- (7) In addition to other overall development outcomes, development in the Waterfront North sub-precinct facilitates the following development outcomes:
- (a) the precinct evolves as a revitalised open space and waterside development precinct;
 - (b) development within the precinct is designed to be sympathetic to the environmentally sensitive Dickson Inlet and mitigates any adverse impacts;
 - (c) the establishment of mixed-use development is facilitated to promote activity and vitality;
 - (d) public pedestrian access is maximised along the extent of the edge of the waterfront, consisting of a boardwalk or similar structure available for 24-hour use;
 - (e) development contributes to a high quality public realm;
 - (f) built form provides an attractive point of arrival from both land and sea;
 - (g) pedestrian connectivity is safe, efficient and provides for the needs of all users of the Port Douglas waterfront;

- (h) parking (and associated infrastructure) does not undermine the relationship between buildings and street or pedestrian circulation patterns;
- (i) the importance of existing marine-based industries to the area is recognised, not diminished and protected from incompatible uses. Relocation of marine based industries to an alternative precinct does not occur until such time that agreement has been reached among all relevant stakeholders such that development does not diminish the viability of marine based industrial uses that directly serve the Port Douglas tourist and fishing operators and private boat owners;
- (j) marine infrastructure is established to service the tourism, fishing and private boating community;
- (k) Live entertainment activities are concentrated within the Live Entertainment Precinct and are subject to the recommendations of a suitably qualified acoustic engineer;

T (l) the functionality of the Balley Hooley tourist rail is retained.

Sub-precinct 1c – Waterfront South sub-precinct

- (8) In addition to all other overall development outcomes, development in the Waterfront South sub-precinct facilitates the following development outcomes:
 - (a) any use of land in the precinct does not affect the environmental, habitat, conservation or scenic values of Dickson Inlet and surrounding land;
 - (b) marine-based industries are established on appropriate land having regard to site suitability, accessibility, surrounding land uses, and location of utilities and services;
 - (c) marine-based industry achieves appropriate environmental standards;
 - (d) industrial buildings have a high standard of layout and building design;
 - (e) landscaping provides an attractive streetscape and screens utility, storage and car parking from the street and other public areas;
 - (f) the precinct is protected from encroachment of incompatible land use activities.

Sub-precinct 1d – Limited Development sub-precinct

- (9) In addition to all other overall development outcomes, development in the Limited Development sub-precinct facilitates the following development outcomes:
 - (a) any use of land in the precinct does not affect the environmental, habitat, conservation or scenic values of Dickson Inlet and surrounding land;
 - (b) the open nature and character of the precinct is retained maintaining view lines across the inlet;
 - (c) community and recreation land use activities are established that promote public access to the foreshore.

Sub-precinct 1e – Community and recreation sub-precinct

- (10) In addition to all other overall development outcomes, development in the Community and recreation sub-precinct facilitates the following development outcomes:
- (a) development for community uses, including sport and recreation is facilitated.
 - (b) sport and recreation activities predominantly involve outdoor activities;
 - (c) areas of natural vegetation are protected from further development;
 - (d) shade trees are increased, in appropriate locations, surrounding the sports fields.

Sub-precinct 1f – Flagstaff Hill sub-precinct

- (11) In addition to all other overall development outcomes, development in the Flagstaff Hill sub-precinct facilitates the following development outcomes:
- (a) development is not established where it results in detriment to the vegetated and scenic qualities of Flagstaff Hill;
 - (b) development minimises excavation and filling;
 - (c) buildings and other works are unobtrusive when viewed from vantage points in Port Douglas and are designed and constructed of colours and materials which complement the hill's vegetated state;
 - (d) views from public viewing points within the precinct are protected.

Precinct 2 – Integrated Resort precinct

- (12) In addition to the overall outcomes, development in the Integrated Resort precinct facilitates development in accordance with the *Integrated Development Resort Act, 1987*.

Editor's note – The development of land within this precinct is subject to the Integrated Development Resort Act 1987 (IDRA). Where a conflict exists between this planning scheme and the IDRA, the IDRA prevails.

Precinct 3 – Craiglie Commercial and Light Industry precinct

- (13) In addition to the overall outcomes, development in the Craiglie Commercial and Light Industry precinct facilitates the following overall outcomes:
- (a) development supports the tourism and marine industries in Port Douglas, along with the small-scale commercial and light industry land uses that support the local economy that would otherwise be better suited to a location outside the Port Douglas Centre Precinct unless they pose a safety issue;
 - (b) development adjacent to the Captain Cook Highway presents an attractive appearance to the highway. The rain-trees, melaleucas and eucalypt trees along the Captain Cook Highway are retained where possible, taking into account the Department of Transport and main Road's requirements;

- (c) retailing activities are generally restricted to those which are ancillary and necessarily associated with the primary service and light industry nature of the area;
- (d) adjacent residential areas are protected from industry nuisances;
- (e) lots fronting Downing Street, between Dickson Street and Beor Street, are provided with an appropriate standard of road access and infrastructure, prior to development occurring.

Precinct 4 – Old Port Road / Mitre Street precinct

- (14) In addition to the overall outcomes, development in the Old Port Road / Mitre Street precinct facilitates the following overall outcomes:
- (a) the precinct is intended to be used for outdoor recreational land use activity, primarily as a golf course;
 - (b) areas of significant vegetation are protected from development and retained;
 - (c) other forms of development will only be considered if substantial areas of open space are retained adjacent to existing residential areas to maintain the existing residential amenity of open views across open space.

Precinct 5 – Very Low Density Residential/Low Scale Recreation/Low Scale Educational/Low Scale Entertainment Uses precinct

- (15) In addition to the overall outcomes, development in the Very Low Residential Density/Low Scale Recreation/Low Scale Educational/Low Scale Entertainment Uses precinct facilitates the following overall outcomes:
- (a) residential accommodation does not exceed a maximum of 8.5 metres in building height;
 - (b) minimum lot sizes exceed 2 hectares;
 - (c) very low scale and intensity recreation/ very low scale and intensity educational/ and very low scale entertainment uses may be appropriate in areas of the precinct subject to erosion and other flooding constraints.

Note - Undeveloped lots in this precinct are located on very low-lying land. Council may consider a consolidation of existing land titles via lot reconfiguration to lot sizes less than 2 hectares, where the reconfigured lots are consolidated onto the highest terrain, to avoid a pattern of development consisting of dwelling houses located on isolated islands of raised building pads.

Criteria for assessment**Table 7.2.4.4.a –Port Douglas / Craiglie local plan – assessable development**

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
Development in the Port Douglas / Craiglie local plan area generally		
PO1 Pedestrians, cyclists, motorists and public transport users can easily move into and through the precinct along planned connectivity routes, identified on the Port Douglas / Craiglie local plan maps contained in Schedule 2.	AO1 A pedestrian and cycle movement network is integrated and delivered through development.	Complies with AO1. The internal pedestrian and cycle movements throughout the site are well integrated and demonstrated. The site is connected via existing networks from Davidson Street.
PO2 Development retains and enhances key landscape elements including character trees and areas of significant vegetation contributing to the character and quality of the local plan area and significant views and vistas and other landmarks important to the context of Port Douglas / Craiglie (as identified on the Port Douglas/ Craiglie Townscape Plan map contained in Schedule 2).	AO2.1 Development provides for the retention and enhancement of existing mature trees and character vegetation that contribute to the lush tropical character of the town, including: (a) the tree covered backdrop of Flagstaff Hill; (b) natural vegetation along watercourses, in particular the Mowbray River, Beor Creek and Dickson Inlet; (c) the tidal vegetation along the foreshore; (d) beachfront vegetation along Four Mile Beach, including the fringe of Coconut Palms; (e) the oil palm avenues along the major roads; (f) the lush landscaping within major roundabouts at key nodes; (g) Macrossan Street and Warner Street; (h) Port Douglas waterfront.	Complies with PO2. Although the site does not impact significant views and vistas, it still seeks to retain and enhance key landscape features in this location. The proposed landscaping plan provided at Attachment 3 and landscaping architectural features contribute to the character and quality of the local plan area. This is critical to the luxury brand of the product.



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO2.2 Development protects and does not intrude into important views and vistas as identified on the Port Douglas Townscape Plan map contained in Schedule 2, in particular:</p> <ul style="list-style-type: none"> (a) Flagstaff Hill; (b) Four Mile Beach; (c) Across to the ranges over Dickson Inlet; (d) Mowbray Valley. <p>AO2.3 Important landmarks, memorials and monuments are retained.</p>	
<p>PO3 Development contributes to the protection, reinforcement and where necessary enhancement of gateways and key intersections identified on the Port Douglas / Craiglie local plan maps contained in Schedule 2.</p>	<p>AO3 Development adjacent to the gateways and nodes as identified on the Port Douglas / Craiglie local plan maps contained in Schedule 2 incorporates architectural features and landscaping treatments and design elements that enhance the sense of arrival and way finding within the town.</p>	<p>Not applicable.</p>
<p>PO4 Landscaping of development sites complements the existing tropical character of Port Douglas and Craiglie.</p>	<p>AO4 Landscaping incorporates the requirements of Planning scheme policy SC6.7 – Landscaping, in particular landscaping should be capable of achieving a 60% screening of development within 5 years and predominantly consists of endemic vegetation.</p>	<p>Complies with PO4</p> <p>The proposed landscaping plan provided at Attachment 3 and landscaping architectural features contribute and enhance the existing tropical character of Port Douglas and Craiglie.</p> <p>This is critical to the luxury brand of the product.</p>
<p>PO5 Development does not compromise the safety and efficiency of the State-controlled road network.</p>	<p>AO5 Direct access is not provided to a State-controlled road where legal and practical access from another road is available.</p>	<p>Complies with PO5.</p> <p>This is addressed in the Traffic Impact Assessment provided at Attachment 6 and</p>

Performance outcomes	Acceptable outcomes	Applicant response
		<p>in more detail in the Traffic Network Overlay Code and State SDAP assessment.</p> <p>Legal and practical access exists from a State controlled road and will be retained. Servicing is provided from the local road network.</p>



Performance outcomes	Acceptable outcomes	Applicant response
For assessable development		
Additional requirements in Precinct 1 – Port Douglas precinct		
PO6 The views and vistas identified on the Port Douglas / Craiglie local plan maps contained in Schedule 2 are maintained.	AO6.1 Development does not impede continued views to scenic vistas and key streetscapes within the local plan area. AO6.2 Unless otherwise specified within this Local Plan, buildings are set back not less than 6 metres from the primary street frontage.	Not Applicable
PO7 Vehicle access, parking and service areas: (a) do not undermine the relationship between buildings and street or dominate the streetscape; (b) are designed to minimise pedestrian vehicle conflict; (c) are clearly identified and maintain ease of access at all times.	AO7.1 For all buildings, parking is: (a) to the side of buildings and recessed behind the main building line; or (b) behind buildings; or (c) wrapped by the building façade, and not visible from the street. AO7.2 Ground level parking incorporates clearly defined pedestrian routes. AO7.3 Any porte-cocheres, disabled and pedestrian accesses are accommodated within the boundary of new or refurbished development. AO7.4 Where the development is an integrated mixed-use development incorporating short term accommodation or multiple dwellings and either food and drink outlet or hotel or shop or shopping centre or office, on-site parking spaces are provided as per the number prescribed in the Parking and access code with a relaxation of 30% of spaces required for the non-residential uses.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
	<p>A07.5 On-site car parking available for public use is clearly signed at the site frontage.</p> <p>A07.6 Boom gates, pay machines or other regulatory devices to control access to a publicly available car parking area are not constructed or installed.</p>	
<p>PO8 Precinct 1 – Port Douglas precinct is not characterised by a proliferation of advertising signs.</p>	<p>A08 No acceptable outcomes are prescribed.</p>	Not Applicable
Additional requirements for Sub-precinct 1a – Town Centre sub-precinct		
<p>PO9 Building heights:</p> <ul style="list-style-type: none"> (a) do not overwhelm or dominate the town centre; (b) respect the desired streetscape; (c) ensure a high quality appearance when viewed from both within the town centre sub-precinct and external to the town centre sub-precinct; (d) remain subservient to the natural environment and the backdrop of Flagstaff Hill. (e) do not exceed 3 storeys. 	<p>A09 Buildings and structures are not more than 3 storeys and 13.5 metres in height, with a roof height of not less than 3 metres.</p> <p>Note – Height is inclusive of the roof height.</p>	Not Applicable
<p>PO10 Building design, the streetscape, pedestrian paths and street front spaces promote integration with the surrounding area and the rest of Precinct 1 – Port Douglas Precinct.</p>	<p>A010 No acceptable outcomes are prescribed.</p>	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO11 Buildings: (a) address street frontages; (b) ensure main entrances front the street or public spaces; (c) do not focus principally on internal spaces or parking areas.	AO11 No acceptable outcomes are prescribed.	Not Applicable
PO12 Setbacks at ground level provide for: (a) connection between pedestrian paths and public places; (b) areas for convenient movement of pedestrians; (c) changes in gradient of the street.	AO12 Setbacks at ground level: (a) are clear of columns and other obstructions; (b) have pavement matching the gradient of adjoining footpaths and connecting pedestrian areas on adjoining sites; (c) connect without any lip or step to adjoining footpaths.	Not Applicable
AO13 Buildings do not result in a reduction of views and vistas from public places to: (a) Flagstaff Hill; (b) Dickson Inlet; (c) public open space; (d) places of significance.	AO13 No acceptable outcomes are prescribed.	Not Applicable
PO14 Development enhances the distinctive tropical resort town and identity of Port Douglas and encourages pedestrian activity at street level including shade protection across the footpath for the length of the building.	AO14 Development is built up to the street frontage/s at the street level and incorporates a light frame awning, a minimum of 3 metres in width for the length of the street frontage/s; or If a development includes an outdoor dining area at ground/footpath level, the dining area has a maximum setback of 3 metres and the required awning is still maintained along the length of the street frontage/s. Note – PO24 provides more detail on awning design.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO15 Development is predominantly commercial in nature with any tourist accommodation having a secondary focus and not located on the street-level frontage where active frontages are encouraged as identified the Port Douglas local plan maps contained in Schedule 2.	AO15.1 Centre activities establish: at street level on active street frontages; a maximum of one level above street level. AO15.2 Any residential development activities or short term accommodation is located above street level of the active frontage, but not on or up to the street frontage in any development, including mixed use development.	Not Applicable
PO16 Detailed building design: (a) enhances the visual amenity of the streetscape; (b) has a legible and attractive built form that is visually enhanced by architectural elements; (c) contributes to a distinctive tropical north Queensland, seaside tourist town character; (d) integrates major landscaping elements to maximise their aesthetic value to ensure that the lush, vegetated character of the Town Centre sub-precinct is maintained.	AO16 No acceptable outcomes are prescribed.	Not Applicable
PO17 Buildings exhibit variations to their external appearance and the shape of the built form to provide visual interest through: (a) surface decoration; (b) wall recesses and projections; (c) a variation in wall finishes; windows, balconies, awnings and other visible structural elements.	AO17 No acceptable outcomes are prescribed.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
(d) differentiating between the lower, middle and upper parts of the building by varying the façade and/or the shape of the built form, where comprised of more than two storeys.		
P018 Roofs are not characterised by a cluttered display of plant and equipment, in particular: <ul style="list-style-type: none"> (a) building caps and rooftops contribute to the architectural distinction of the building and create a coherent roofscape for the Town Centre sub-precinct; (b) service structures, lift motor rooms and mechanical plant and equipment are designed as an architectural feature of the building or are screened from public view; (c) rooftops are not used for advertising. 	AO18 No acceptable outcomes are prescribed.	Not Applicable
P019 Windows and sun/rain control devices are used in the building form, in particular, sun shading devices are provided to: <ul style="list-style-type: none"> (a) shade windows; (b) reduce glare; (c) assist in maintaining comfortable indoor temperatures; (d) minimising heat loads; (e) enrich the North Queensland tropical character of the Town Centre sub-precinct; (f) provide architectural interest to building façades. 	AO19 No acceptable outcomes are prescribed.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO20 Buildings are finished with high quality materials, selected for: <ul style="list-style-type: none"> (a) their ability to contribute the character of Town Centre sub-precinct; (b) easy maintenance, durability and an ability not to readily stain, discolour or deteriorate. 	AO20 No acceptable outcomes are prescribed	Not Applicable
PO21 Buildings do not incorporate any type of glass or other materials that are likely to reflect the sun's rays in a manner that may create a nuisance, discomfort or a hazard.	AO21 No acceptable outcomes are prescribed.	Not Applicable
PO22 Façades and elevations do not include large blank walls. Openings and setbacks are used to articulate vertical building surfaces.	AO22.1 Development has a maximum length of unbroken building facade of 20 metres and a maximum extent of overall development in the same style/design along the street frontage/s of 40 metres. AO22.2 Any break in the building façade varies the alignment by a 1 metre minimum deviation. AO22.3 A minimum of three of the following building design features and architectural elements detailed below are incorporated to break the extended facade of a development: <ul style="list-style-type: none"> (a) a change in roof profile; (b) a change in parapet coping; (c) a change in awning design; (d) a horizontal or vertical change in the wall plane; or (e) a change in the exterior finishes and exterior colours of the development. 	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO23 Building facades that face public spaces at ground level: <ul style="list-style-type: none"> (a) complement the appearance of the development and surrounding streetscape; (b) enhance the visual amenity of the public place; (c) include a variety of human scale architectural elements and details; (d) provide an opportunity for the casual and convenient surveillance of public space from within the development. 	AO23 Building facades at the ground floor of development that face public space are designed to ensure: <ul style="list-style-type: none"> (a) a minimum of 70% of the façade area is comprised of windows, wall openings or shop fronts that permit the casual surveillance of the public space from the development; (b) a visually prominent main entrance that faces the principal public place; (c) vertical architectural elements and features are incorporated at 3 metre or less intervals along the length of the façade. 	Not Applicable
PO24 Awnings for pedestrian shelter are consistent with the character setting of the Town Centre sub-precinct and: <ul style="list-style-type: none"> (a) extend and cover the footpath to provide protection from the sun and rain; (b) include lighting under the awning; (c) are continuous across the frontage of the site; (d) align to provide continuity with existing or future awnings on adjoining sites; (e) are a minimum of 3.0 metres in width and generally not more than 3.5 metres above pavement height; (f) do not extend past a vertical plane, 1.2 metres inside the kerb-line to enable street trees to be planted and grow; (g) are cantilevered from the main building with any posts within the footpath being non load-bearing. 	AO24 No acceptable outcomes are prescribed.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO25 Development integrates with the streetscape and landscaping improvements for Port Douglas.	AO25 Development fronting Davidson Street, Macrossan Street, Wharf Street, Mowbray Street and Warner Street is designed to integrate with the on-street landscaping and design improvements as outlined within the Port Douglas landscape master plan contained within Planning scheme policy SC6.7 – Landscaping. Note - Planning scheme policy SC6.7 - Landscaping provides guidance on meeting the Performance Outcome.	Not Applicable
Additional requirements for Sub-precinct 1b – Waterfront North sub-precinct		
PO26 The establishment of uses is consistent with the outcomes sought for sub-precinct 1b – Waterfront North.	AO26 Uses identified as inconsistent uses in Table 7.2.4.b – Inconsistent uses in sub-precinct 1b Waterfront North sub precinct are not established in sub-precinct 1b - Waterfront North.	Not Applicable
PO27 The bulk and scale of buildings is consistent with surrounding development and steps down to complement the open space areas in the adjoining limited development sub-precinct.	AO27 Buildings and structures are not more than: (a) 3 storeys and 13.5 metres in height, with a roof height of not less than 3 metres, in those parts of the precinct south of Inlet Street; (b) 2 storeys and 8.5 metres in height, with a roof height of not less than 3 metres, in those parts of the precinct north of Inlet Street. Note – Height is inclusive of roof height.	Not Applicable
PO28 Building design, streetscape, pedestrian paths and street front spaces promote integration with the surrounding area and the rest of Precinct 1 – Port Douglas Precinct	AO28 No acceptable outcomes are prescribed.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO29 Public pedestrian access along the water's edge is maximised.	AO29.1 Public pedestrian access is provided along the frontage of the water's edge consisting of a boardwalk of a minimum width of 4 metres that is available of 24-hour use. AO29.2 A public plaza is incorporated into the design generally reflecting the requirements of the Port Douglas Waterfront Master Plan, focussing in the vicinity of the 'Duck Pond'. AO29.3 Built envelopes are setback a minimum of 3.0 metres from the board walk, with a shelter/shade zone between the building envelopes and the boardwalk consisting of shade structure, canopies, verandahs and the like.	Not Applicable
PO30 Buildings: (a) address street frontages; (b) ensure main entrances front the street or public spaces.	AO30 No acceptable outcomes are prescribed.	Not Applicable
PO31 Setbacks at ground level provide for: (a) connection between pedestrian paths and public places; (b) areas for convenient movement of pedestrians; (c) changes in gradient.	AO31 Setbacks at ground level: (a) are clear of columns and other obstructions; (b) have pavement matching the gradient of adjoining footpaths and connecting pedestrian areas on adjoining sites; (c) connect without any lip or step to adjoining footpaths.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO32 Buildings do not result in a reduction of views and vistas from public places to: (a) Dickson Inlet; (b) public open space; (c) places of significance.	AO32 No acceptable outcomes are prescribed.	Not Applicable
PO33 Development enhances the distinctive tropical resort town and identity of Port Douglas and encourages pedestrian activity at ground level including shade protection across the footpath and open space areas.	AO33 No acceptable outcomes are prescribed.	Not Applicable
PO34 Development is predominantly commercial in nature with any tourist accommodation having a secondary focus and not located on the street-level frontage where active frontages are encouraged as identified the Port Douglas local plan maps contained in Schedule 2.	AO34.1 Centre activities establish: (a) at street level on active street frontages; (b) a maximum of one level above street level. AO34.2 Residential development activities or short term accommodation is located above street /ground floor level of the active frontage, but not on or up to the street / public frontage in any development, including mixed use development.	Not Applicable
PO35 Detailed building design: (a) enhances the visual amenity of the streetscape; (b) has a legible and attractive built form that is visually enhanced by architectural elements; (c) contributes to a distinctive tropical north Queensland, seaside tourist town character; (d) integrates major landscaping elements to maximise their aesthetic value to ensure that the lush, vegetated character of the Waterfront North sub-precinct is maintained.	AO35 No acceptable outcomes are prescribed.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO36 Buildings exhibit variations to their external appearance and the shape of the built form to provide visual interest through: <ul style="list-style-type: none"> (a) surface decoration; (b) wall recesses and projections; (c) a variation in wall finishes; windows, balconies, awnings and other visible structural elements. (d) differentiating between the lower, middle and upper parts of the building by varying the façade and/or the shape of the built form, where comprised of more than two storeys. 	AO36 No acceptable outcomes are prescribed.	Not Applicable
PO37 Roofs are not characterised by a cluttered display of plant and equipment, in particular: <ul style="list-style-type: none"> (a) building caps and rooftops contribute to the architectural distinction of the building and create a coherent roofscape for the Waterfront North sub-precinct; (b) service structures, lift motor rooms and mechanical plant and equipment are designed as an architectural feature of the building or are screened from public view; (c) rooftops are not used for advertising. 	AO37 No acceptable outcomes are prescribed.	Not Applicable
PO38 Windows and sun/rain control devices are used in the building form, in particular, sun shading devices are provided to: <ul style="list-style-type: none"> (a) shade windows; (b) reduce glare; (c) assist in maintaining comfortable indoor temperatures; (d) minimising heat loads; 	AO38 No acceptable outcomes are prescribed.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
(e) enriching the North Queensland tropical character of the Waterfront North sub-precinct; (f) architectural interest to building façades.		
PO39 Buildings are finished with high quality materials, selected for: (a) their ability to contribute the character of Waterfront North sub-precinct; (b) easy maintenance, durability and an ability not to readily stain, discolour or deteriorate.	AO39 No acceptable outcomes are prescribed.	Not Applicable
PO40 Buildings do not incorporate any type of glass or other materials that are likely to reflect the sun's rays in a manner that may create a nuisance, discomfort or a hazard.	AO40 No acceptable outcomes are prescribed.	Not Applicable
PO41 Façades and elevations do not include large blank walls and openings and setbacks are used to articulate vertical building surfaces.	AO41.1 Development has a maximum length of unbroken building facade of 20 metres and a maximum extent of overall development in the same style/design along the street frontage/s of 40 metres. AO41.2 Any break in the building façade varies the alignment by a 1 metre minimum deviation. AO41.3 A minimum of three of the following building design features and architectural elements detailed below are incorporated to break the extended facade of a development: (a) a change in roof profile; (b) a change in parapet coping; (c) a change in awning design;	Not Applicable

Performance outcomes	Acceptable outcomes	Applicant response
	(d) a horizontal or vertical change in the wall plane; or (e) a change in the exterior finishes and exterior colours of the development	
PO42 Building facades that face public spaces at ground level: (a) complement the appearance of the development and surrounding streetscape; (b) enhance the visual amenity of the public place; (c) include a variety of human scale architectural elements and details; (d) provide an opportunity for the casual and convenient surveillance of public space from within the development.	AO42 Building facades at the ground floor of development that face public space are designed to ensure: (a) a minimum of 70% of the façade area is comprised of windows, wall openings or shop fronts that permit the casual surveillance of the public space from the development; (b) a visually prominent main entrance that faces the principal public place; (c) vertical architectural elements and features are incorporated at 3 metre or less intervals along the length of the façade.	Not Applicable
PO43 Awnings for pedestrian shelter are consistent with the character setting of the Waterfront North sub-precinct and: (a) extend and cover the footpath to provide protection from the sun and rain; (b) include lighting under the awning; (c) are continuous across pedestrian circulation areas; (d) align to provide continuity with existing or future awnings on adjoining sites; (e) are a minimum of 3 metres in width and generally not more than 3.5 metres above pavement height; (f) do not extend past a vertical plane, 1.2 metres inside the street kerb-line to enable street trees to be planted and grow;	AO43 No acceptable outcomes are prescribed.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
(g) are cantilevered from the main building with any posts within the footpath being non load-bearing.		
PO44 The Balley Hooley rail line and turn-table is retained and incorporated into development and maintains its functionality.	AO44.1 Bally Hooley rail line and turn-table is retained and incorporated into development to maintain its functionality. AO44.2 Where development provides floor area for the Bally Hooley rail station, the gross floor area of the rail line and station does not generate a requirement for additional vehicle parking.	Not Applicable
PO45 Development recognises the importance of and relationship between the marina, commercial and residential development in the Waterfront North sub-precinct, and includes measures to mitigate the impact of: (a) noise; (b) odour; (c) hazardous materials; (d) waste and recyclable material storage.	AO45 No acceptable outcomes are prescribed.	Not Applicable
PO46 Formalised public spaces and pedestrian paths/areas on freehold land are made accessible to the public.	AO46 No acceptable outcomes are prescribed.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO47 Buildings, civic spaces, roads and pedestrian links are enhanced by: <ul style="list-style-type: none"> (a) appropriate landscape design and planting; (b) themed planting that defines entry points, and creates strong 'entry corridors' into the waterfront; (c) lighting and well-considered discrete signage that complements building and landscape design; (d) public artwork and other similar features that reflect the heritage and character of the Port Douglas Waterfront. 	AO47 No acceptable outcomes are prescribed.	Not Applicable
PO48 Buildings are designed and sited to provide vistas along shared pedestrian/open space and movement areas in suitable locations.	AO48 No acceptable outcomes are prescribed.	Not Applicable
PO49 Development does not diminish the viability of marine-based industrial uses that directly serve the Port Douglas tourist and fishing operators and private boat owners, particularly with respect to the slipway operation.	AO49 No acceptable outcomes are prescribed.	Not Applicable
PO50 Marine infrastructure to service the tourism, fishing and private boating community is provided.	AO50 No acceptable outcomes are prescribed.	Not Applicable
PO51 Changes to the Port Douglas Waterfront quay-line do not cause adverse impacts to the environmentally sensitive Dickson Inlet.	AO51 Development that results in changes to the Port Douglas Waterfront quay-line is only established where an Ecological assessment report provides support to the changes. Note - Planning scheme policy SC6.8 – Natural environment provides guidance on preparing an ecological assessment report.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
Additional requirements for Sub-precinct 1c – Waterfront South sub-precinct		
PO52 The establishment of uses is consistent with the outcomes sought for Precinct 1c – Waterfront South.	AO52 Uses identified as inconsistent uses in Table 7.2.4.4.c are not established in Precinct 1c – Waterfront South.	Not Applicable
PO53 Development does not adversely impact on the natural environment, natural vegetation or watercourses.	AO53.1 An Ecological assessment report is prepared identifying the environmental qualities of the surrounding natural and built features which are to be managed. Note - Planning scheme policy SC6.8 – Natural environment provides guidance on preparing an ecological assessment report. AO53.2 An Environmental Management Plan is prepared to manage potential impacts of the operation of the development on surrounding natural areas. Note - Planning scheme policy SC6.4 – Environmental management plans contains information to demonstrate compliance and guidance on preparing an Environmental Management Plan.	Not Applicable
PO54 Development of land at the end of Port Street adjacent to Dickson Inlet incorporates a slipway, or an alternative functioning facility, with capacity to service the Port Douglas marine and tourism industry.	AO54 A master plan for the development is provided and implemented to demonstrate the integration of the slipway, or an alternative functioning facility, with other supporting service industry activities that service the marine and tourism industry of Port Douglas.	Not Applicable
PO55 Buildings and structures are of a height, and are set back from side boundaries and other sensitive areas to ensure the scenic amenity and environmental qualities of the adjacent area are not adversely affected.	AO55.1 Development has a height of not more than 10 metres. AO55.2 Development is setback from all property boundaries not less than 3 metres.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO56 The site coverage of all buildings and structures ensures development: <ul style="list-style-type: none"> (a) is sited in an existing cleared area or in an area approved for clearing; (b) has sufficient area for the provision of services; (c) development does not have an adverse effect on the environmental, habitat, conservation or landscape values of the on-site and surrounding sensitive areas. 	AO56 No acceptable outcomes are prescribed.	Not Applicable
PO57 Premises include adequate provision for service vehicles, to cater for generated demand. Loading areas for service vehicles are designed to: <ul style="list-style-type: none"> (a) be accommodated on-site; (b) maximise safety and efficiency of loading; (c) protect the visual and acoustic amenity of sensitive land use activities; (d) minimise adverse impacts on natural characteristics of adjacent areas. 	AO57.1 Sufficient manoeuvring area is provided on-site to allow a Medium Rigid Vehicle to enter and leave the site in a forward gear. AO57.2 Development is designed to ensure all service vehicles are contained within the site when being loaded/unloaded. AO57.3 Driveways, parking and manoeuvring areas are constructed and maintained to: <ul style="list-style-type: none"> (a) minimise erosion from storm water runoff; (b) retain all existing vegetation. 	Not Applicable
PO58 Development ensures adverse impacts from service vehicles on the road network, external to the site, are minimised.	AO58 No acceptable outcomes are prescribed.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO59 Entry to the site is landscaped to enhance the amenity of the area and provide a pleasant working environment.	AO59 Areas used for loading and unloading, storage, utilities and car parking are screened from public view: (a) by a combination of landscaping and screen fencing; (b) dense planting along any road frontage is a minimum width of 3 metres.	Not Applicable
PO60 Landscaping is informal in character and complementary to the existing natural environment, provides screening and enhances the visual appearance of the development.	AO60 For any development landscaping is in accordance with the Plant species schedule in Planning scheme policy SC6.7– Landscaping.	Not Applicable
Additional requirements for Sub-precinct 1d – Limited Development sub-precinct		
PO61 The height of buildings and structures contributes to the desired form and outcomes for the sub-precinct and are limited to a single storey.	AO61 Buildings and structures are not more than one storey and 4 metres in height. Note - Height is inclusive of the roof height.	Not Applicable
Additional requirements for Sub-precinct 1e – Community and recreation sub-precinct		
PO62 The precinct is developed for organised sporting activities and other community uses.	AO62 No acceptable outcomes are prescribed.	Not Applicable
Additional requirements for Sub-precinct 1f – Flagstaff Hill sub-precinct		
PO63 Flagstaff Hill is protected from inappropriate development to protect the hill as an important natural landmark feature of Port Douglas and as a vegetated backdrop to the Town centre.	AO63 No acceptable outcomes are prescribed	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
PO64 All development on Flagstaff Hill is designed to minimise the visibility of the development and to ensure development is subservient to the natural landscape and topography of the site, including through: <ul style="list-style-type: none"> (a) building design which minimises excavation and filling; (b) buildings being designed to step down the site and incorporate foundations and footings on piers or poles; (c) buildings being visually unobtrusive and incorporating exterior finishes and muted colours which are non-reflective and complement the colours of the surrounding vegetation and view-shed; (d) protection of the views from public viewing points in the Port Douglas precinct. 	AO64 No acceptable outcomes are prescribed.	Not Applicable
Additional requirements for Precinct 3 – Craiglie Commercial and Light Industry precinct		
PO65 Development supports the tourism and marine industries in Port Douglas, along with the small-scale commercial and light industry land uses that support the local economy that would otherwise be better suited to a location outside the Port Douglas Town Centre Precinct.	AO65 Development consists of service and light industries and associated small scale commercial activities.	Not Applicable
PO66 Development on lots adjacent to the Captain Cook Highway is sited, designed and landscaped to provide an attractive visual approach to Port Douglas with all buildings, structures and car parking areas setback a sufficient distance from the frontage to enable landscaping to soften or screen the appearance of the development.	AO66.1 Buildings and structures are setback 8 metres from the Captain Cook Highway frontage, or no closer to the Captain Cook Highway frontage than buildings and structures on adjoining sites (averaged), whichever is the greater.	Not Applicable



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO66.2 The setback area to the Captain Cook Highway frontage is landscaped with advanced dense planting including tree species (100 litre bag stock), which will, at maturity, exceed the height of the building(s) on the site.</p> <p>AO66.3 Advertising signs are discreet in appearance with no large advertising signs, including tenancy signs, located on or near the Captain Cook Highway frontage, or within any landscaped setback area.</p> <p>AO66.4 Car parking areas, loading and other service areas are designed to be screened from the Captain Cook Highway and are located so as to not be visually prominent from the Captain Cook Highway.</p>	
Additional requirements for Precinct 6 – Very Low Residential Density / Low Scale Recreation / Low Scale Educational / Low Scale Entertainment Uses precinct		
<p>PO67 No additional lots are created within the precinct.</p>	<p>AO67 No acceptable outcomes are prescribed.</p>	Not Applicable
<p>PO68 Reconfigured lots have a minimum lot size of 2 hectares, unless the lot reconfiguration transfers lots to the higher parts of the land, to avoid the need to fill existing lots to accommodate dwelling houses.</p>	<p>AO68 No acceptable outcomes are prescribed.</p>	Not Applicable

Table 7.2.4.4.b – Inconsistent uses in sub-precinct 1b – Waterfront North sub-precinct

Inconsistent uses		
<ul style="list-style-type: none"> • Agricultural supplies store • Air services • Animal husbandry • Animal keeping • Aquaculture • Brothel • Bulk landscape supplies • Car wash • Cemetery • Crematorium • Cropping • Detention facility • Dual occupancy • Dwelling house 	<ul style="list-style-type: none"> • Extractive industry • Funeral parlour • High impact industry • Intensive animal industry • Intensive horticulture • Major electricity infrastructure • Major sport, recreation and entertainment facility • Medium impact industry • Motor sport facility, • Outstation • Permanent plantation 	<ul style="list-style-type: none"> • Relocatable home park • Roadside stall • Rural industry • Rural workers accommodation • Service station • Showroom • Special industry • Tourist park • Transport depot • Veterinary services • Warehouse • Wholesale nursery • Winery

Table 7.2.4.4.c – Inconsistent uses in sub-precinct 1c – Waterfront South sub-precinct

Inconsistent uses		
<ul style="list-style-type: none"> • Adult store • Agricultural supplies store • Air services • Animal husbandry • Animal keeping • Brothel • Bulk landscape supplies • Car wash • Cemetery • Child care centre • Community care centre • Community residence • Community use • Crematorium • Cropping • Detention facility • Dual occupancy • Dwelling house • Dwelling unit • Extractive industry • Function facility • Funeral parlour • Garden centre 	<ul style="list-style-type: none"> • Hardware and trade supplies • Health care services • Home based business • Hospital • Hotel • Indoor sport and recreation • Intensive animal industry • Intensive horticulture • Major electricity infrastructure • Major sport, recreation and entertainment facility • Market • Motor sport facility • Multiple dwelling • Nature-based tourism • Nightclub entertainment facility • Outdoor sales • Outdoor sport and recreation • Outstation 	<ul style="list-style-type: none"> • Permanent plantation • Place of worship • Relocatable home park • Residential care facility • Resort complex • Retirement facility • Roadside stall • Rooming accommodation • Rural industry • Rural workers accommodation • Sales office • Shopping centre • Short-term accommodation • Showroom • Special industry • Theatre • Tourist attraction • Tourist park • Transport depot • Veterinary services • Warehouse • Wholesale nursery • Winery

Note –

Table 7.2.4.4.b – Inconsistent uses in sub-precinct 1b – Waterfront North sub-precinct or

Table 7.2.4.4.c – Inconsistent uses in sub-precinct 1c – Waterfront South sub-precinct do not imply that all other uses not listed in the table are automatically consistent uses within the zone. Assessable development must still demonstrate consistency through the assessment process.

8.2.10 Transport network overlay code

8.2.10.1 Application

- (1) This code applies to assessing a material change of use, reconfiguring a lot, operational work or building work within the Transport network overlay; if:
 - (a) self-assessable or assessable development where the code is identified as being applicable in the Assessment criteria for the Overlay Codes contained in the Levels of Assessment Tables in section 5.6;
 - (b) impact assessable development.
- (2) Land within the Transport network overlay is identified on the Transport network (Road Hierarchy) overlay map and the Transport network (Pedestrian and Cycle) overlay map in Schedule 2 and includes the following sub-categories:
 - (a) Transport network (Road Hierarchy) overlay sub-categories:
 - (i) State controlled road sub-category;
 - (ii) Sub-arterial road sub-category;
 - (iii) Collector road sub-category;
 - (iv) Access road sub-category;
 - (v) Industrial road sub-category;
 - (vi) Major rural road sub-category;
 - (vii) Minor rural road sub-category;
 - (viii) Unformed road sub-category;
 - (ix) Major transport corridor buffer area sub-category.
 - (b) Transport network (Pedestrian and Cycle) overlay sub-categories:
 - (i) Principal route;
 - (ii) Future principal route;
 - (iii) District route;
 - (iv) Neighbourhood route;
 - (v) Strategic investigation route.

8.2.10.2 Purpose

- (1) The purpose of the Transport network overlay code is to:
 - (a) implement the policy direction of the Strategic Framework, in particular:
 - (i) Theme 1: Settlement pattern Element 3.4.2 Urban settlement, Element 3.4.3 Activity centres;
 - (ii) Theme 6: Infrastructure and transport Element 3.9.4 Transport;
 - (b) enable an assessment of whether development is suitable on land within the Transport network overlay.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) development provides for transport infrastructure (including active transport infrastructure);
 - (b) development contributes to a safe and efficient transport network;
 - (c) development supports the existing and future role and function of the transport network;
 - (d) development does not compromise the safety and efficiency of major transport infrastructure and facilities.

Criteria for assessment**Table 8.2.10.3 a – Transport network overlay code – assessable development**

Performance outcomes	Acceptable outcomes	Applicant response
For assessable development		
PO1 Development supports the road hierarchy for the region. Note -A Traffic impact assessment report prepared in accordance with Planning scheme policy SC6.10 - Parking and access is one way to demonstrate achievement of the Performance Outcomes.	AO1.1 Development is compatible with the intended role and function of the transport network as identified on the Transport network overlay maps contained in Schedule 2. AO1.2 Development does not compromise the safety and efficiency of the transport network.	Complies with AO 1.1 – 1.2 A detailed Traffic Impact Assessment has been prepared by GHD and is provided as Attachment 6. This proposal is a redevelopment of an existing and operational tourism accommodation venture. The development is compatible with the intended transport network overlay maps and is demonstrated not to compromise



Performance outcomes	Acceptable outcomes	Applicant response
		<p>the safety and efficiency of Davidson Street or the local road network.</p> <p>Servicing and some access will be provided via Crimmins Street but the main access is provided from Davidson Street which is a State-Controlled Road.</p> <p>This is consistent with the existing development on site.</p> <p>The Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.</p>
Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO1.3 Development is designed to provide access via the lowest order road, where legal and practicable access can be provided to that road.</p>	<p>Complies with AO 1.2</p> <p>The Development fronts and is accessed from the Davidson Street service road which is adjacent the State Controlled Port Douglas Road/Davidson Street.</p> <p>The traffic movements generated by the proposed development are consistent with the existing onsite development.</p> <p>Servicing and access is also provided from Crimmins Street which forms part of the local road network.</p>



Performance outcomes	Acceptable outcomes	Applicant response
		A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.
PO2 Transport infrastructure is provided in an integrated and timely manner. Note - A Traffic impact assessment report prepared in accordance with Planning scheme policy SC6.10 - Parking and access is one way to demonstrate achievement of the Performance Outcomes.	A02 Development provides infrastructure (including improvements to existing infrastructure) in accordance with: (a) the Transport network overlay maps contained in Schedule 2; (b) any relevant Local Plan. Note – The Translink Public Transport Infrastructure Manual provides guidance on the design of public transport facilities.	Not applicable. There is no additional public transport infrastructure proposed as part of the Development.
PO3 Development involving sensitive land uses within a major transport corridor buffer area is located, designed and maintained to avoid or mitigate adverse impacts on amenity for the sensitive land use.	A03 No acceptable outcomes are prescribed. Note – Part 4.4 of the Queensland Development Code provides requirements for residential building design in a designated transport noise corridor.	Complies with PO3. The Development has incorporated a built design response to any impacts from Davidson Street and is consistent with the design, setbacks and built form of similar developments in this location. Notwithstanding, Davidson Street functions in a similar manner to a Local network road. This is also addressed further in SDAP State Code 1.
PO4 Development does not compromise the intended role and function or safety and efficiency of major transport corridors. Note - A Traffic impact assessment report prepared in accordance with Planning scheme policy SC6.10 - Parking and access is one way to demonstrate achievement of the Performance Outcomes.	A04.1 Development is compatible with the role and function (including the future role and function) of major transport corridors. A04.2	Complies with PO4. The development fronts Davidson Street (service road) which accessed the State-controlled Port Douglas Road/Davidson Street from the Crimmins Street and Port Street intersections.

Performance outcomes	Acceptable outcomes	Applicant response
	Direct access is not provided to a major transport corridor where legal and practical access from another road is available.	<p>The existing development has three (3) separate access locations to Davidson Street (service road).</p> <p>The proposed development consolidates a single ingress and egress to Davidson Street (service road) central to the site. Servicing is also provided from Crimmins Street.</p> <p>Davidson Street (service road) is a straight road with a low speed environment and no impediments to site lines.</p> <p>The proposed new access locations are approximately 90m to the closest intersection with Crimmins Street.</p> <p>Additionally, the Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>



Performance outcomes	Acceptable outcomes	Applicant response
	<p>AO4.3 Intersection and access points associated with major transport corridors are located in accordance with: (a) the Transport network overlay maps contained in Schedule 2; and (b) any relevant Local Plan.</p> <p>AO4.4 The layout of development and the design of the associated access is compatible with existing and future boundaries of the major transport corridor or major transport facility.</p>	
<p>PO5 Development retains and enhances existing vegetation between a development and a major transport corridor, so as to provide screening to potential noise, dust, odour and visual impacts emanating from the corridor.</p>	<p>AO5 No acceptable outcomes are prescribed.</p>	<p>Complies with PO5.</p> <p>Extensive landscaping is proposed to the streetscape of Davidson Street to enhance the tropical character of the area. This landscaping also results in improved screening to potential noise, dust, odour, and visual impacts when compare to the current form of development.</p> <p>A detailed landscaping plan is provided at Attachment 3.</p>
Pedestrian and cycle network		
<p>PO6 Lot reconfiguration assists in the implementation of the pedestrian and cycle movement network to achieve safe, attractive and efficient pedestrian and cycle networks</p>	<p>AO6.1 Where a lot is subject to, or adjacent to an element of the pedestrian and cycle Movement network (identified on the Transport network overlay maps contained in Schedule 2) the specific location of this element of the pedestrian and cycle network is incorporated in the design of the lot layout.</p> <p>AO6.2</p>	<p>Not applicable. The lot configuring is an internal CMS arrangement. There are existing pedestrian and cycle networks along the Davidson Street frontage.</p>

Performance outcomes	Acceptable outcomes	Applicant response
	The element of the pedestrian and cycle network is constructed in accordance with the Design Guidelines set out in Sections D4 and D5 of the Planning scheme policy SC6.5 – FNQROC Regional Development Manual.	

9.4.5 Infrastructure works code

9.4.5.1 Application

- (1) This code applies to assessing:
 - (a) operational work which requires an assessment as a condition of a development permit or is assessable development if this code is identified in the assessment criteria column of a table of assessment;
 - (b) a material change of use or reconfiguring a lot if:
 - (i) assessable development where this code is identified in the assessment criteria column of the table of assessment;
 - (ii) impact assessable development, to the extent relevant.

Note – The Filling and excavation code applies to operational work for filling and excavation.

- (2) When using this code, reference should be made to Part 5.

9.4.5.2 Purpose

- (1) The purpose of the Infrastructure works code is to ensure that development is safely and efficiently serviced by, and connected to, infrastructure.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) the standards of water supply, waste water treatment and disposal, stormwater drainage, local electricity supply, telecommunications, footpaths and road construction meet the needs of development and are safe and efficient;
 - (b) development maintains high environmental standards;
 - (c) development is located, designed, constructed and managed to avoid or minimise impacts arising from altered stormwater quality or flow, wastewater discharge, and the creation of non-tidal artificial waterways;
 - (d) the integrity of existing infrastructure is maintained;
 - (e) development does not detract from environmental values or the desired character and amenity of an area.

9.4.5.3 Criteria for assessment

Table 9.4.5.3.a – Infrastructure works code –assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
Works on a local government road		

**PO1**

Works on a local government road do not adversely impact on footpaths or existing infrastructure within the road verge and maintain the flow, safety and efficiency of pedestrians, cyclists and vehicles.

AO1.1

Footpaths/pathways are located in the road verge and are provided for the hierarchy of the road and located and designed and constructed in accordance with Planning scheme policy SC5 – FNQROC Regional Development Manual.

AO1.2

Kerb ramp crossovers are constructed in accordance with Planning scheme policy SC 5 – FNQROC Regional Development Manual.

AO1.3

New pipes, cables, conduits or other similar infrastructure required to cross existing footpaths:

- (a) are installed via trenchless methods; or
- (b) where footpath infrastructure is removed to install infrastructure, the new section of footpath is installed to the standard detailed

Complies AO 1.1

The site is serviced by an existing footpath/pathway between the Davidson Street service road and Davidson Street. The path is well utilised and fit for purpose and well shaded. No additional footpaths are proposed.

Complies with AO 1.2

The ingress and egress crossover on Davidson Street and the crossover to Crimmins Street are designed in accordance with FNQROC Standards. Detailed civil plans are provided at Attachment 5.

Complies with AO1.3 and AO1.4

New infrastructure will not impact existing footpaths.



Performance outcomes	Acceptable outcomes	Applicant response
	<p>in the Planning scheme policy SC5 – FNQROC Regional Development Manual, and is not less than a 1.2 metre section.</p> <p>AO1.4 Where existing footpaths are damaged as a result of development, footpaths are reinstated ensuring:</p> <ul style="list-style-type: none"> (a) similar surface finishes are used; (b) there is no change in level at joins of new and existing sections; (c) new sections are matched to existing in terms of dimension and reinforcement. <p>Note – Figure 9.4.5.3.a provides guidance on meeting the outcomes.</p> <p>AO1.5 Decks, verandahs, stairs, posts and other structures located in the road reserve do not restrict or impede pedestrian movement on footpaths or change the level of the road verges.</p>	AO1.5 is not applicable to the proposed development.
Accessibility structures		
<p>PO2 Development is designed to ensure it is accessible for people of all abilities and accessibility features do not impact on the efficient and safe use of footpaths.</p> <p>Note – Accessibility features are those features required to ensure access to premises is provided for people of all abilities and include ramps and lifts.</p>	<p>AO2.1 Accessibility structures are not located within the road reserve.</p> <p>AO2.2 Accessibility structures are designed in accordance with AS1428.3.</p> <p>AO2.3 When retrofitting accessibility features in existing buildings, all structures and changes in grade are contained within the boundaries of the lot and not within the road reserve.</p>	<p>Complies with AO2.1 – 2.3.</p> <p>All accessibility structures are located within the site boundary and where required, are designed in accordance with AS1428.3.</p>
Water supply		

**PO3**

An adequate, safe and reliable supply of potable, fire fighting and general use water is provided.

AO3.1

The premises is connected to Council's reticulated water supply system in accordance with the Design Guidelines set out in Section D6 of the Planning scheme policy SC5 – FNQROC Regional Development Manual;

or

AO3.2

Where a reticulated water supply system is not available to the premises, on site water storage tank/s with a minimum capacity of 10,000 litres of stored water, with a minimum 7,500 litre tank, with the balance from other sources (e.g. accessible swimming pool, dam etc.) and access to the tank/s for fire trucks is provided for each new house or other development. Tank/s are to be fitted with a 50mm ball valve with a camlock fitting and installed and connected prior to

Complies with AO 3.1

An existing 150mm AC Watermain and a 450mm DICL Trunk Watermain runs parallel to the front boundary.

Connection will be in accordance with the FNQROC Development Manual.

Civil Plans are provided at Attachment 5.



Performance outcomes	Acceptable outcomes	Applicant response
	occupation of the house and sited to be visually unobtrusive.	
Treatment and disposal of effluent		
PO4 Provision is made for the treatment and disposal of effluent to ensure that there are no adverse impacts on water quality and no adverse ecological impacts as a result of the system or as a result of increasing the cumulative effect of systems in the locality.	AO4.1 The site is connected to Council's sewerage system and the extension of or connection to the sewerage system is designed and constructed in accordance with the Design Guidelines set out in Section D7 of the Planning scheme policy SC5 – FNQROC Regional Development Manual; or AO4.2 Where not in a sewerage scheme area, the proposed disposal system meets the requirements of Section 33 of the <i>Environmental Protection Policy (Water) 1997</i> and the proposed on site effluent disposal system is designed in accordance with the <i>Plumbing and Drainage Act (2002)</i> .	Complies with AO 4.1 An existing 150mm AC Sewer main traverses inside the property along the rear boundary. The sewer main connects to a Sewer Pump Station in the South Western corner of the Site with a rising main directed towards the Council Sewer Treatment Plant. The proposed sewer gravity main will run along the rear property boundary within the existing road reserve in accordance with the Civil Report provided at Attachment 5.
Stormwater quality		

**PO5**

Development is planned, designed, constructed and operated to avoid or minimise adverse impacts on stormwater quality in natural and developed catchments by:

- (a) achieving stormwater quality objectives;
- (b) protecting water environmental values;
- (c) maintaining waterway hydrology.

AO5.1

A connection is provided from the premises to Council's drainage system;

or

AO5.2

An underground drainage system is constructed to convey stormwater from the premises to Council's drainage system in accordance with the Design Guidelines set out in Sections D4 and D5 of the Planning scheme policy SC5 – FNQROC Regional Development Manual.

AO5.3

A stormwater quality management plan is prepared, and provides for achievable stormwater quality treatment measures meeting design objectives listed in Table 9.4.5.3.b and Table 9.4.5.3.c, reflecting land use constraints, such as:

- (a) erosive, dispersive and/or saline soil types;
- (b) landscape features (including landform);
- (c) acid sulfate soil and management of nutrients of concern;
- (d) rainfall erosivity.

AO5.4

Erosion and sediment control practices are designed, installed, constructed, monitored, maintained, and carried out in accordance with an erosion and sediment control plan.

AO5.5

Development incorporates stormwater flow

Complies with AO5.1

The site will drain to a lawful point of discharge at the rear of the property into the existing road reserve which connects into Council's drainage system.

Complies with AO5.3

The proposed drainage outlet locations will be provided with quality control devices which have been modelled in MUSIC to ensure nutrient reduction loading compliance. If required, a stormwater quality management plan can be conditioned to ensure compliance.

The Development can be conditioned to comply with AO5.4.

If required, the development can be conditioned to comply with AO5.5.



Performance outcomes	Acceptable outcomes	Applicant response
	<p>control measures to achieve the design objectives set out in Table 9.4.5.3.b and Table 9.4.5.3.c, including management of frequent flows, peak flows, and construction phase hydrological impacts.</p> <p>Note – Planning scheme policy SC5 – FNQROC Regional Development Manual provides guidance on soil and water control measures to meet the requirements of the <i>Environmental Protection Act 1994</i>.</p> <p>Note – During construction phases of development, contractors and builders are to have consideration in their work methods and site preparation for their environmental duty to protect stormwater quality.</p>	
Non-tidal artificial waterways		

**PO6**

Development involving non-tidal artificial waterways is planned, designed, constructed and operated to:

- (a) protect water environmental values;
- (b) be compatible with the land use constraints for the site for protecting water environmental values;
- (c) be compatible with existing tidal and non-tidal waterways;
- (d) perform a function in addition to stormwater management;
- (e) achieve water quality objectives.

AO6.1

Development involving non-tidal artificial waterways ensures:

- (a) environmental values in downstream waterways are protected;
- (b) any ground water recharge areas are not affected;
- (c) the location of the waterway incorporates low lying areas of the catchment connected to an existing waterway;
- (d) existing areas of ponded water are included.

AO6.2

Non-tidal artificial waterways are located:

- (a) outside natural wetlands and any associated buffer areas;
- (b) to minimise disturbing soils or sediments;
- (c) to avoid altering the natural hydrologic regime in acid sulfate soil and nutrient hazardous areas.

AO6.3

Non-tidal artificial waterways located adjacent to, or connected to a tidal waterway by means of a weir, lock, pumping system or similar ensures:

- (a) there is sufficient flushing or a tidal range of >0.3 m; or
- (b) any tidal flow alteration does not adversely impact on the tidal waterway; or
- (c) there is no introduction of salt water into freshwater environments.

AO6.4

Non-tidal artificial waterways are designed and managed for any of the following end-use purposes:

- (a) amenity (including aesthetics), landscaping or recreation; or
- (b) flood management, in accordance with a drainage catchment management plan; or
- (c) stormwater harvesting plan as part of an

Not applicable.



integrated water cycle management plan; or aquatic habitat.

AO6.5

The end-use purpose of the non-tidal artificial waterway is designed and operated in a way that protects water environmental values.

AO6.6

Monitoring and maintenance programs adaptively manage water quality to achieve relevant water quality objectives downstream of the waterway.

AO6.7

(d) Aquatic weeds are managed to achieve a low percentage of coverage of the water surface area, and pests and vectors are managed through design and maintenance



Performance outcomes	Acceptable outcomes	Applicant response
Wastewater discharge		
<p>PO7 Discharge of wastewater to waterways, or off site:</p> <ul style="list-style-type: none"> (a) meets best practice environmental management; (b) is treated to: <ul style="list-style-type: none"> (i) meet water quality objectives for its receiving waters; (ii) avoid adverse impact on ecosystem health or waterway health; (iii) maintain ecological processes, riparian vegetation and waterway integrity; (iv) offset impacts on high ecological value waters. 	<p>A07.1 A wastewater management plan is prepared and addresses:</p> <ul style="list-style-type: none"> (a) wastewater type; (b) climatic conditions; (c) water quality objectives; (d) best practice environmental management. <p>A07.2 The waste water management plan is managed in accordance with a waste management hierarchy that:</p> <ul style="list-style-type: none"> (a) avoids wastewater discharge to waterways; or (b) if wastewater discharge cannot practicably be avoided, minimises wastewater discharge to waterways by re-use, recycling, recovery and treatment for disposal to sewer, surface water and ground water. <p>A07.3 Wastewater discharge is managed to avoid or minimise the release of nutrients of concern so as to minimise the occurrence, frequency and intensity of algal blooms.</p> <p>A07.4 Development in coastal catchments avoids or minimises and appropriately manages soil disturbance or altering natural hydrology and:</p> <ul style="list-style-type: none"> (a) avoids lowering ground water levels where potential or actual acid sulfate soils are present; (b) manages wastewater so that: <ul style="list-style-type: none"> (i) the pH of any wastewater discharges is maintained between 6.5 and 8.5 to avoid mobilisation of acid, iron, aluminium and 	<p>The Development is capable of complying with the Acceptable outcomes and can be conditioned to comply.</p>



	<p>other metals;</p> <p>(ii) holding times of neutralised wastewater ensures the flocculation and removal of any dissolved iron prior to release; visible iron floc is not present in any discharge;</p> <p>(iv) precipitated iron floc is contained and disposed of;</p> <p>(iii) wastewater and precipitates that cannot be contained and treated for discharge on site are removed and disposed of through trade waste or another lawful method.</p>	
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Performance outcomes	Acceptable outcomes	Applicant response
Electricity supply		
PO8 Development is provided with a source of power that will meet its energy needs.	AO8.1 A connection is provided from the premises to the electricity distribution network; or AO8.2 The premises is connected to the electricity distribution network in accordance with the Design Guidelines set out in Section D8 of the Planning scheme policy SC5 – FNQROC Regional Development Manual. Note - Areas north of the Daintree River have a different standard.	Complies with AO8.1 The Development can be readily accommodated by the local energy authority (Ergon Energy) via their high voltage (22kV) reticulation system which runs along the street frontage on Davidson Street. It is anticipated that a total of 2No. 1000kVA transformers will be required to power the site. There is already an existing transformer powering the caravan site. This will become redundant due to its location being at the northern end of the site. The proposed location for a new substation for this site will be at the southern end of the site at the end of Crimmins Street.
PO9 Development incorporating pad-mount electricity infrastructure does not cause an adverse impact on amenity.	AO9.1 Pad-mount electricity infrastructure is: (a) not located in land for open space or sport and recreation purposes; (b) screened from view by landscaping or fencing; (c) accessible for maintenance. AO9.2 Pad-mount electricity infrastructure within a building, in a Town Centre is designed and located to enable an active street frontage. Note – Pad-mounts in buildings in activity centres should not be located on the street frontage.	Complies with AO9.1 See commentary above and detailed report provided at Attachment 10 AO9.2 is not applicable.
Telecommunications		



PO10 Development is connected to a telecommunications service approved by the relevant telecommunication regulatory authority.	AO10 The development is connected to telecommunications infrastructure in accordance with the standards of the relevant regulatory authority.	Complies with AO10. See commentary in detailed report provided at Attachment 10
PO11 Provision is made for future telecommunications services (e.g. fibre optic cable).	AO11 Conduits are provided in accordance with Planning scheme policy SC5 – FNQROC Regional Development Manual.	Complies with AO11. See commentary in detailed report provided at Attachment 10
Road construction		
PO12 The road to the frontage of the premises is constructed to provide for the safe and efficient movement of: (a) pedestrians and cyclists to and from the site; (b) pedestrians and cyclists adjacent to the site; (c) vehicles on the road adjacent to the site; (d) vehicles to and from the site; (e) emergency vehicles.	AO12.1 The road to the frontage of the site is constructed in accordance with the Design Guidelines set out in Sections D1 and D3 of the Planning scheme policy SC5 – FNQROC Regional Development Manual, for the particular class of road, as identified in the road hierarchy. AO12.2 There is existing road, kerb and channel for the full road frontage of the site. AO12.3 Road access minimum clearances of 3.5 metres wide and 4.8 metres high are provided for the safe passage of emergency vehicles.	Complies with PO12 Davidson Street and Crimmins Street are constructed and generally fit for purpose. The development proposes a minor upgrade to Crimmins Street to provide a 3.5m wide commercial cross over and a 3.5 wide service road with passing bay for servicing the proposed development. Details are provided in the Civil Report at Attachment 5.
Alterations and repairs to public utility services		
PO13 Infrastructure is integrated with, and efficiently extends, existing networks.	AO13 Development is designed to allow for efficient connection to existing infrastructure networks.	Complies with AO13. Details are provided in the Civil Report at Attachment 5.



<p>PO14 Development and works do not affect the efficient functioning of public utility mains, services or installations.</p>	<p>AO14.1 Public utility mains, services and installations are not required to be altered or repaired as a result of the development;</p> <p>or</p> <p>AO14.2 Public utility mains, services and installations are altered or repaired in association with the works so that they continue to function and satisfy the relevant Design Guidelines set out in Section D8 of the Planning scheme policy SC5 – FNQROC Regional Development Manual.</p>	<p>Development complies with AO14.2.</p> <p>Details are provided in the Civil Report at Attachment 5.</p>
<p>Construction management</p>		
<p>PO15 Work is undertaken in a manner which minimises adverse impacts on vegetation that is to be retained.</p>	<p>AO15 Works include, at a minimum:</p> <ul style="list-style-type: none"> (a) installation of protective fencing around retained vegetation during construction; (b) erection of advisory signage; (c) no disturbance, due to earthworks or storage of plant, materials and equipment, of ground level and soils below the canopy of any retained vegetation; (d) removal from the site of all declared noxious weeds. 	<p>The proposed development can be conditioned to comply with AO15.</p>
<p>PO16 Existing infrastructure is not damaged by construction activities.</p>	<p>AO16 Construction, alterations and any repairs to infrastructure is undertaken in accordance with the Planning scheme policy SC5 – FNQROC Regional Development Manual.</p> <p>Note - Construction, alterations and any repairs to State-controlled roads and rail corridors are undertaken in accordance with the Transport Infrastructure Act 1994.</p>	<p>The proposed development can be conditioned to comply with AO16.</p>



Performance outcomes	Acceptable outcomes	Applicant response
For assessable development		
High speed telecommunication infrastructure		
PO17 Development provides infrastructure to facilitate the roll out of high speed telecommunications infrastructure.	AO17 No acceptable outcomes are prescribed.	Development complies with PO17. See Attachment 10 for further details.
Trade waste		
PO18 Where relevant, the development is capable of providing for the storage, collection treatment and disposal of trade waste such that: (a) off-site releases of contaminants do not occur; (b) the health and safety of people and the environment are protected; (c) the performance of the wastewater system is not put at risk.	AO18 No acceptable outcomes are prescribed.	Development can be conditioned to comply with PO18.
Fire services in developments accessed by common private title		
PO19 Hydrants are located in positions that will enable fire services to access water safely, effectively and efficiently.	AO19.1 Residential streets and common access ways within a common private title places hydrants at intervals of no more than 120 metres and at each intersection. Hydrants may have a single outlet and be situated above or below ground. AO19.2 Commercial and industrial streets and access ways within a common private title serving commercial properties such as factories and warehouses and offices are provided with above or below ground fire hydrants located at not more than 90 metre intervals and at each intersection. Above ground fire hydrants have dual-valved outlets.	Complies with PO 19. See Attachment 9 for further details.



<p>PO20</p> <p>Hydrants are suitable identified so that fire services can locate them at all hours.</p> <p>Note – Hydrants are identified as specified in the Department of Transport and Main Roads Technical Note: 'Identification of street hydrants for fire fighting purposes' available under 'Publications'.</p>	<p>AO20</p> <p>No acceptable outcomes are prescribed.</p>	<p>Complies with PO 20.</p> <p>See Attachment 9 for further details.</p>
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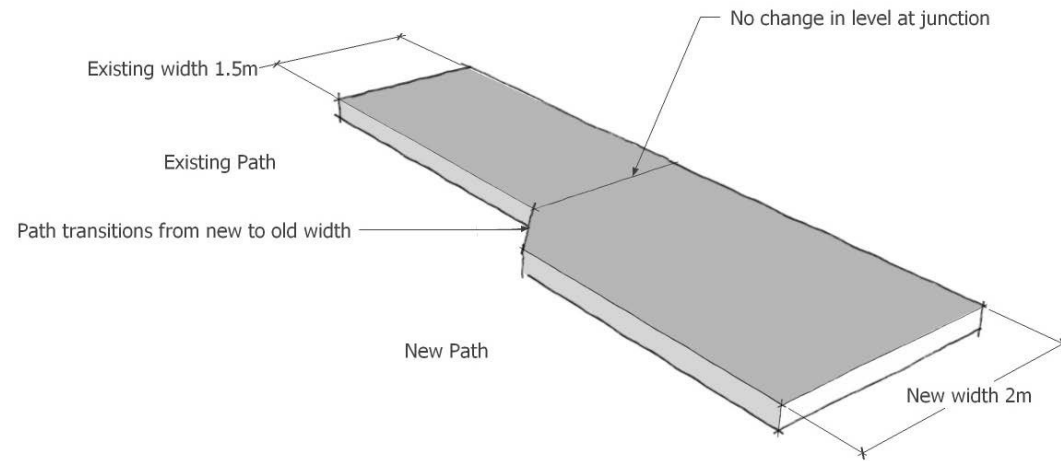
Table 9.4.5.3.b – Stormwater management design objectives (Construction phase).

Issue	Design objectives
Drainage control (Temporary drainage works)	(a) Design life and design storm for temporary drainage works: (i) Disturbed open area for <12 months – 1 in 2 year ARI event; (ii) Disturbed open area for 12-24 months – 1 in 5 year ARI event; (iii) Disturbed open area for >24 months – 1 in 10 year ARI event. (b) Design capacity excludes minimum 150mm freeboard. (c) Temporary culvert crossing – minimum of 1 in 1-year ARI hydraulic capacity.
Erosion control (Erosion control measures)	(a) Minimise exposure of disturbed soils at any time. (b) Divert water run-off from undisturbed areas around disturbed areas. (c) Determine erosion risk rating using local rainfall erosivity, rainfall depth, soil loss rate or other acceptable methods. (d) Implement erosion control methods corresponding to identified erosion risk rating.
Sediment control measures (sediment control measures, design storm for sediment control basins, Sediment basin dewatering)	(a) Determine appropriate sediment control measures using: (i) potential soil loss rate; or (ii) monthly erosivity; or (iii) average monthly rainfall. (b) Collect and drain stormwater from disturbed soils to sediment basin for design storm event: (i) design storm for sediment basin sizing is 80th% five-day event or similar. (c) Site discharge during sediment basin dewatering: (i) TSS < 50mg/L TSS; (ii) Turbidity not > 10% receiving water's turbidity; (iii) pH 6.5-8.5.
Water quality (Litter and other waste, hydrocarbons and other contaminants)	(a) Avoid wind-blown litter; remove grass pollutants. (b) Ensure there is no visible oil or grease sheen on released waters. (c) Dispose of waste containing contaminants at authorised facilities.
Waterway stability and flood flow management (Changes to the natural hydraulics and hydrology)	(a) For peak flow for the 100% AEP event and 1% AEP event, use constructed sediment basins to attenuate the discharge rate of stormwater from the site.

Table 9.4.5.3.c – Stormwater management design objectives (post-construction phase)

Design objectives				Application
Minimum reductions in mean annual load from unmitigated development (%)				
Total suspended solids (TSS)	Total phosphorus (TP)	Total nitrogen (TN)	Gross pollutants >5mm	
80	60	40	90	<p>Development for urban purposes</p> <p>Excludes development that is less than 25% pervious.</p> <p>In lieu of modelling, the default bio-retention treatment area to comply with load reduction targets of 1.5% of contributing catchment area.</p>
<p>Water stability management</p> <p>(a) Limit peak 100% AEP event discharge within the receiving waterway to the pre-development peak 100% AEP event discharge.</p>				<p>Catchments contributing to un-lined receiving waterway. Degraded waterways may seek alternative discharge management objectives to achieve waterway stability.</p> <p>For peak flow for the 100% AEP event, use co-located storages to attenuate site discharge rate of stormwater.</p>

Figure 9.4.5.3.a – New footpath sections



9.4.7 Reconfiguring a lot code

9.4.7.1 Application

- (1) This code applies to assessing reconfiguring a lot if:
 - (a) assessable development where the code is an applicable code identified in the assessment criteria column of a table of assessment;
 - (b) impact assessable development, to the extent relevant.
- (2) When using this code, reference should be made to Part 5.

9.4.7.2 Purpose

- (1) The purpose of the Reconfiguring a lot code is to regulate development for reconfiguring a lot.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) development results in a well-designed pattern of streets supporting walkable communities;
 - (b) lots have sufficient areas, dimensions and shapes to be suitable for their intended use taking into account environmental features and site constraints;
 - (c) road networks provide connectivity that is integrated with adjoining existing or planned development while also catering for the safe and efficient access for pedestrians, cyclists and for public transport;
 - (d) lots are arranged to front all streets and parkland such that development enhances personal safety, traffic safety, property safety and security; and contributes to streetscape and open space quality;
 - (e) development does not diminish environmental and scenic values, and where relevant, maintains and enhances public access and use of natural areas, rivers, dams, creeks and the foreshore, in a way that protects natural resources;
 - (f) people and property are not placed at risk from natural hazards;
 - (g) a range of functional parkland, including local and district parks, major areas of parkland with a region-wide focus and open space links are available for the use and enjoyment of residents and visitors to the region;
 - (h) the appropriate standard of infrastructure is provided.

9.4.7.3 Criteria for assessment

Table 9.4.7.3.a – Reconfiguring a lot code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
General lot design standards		
PO1 Lots comply with the lot reconfiguration outcomes of the applicable Zone code in Part 5.	AO1 No acceptable outcomes are prescribed.	The proposed development does not technically comply with PO1. The reconfiguration outcomes in the Tourist Accommodation Zone code anticipate 1000m² lots.



		<p>The purpose of this lot size is to facilitate Tourist Accommodation outcomes.</p> <p>The proposed development is for Short Term Accommodation / Multiple Dwellings Villas and a Resort Complex and meets the intent of the Tourist Accommodation Zone code.</p> <p>The Reconfiguring a Lot aspect of the development is a technical aspect to create the Community Title Scheme (CTS) Development for the Resort Complex (Hotel lot) and the Short Term Accommodation / Multiple Dwelling (Villa) lots.</p> <p>In this circumstance the proposal meets the purpose of the Reconfiguring a Lot code and the Tourist Accommodation Zone Code.</p>
<p>PO2 New lots are generally rectangular in shape with functional areas for land uses intended by the zone.</p>	<p>AO2 Boundary angles are not less than 45 degrees.</p>	<p>Complies with PO2.</p> <p>The proposed CTS lots are generally rectangular in shape and contain functional areas for the intended land use of the zone which is demonstrated by the MCU component of this development.</p> <p>The Resort Complex (Hotel lot) is not rectangular in shape but corresponds directly to the form of the proposed development.</p>
<p>PO3 Lots have legal and practical access to a public road.</p>	<p>AO3 Each lot is provided with: (a) direct access to a gazetted road reserve; or (b) access to a gazetted road via a formal access arrangement registered on the title.</p>	<p>Complies with PO3.</p> <p>The site has direct access to Davidson Street and Crimmins Street.</p> <p>The proposed lots have access to a road frontage contained within common property.</p>



<p>PO4 Development responds appropriately to its local context, natural systems and site features.</p>	<p>AO4 Existing site features such as: (a) significant vegetation and trees; (b) waterways and drainage paths; (c) vistas and vantage points are retained and/or are incorporated into open space, road reserves, near to lot boundaries or as common property.</p>	<p>Complies with PO4.</p> <p>The proposed development responds directly to the local context and natural site features. This is dealt with at length in other code compliance including the environmental performance code, vegetation management code, landscaping code, landscape values code, and coastal environment overlay code.</p>
<p>PO5 New lots which have the capability of being further reconfigured into smaller lots at a later date are designed to not compromise ultimate development outcomes permitted in the relevant zone.</p>	<p>AO5 The ability to further reconfigure land at a later date is demonstrated by submitting a concept plan that meets the planning scheme requirements for the applicable Zone.</p>	<p>Not applicable.</p>
<p>PO6 Where existing buildings or structures are to be retained, development results in: (a) boundaries that offer regular lot shapes and usable spaces; (b) existing improvements complying with current building and amenity standards in relation to boundary setbacks.</p> <p>Note - This may require buildings or structures to be modified, relocated or demolished to meet setback standards, resolve encroachments and the like.</p>	<p>AO6 Development ensures setbacks between existing buildings or structures and proposed boundaries satisfy relevant building standards or zone code requirements, whichever is the greater.</p>	<p>Not applicable.</p>



<p>P07 Where rear lots are proposed, development:</p> <ul style="list-style-type: none"> (a) provides a high standard of amenity for residents and other users of the site and adjoining properties; (b) positively contributes to the character of adjoining properties and the area; (c) does not adversely affect the safety and efficiency of the road from which access is gained. 	<p>A07.1 Where rear lots are to be established:</p> <ul style="list-style-type: none"> (a) the rear lot is generally rectangular in shape, avoiding contrived sharp boundary angles; (b) no more than 6 lots directly adjoin the rear lot; (c) no more than one rear lot occurs behind the road frontage lot; (d) no more than two access strips to rear lots directly adjoin each other; (e) access strips are located only on one side of the road frontage lot. <p>A07.2 Access strips to the rear lot have a minimum width dimension of:</p> <ul style="list-style-type: none"> (a) 4.0 metres in Residential Zones. (b) 8.0 metres in Industrial Zones category. (c) 5.0 metres in all other Zones. <p>Note - Rear lots are generally not appropriate in non-Residential or non-Rural zones.</p> <p>A07.3 Access strips are provided with a sealed pavement of sufficient width to cater for the intended traffic, but no less than:</p> <ul style="list-style-type: none"> (a) 3.0 metres in Residential Zone. (b) 6.0 metres in an Industrial Zone. (c) 3.5 metres in any other Zone. 	<p>Not applicable.</p>
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Performance outcomes	Acceptable outcomes	Applicant response
Structure plans Additional requirements for: (a) a site which is more than 5,000m ² in any of the Residential zones; or within these zones, and (b) creates 10 or more lots; or (c) involves the creation of new roads and/or public use land. or (d) For a material change of use involving: (i) preliminary approval to vary the effect of the planning scheme; (ii) establishing alternative Zones to the planning scheme. Note - This part is to be read in conjunction with the other parts of the code		
PO8 A structure plan is prepared to ensure that neighbourhood design, block and lot layout, street network and the location and provision on any open space recognises previous planning for the area and its surroundings, and integrates appropriately into its surroundings.	AO8.1 Neighbourhood design, lot and street layout, and open space provides for, and integrates with, any: (a) approved structure plan; (b) the surrounding pattern of existing or approved subdivision. Note - Planning scheme policy SC14– Structure planning provides guidance on meeting the performance outcomes. AO8.2 Neighbourhood design, lot and street layouts enable future connection and integration with adjoining undeveloped land.	Not applicable.



<p>PO9 Neighbourhood design results in a connected network of walkable streets providing an easy choice of routes within and surrounding the neighbourhood.</p>	<p>AO9.1 Development does not establish cul-de-sac streets unless: (a) cul-de-sacs are a feature of the existing pattern of development in the area; (b) there is a physical feature or incompatible zone change that dictates the need to use a cul-de-sac streets.</p> <p>AO9.2 Where a cul-de-sac street is used, it: (a) is designed to be no longer than 150 metres in length; (b) is designed so that the end of the cul-de-sac is visible from its entrance; (c) provides connections from the top of the cul-de-sac to other streets for pedestrians and cyclists, where appropriate.</p> <p>AO9.3 No more than 6 lots have access to the turning circle or turning-tee at the end of a cul-de-sac street.</p>	<p>Not applicable.</p>
<p>PO10 Neighbourhood design supports diverse housing choices through block sizes and lot design. In developing areas, significant changes in lot size and frontage occur at the rear of lots rather than on opposite sides of a street.</p>	<p>PO10 No acceptable outcomes are prescribed.</p>	<p>Not applicable.</p>



Performance outcomes	Acceptable outcomes	Applicant response
PO11 Provision of physical and social infrastructure in developing residential neighbourhoods is facilitated through the orderly and sequential development of land. Note - Part 4 – Local government infrastructure plan may identify specific levels of infrastructure to be provided within development sites.	AO11.1 New development adjoins adjacent existing or approved urban development. AO11.2 New development is not established beyond the identified Local government infrastructure plan area.	Not applicable.
Urban parkland and environmental open space		
PO12 Where appropriate development maintains and enhances public access and use of natural areas, rivers, dams, creeks and the foreshore.	AO12 No acceptable outcomes are prescribed.	Not applicable.
PO13 Development provides land to: (a) meet the recreation needs of the community; (b) provide an amenity commensurate with the structure of neighbourhoods and land uses in the vicinity; and adjacent to open space areas; (c) provide for green corridors and linkages.	AO13 No acceptable outcomes are prescribed. Note - Part 4 – Priority infrastructure plan and Planning scheme policy SC14 – Structure Plans provides guidance in providing open space and recreation land.	Not applicable.

AO14

Lot size, dimensions, frontage and orientation permits buildings to be established that will facilitate casual surveillance to urban parkland and environmental open space.

AO14.1

Urban parkland is regular in shape.

AO14.2

At least 75% of the urban parkland's frontage is provided as road.

AO14.3

Urban parkland and environmental open space areas are positioned to be capable of being overlooked by surrounding development.

AO14.4

Surrounding lots are orientated so that facades will front and overlook the urban parkland and environmental open space.

AO14.5



The number of lots that back onto, or are side-orientated to the urban parkland and environmental open space is minimised.



Inconsistent design solution - low total number of lots complying with the acceptable outcomes.

Not applicable.



Performance outcomes	Acceptable outcomes	
	 <p>  Lots orientated to front and overlook park to provide casual surveillance. Consistent design solution - high total number of lots complying with the acceptable outcomes. </p>	
Private subdivisions (gated communities)		
PO15 Private subdivisions (gated communities) do not compromise the establishment of connected and integrated infrastructure and open space networks.	PO15 No acceptable outcomes are prescribed.	Complies with PO15. The site has a demonstrated internal cycle and pedestrian connection and does not compromise established open space networks.
Additional requirements for reconfiguration involving the creation of public streets or roads		
PO16 The function of new roads is clearly identified and legible and provides integration, safety and convenience for all users.	AO16 No acceptable outcomes are prescribed. Note - The design and construction standards are set out in Planning scheme policy SC5 – FNQROC Regional Development Manual, with reference to the specifications set out in Sections D1 and D3.	Not applicable.
PO17 Street design supports an urban form that creates walkable neighbourhoods. Street design: <ul style="list-style-type: none"> (a) is appropriate to the function(s) of the street; (b) meets the needs of users and gives priority to the needs of vulnerable users. 	AO17 No acceptable outcomes are prescribed.	Not applicable.



Public transport network		
PO18 Development provides a street pattern that caters for the extension of public transport routes and infrastructure including safe pedestrian pick-up and set-down up facilities.	AO18 No acceptable outcomes are prescribed.	Not applicable.
Pest plants		
PO19 Development activities and sites provide for the removal of all pest plants and implement ongoing measures to ensure that pest plants do not reinfest the site or nearby sites. Editor's note - This does not remove or replace all land owner's obligations or responsibilities under the Land Protection (Pest and Stock Route Management) Act 2002.	AO19 Pest plants detected on a development site are removed in accordance with a management plan prepared by an appropriately qualified person prior to earthworks commencing. Note - A declaration from an appropriately qualified person validates the land being free from pest plants. Declared pest plants include locally declared and State declared pest plants.	The proposal can be conditioned to comply with AO19.

Attachment 12

Assessment against SDAP Provisions




DEVELOPMENT & PROPERTY SERVICES

State code 1: Development in a state-controlled road environment

Table 1.1 Development in general

Performance outcomes	Acceptable outcomes	Response
Buildings, structures, infrastructure, services and utilities		
PO1 The location of the development does not create a safety hazard for users of the state-controlled road .	AO1.1 Development is not located in a state-controlled road . AND AO1.2 Development can be maintained without requiring access to a state-controlled road .	Complies with AO 1.1 and AO 1.2 Development is not located in a State-Controlled Road and can be maintained without access to the state-controlled road. The Development fronts and in accessed from the Davidson Street service road which is adjacent the State Controlled Port Douglas Road/Davidson Street.
PO2 The design and construction of the development does not adversely impact the structural integrity or physical condition of the state-controlled road or road transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO2. The construction of the development will have no impact on the structural integrity of physical condition of the state-controlled road. The Development fronts and in accessed from the Davidson Street service road which is adjacent the State Controlled Port Douglas Road/Davidson Street.
PO3 The location of the development does not obstruct road transport infrastructure or adversely impact the operating performance of the state-controlled road .	No acceptable outcome is prescribed.	Complies with PO3.

Performance outcomes	Acceptable outcomes	Response
		<p>The location of the development does not obstruct road transport infrastructure or impact the performance of the state-controlled road.</p> <p>The Development fronts and is accessed from the Davidson Street service road which is adjacent the State Controlled Port Douglas Road/Davidson Street.</p>
PO4 The location, placement, design and operation of advertising devices, visible from the state-controlled road , do not create a safety hazard for users of the state-controlled road .	No acceptable outcome is prescribed.	<p>Complies with PO4.</p> <p>There are no advertising devices proposed. If required, they will form part of a subsequent application.</p>
PO5 The design and construction of buildings and structures does not create a safety hazard by distracting users of the state-controlled road .	<p>AO5.1 Facades of buildings and structures fronting the state-controlled road are made of non-reflective materials.</p> <p>AND</p> <p>AO5.2 Facades of buildings and structures do not direct or reflect point light sources into the face of oncoming traffic on the state-controlled road.</p> <p>AND</p> <p>AO5.3 External lighting of buildings and structures is not directed into the face of oncoming traffic on the state-controlled road.</p> <p>AND</p> <p>AO5.4 External lighting of buildings and structures does not involve flashing or laser lights.</p>	<p>Complies with AO5.1 – AO5.4</p> <p>Facades of the buildings and structures fronting the state-controlled road are made of non-reflective material and screened by extensive landscaping.</p> <p>The finishes are detailed in Attachment 3 and generally consist of the following-</p> 

Performance outcomes	Acceptable outcomes	Response
PO6 Road, pedestrian and bikeway bridges over a state-controlled road are designed and constructed to prevent projectiles from being thrown onto the state-controlled road .	AO6.1 Road, pedestrian and bikeway bridges over the state-controlled road include throw protection screens in accordance with section 4.11 of the Design Criteria for Bridges and Other Structures Manual, Department of Transport and Main Roads, 2020.	Not applicable.
Landscaping		
PO7 The location of landscaping does not create a safety hazard for users of the state-controlled road .	AO7.1 Landscaping is not located in a state-controlled road . AND AO7.2 Landscaping can be maintained without requiring access to a state-controlled road . AND AO7.3 Landscaping does not block or obscure the sight lines for vehicular access to a state-controlled road .	Complies with AO7.1 – AO 7.3 Landscaping is proposed within the site boundary. A landscaping plan is provided at Attachment 3. Additionally, the development fronts the Davidson Street service road not Davidson Street.
Stormwater and overland flow		
PO8 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of the state-controlled road .	No acceptable outcome is prescribed.	Complies with PO8. Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of the state-controlled road. The flood modelling concludes that base on a 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas there is no worsening effect on surrounding properties of the State Controlled road. A supporting civil engineering report is provided as Attachment 5. A detailed flood study is provided at

Performance outcomes	Acceptable outcomes	Response
		Attachment 8. The Site's hydraulic design is provided at Attachment 9.
PO9 Stormwater run-off or overland flow from the development site does not result in a material worsening of the operating performance of the state-controlled road or road transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO9.</p> <p>The flood modelling concludes that base on a 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas there is no worsening effect on surrounding properties of the State Controlled road.</p> <p>A supporting civil engineering report is provided as Attachment 5. A detailed flood study is provided at Attachment 8. The Site's hydraulic design is provided at Attachment 9.</p>
PO10 Stormwater run-off or overland flow from the development site does not adversely impact the structural integrity or physical condition of the state-controlled road or road transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO10.</p> <p>The flood modelling concludes that base on a 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas there is no worsening effect on surrounding properties of the State Controlled road.</p> <p>A supporting civil engineering report is provided as Attachment 5. A detailed flood study is provided at Attachment 8. The Site's hydraulic design is provided at Attachment 9.</p>
PO11 Development ensures that stormwater is lawfully discharged.	<p>AO11.1 Development does not create any new points of discharge to a state-controlled road.</p> <p>AND</p> <p>AO11.2 Development does not concentrate flows to a state-controlled road.</p> <p>AND</p>	<p>Complies with AO11.1 – 11.4.</p> <p>The lawful point of discharge is to the rear of the site.</p> <p>A supporting civil engineering report is provided as Attachment 5. The Site's hydraulic design is provided at Attachment 9.</p>

Performance outcomes	Acceptable outcomes	Response
	<p>AO11.3 Stormwater run-off is discharged to a lawful point of discharge.</p> <p>AND</p> <p>AO11.4 Development does not worsen the condition of an existing lawful point of discharge to the state-controlled road.</p>	
Flooding		
PO12 Development does not result in a material worsening of flooding impacts within a state-controlled road .	<p>AO12.1 For all flood events up to 1% annual exceedance probability, development results in negligible impacts (within +/- 10mm) to existing flood levels within a state-controlled road.</p> <p>AND</p> <p>AO12.2 For all flood events up to 1% annual exceedance probability, development results in negligible impacts (up to a 10% increase) to existing peak velocities within a state-controlled road.</p> <p>AND</p> <p>AO12.3 For all flood events up to 1% annual exceedance probability, development results in negligible impacts (up to a 10% increase) to existing time of submergence of a state-controlled road.</p>	<p>Complies with AO12.1 -12.3</p> <p>The flood modelling concludes that base on a 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas there is no worsening effect on surrounding properties of the State Controlled road.</p> <p>A supporting civil engineering report is provided as Attachment 5. A detailed flood study is provided at Attachment 8. The Site's hydraulic design is provided at Attachment 9.</p>
Drainage Infrastructure		
PO13 Drainage infrastructure does not create a safety hazard for users in the state-controlled road .	AO13.1 Drainage infrastructure is wholly contained within the development site, except at the lawful point of discharge .	<p>Complies with AO13.1 and 13.2.</p> <p>Drainage infrastructure is wholly contained within the site and can be maintained without access to</p>

Performance outcomes	Acceptable outcomes	Response
	<p>AND</p> <p>AO13.2 Drainage infrastructure can be maintained without requiring access to a state-controlled road.</p>	<p>the State Controlled Road. The lawful point of discharge is to the rear of the site and the site fronts the Davidson Street service road only.</p> <p>A supporting civil engineering report is provided as Attachment 5.</p>
PO14 Drainage infrastructure associated with, or within, a state-controlled road is constructed, and designed to ensure the structural integrity and physical condition of existing drainage infrastructure and the surrounding drainage network.	No acceptable outcome is prescribed.	<p>Complies with PO14.</p> <p>No drainage infrastructure is proposed that is associated with or constructed in the State Controlled Road.</p> <p>A supporting civil engineering report is provided as Attachment 5.</p>

Table 1.2 Vehicular access, road layout and local roads

Performance outcomes	Acceptable outcomes	Response
Vehicular access to a state-controlled road or within 100 metres of a state-controlled road intersection		
PO15 The location, design and operation of a new or changed access to a state-controlled road does not compromise the safety of users of the state-controlled road .	No acceptable outcome is prescribed.	<p>Complies with PO15.</p> <p>The development fronts Davidson Street (service road) which accessed the State-controlled Port Douglas Road/Davidson Street from the Crimmins Street and Port Street intersections.</p> <p>The existing development has three (3) separate access locations to Davidson Street (service road).</p> <p>The proposed development consolidates a single ingress and egress to Davidson Street (service road) central to the site. Servicing is also provided from Crimmins Street.</p>

Performance outcomes	Acceptable outcomes	Response
		<p>Davidson Street (service road) is a straight road with a low speed environment and no impediments to site lines.</p> <p>The proposed new access locations are approximately 90m to the closest intersection with Crimmins Street.</p> <p>Additionally, the Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
<p>PO16 The location, design and operation of a new or changed access does not adversely impact the functional requirements of the state-controlled road.</p>	<p>No acceptable outcome is prescribed.</p>	<p>Complies with PO16.</p> <p>The development fronts Davidson Street (service road) which accessed the State-controlled Port Douglas Road/Davidson Street from the Crimmins Street and Port Street intersections.</p> <p>The existing development has three (3) separate access locations to Davidson Street (service road).</p> <p>The proposed development consolidates a single ingress and egress to Davidson Street (service road) central to the site. Servicing is also provided from Crimmins Street.</p>

Performance outcomes	Acceptable outcomes	Response
		<p>Davidson Street (service road) is a straight road with a low speed environment and no impediments to site lines.</p> <p>The proposed new access locations are approximately 90m to the closest intersection with Crimmins Street.</p> <p>Additionally, the Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
PO17 The location, design and operation of a new or changed access is consistent with the future intent of the state-controlled road .	No acceptable outcome is prescribed.	<p>Complies with PO17.</p> <p>There are no known changes to the future intent of Davidson Street.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
PO18 New or changed access is consistent with the access for the relevant limited access road policy : <ol style="list-style-type: none"> LAR 1 where direct access is prohibited; or LAR 2 where access may be permitted, subject to assessment. 	No acceptable outcome is prescribed.	Not applicable.
PO19 New or changed access to a local road within 100 metres of an intersection with a state-	No acceptable outcome is prescribed.	Complies with PO19.

Performance outcomes	Acceptable outcomes	Response
controlled road does not compromise the safety of users of the state-controlled road .		<p>The proposed new access is just within 100m of the intersection with a State Controlled Road. The proposed new access locations are approximately 90m to the closest intersection with Crimmins Street.</p> <p>The Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
PO20 New or changed access to a local road within 100 metres of an intersection with a state-controlled road does not adversely impact on the operating performance of the intersection.	No acceptable outcome is prescribed.	<p>Complies with PO20.</p> <p>The proposed new access is just within 100m of the intersection with a State Controlled Road. The proposed new access locations are approximately 90m to the closest intersection with Crimmins Street.</p> <p>The Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>

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Performance outcomes	Acceptable outcomes	Response
Public passenger transport and active transport		
PO21 Development does not compromise the safety of users of public passenger transport infrastructure, public passenger services and active transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO21. There is no impact on or changes to public passenger transport infrastructure, public passenger services and active transport infrastructure.
PO22 Development maintains the ability for people to access public passenger transport infrastructure, public passenger services and active transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO22. There is no impact on or changes to public passenger transport infrastructure, public passenger services and active transport infrastructure.
PO23 Development does not adversely impact the operating performance of public passenger transport infrastructure, public passenger services and active transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO23. There is no impact on or changes to public passenger transport infrastructure, public passenger services and active transport infrastructure.
PO24 Development does not adversely impact the structural integrity or physical condition of public passenger transport infrastructure and active transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO24. There is no impact on or changes to public passenger transport infrastructure, public passenger services and active transport infrastructure.

Table 1.3 Network impacts

Performance outcomes	Acceptable outcomes	Response
PO25 Development does not compromise the safety of users of the state-controlled road network .	No acceptable outcome is prescribed.	Complies with PO25. This proposal is a redevelopment of an existing and operational tourism accommodation venture.

Performance outcomes	Acceptable outcomes	Response
		<p>The Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
PO26 Development ensures no net worsening of the operating performance of the state-controlled road network.	No acceptable outcome is prescribed.	<p>Complies with PO26.</p> <p>This proposal is a redevelopment of an existing and operational tourism accommodation venture.</p> <p>The Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
PO27 Traffic movements are not directed onto a state-controlled road where they can be accommodated on the local road network.	No acceptable outcome is prescribed.	<p>Complies with PO27.</p> <p>The Development fronts and in accessed from the Davidson Street service road which is adjacent the State Controlled Port Douglas Road/Davidson Street.</p>

Performance outcomes	Acceptable outcomes	Response
		<p>The traffic movements generated by the proposed development are consistent with the existing onsite development.</p> <p>Servicing and access is also provided from Crimmins Street which forms part of the local road network.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
PO28 Development involving haulage exceeding 10,000 tonnes per year does not adversely impact the pavement of a state-controlled road .	No acceptable outcome is prescribed.	Not applicable.
PO29 Development does not impede delivery of planned upgrades of state-controlled roads .	No acceptable outcome is prescribed.	<p>Complies with PO29.</p> <p>There are no known planned upgrades of Davidson Street.</p>
PO30 Development does not impede delivery of corridor improvements located entirely within the state-controlled road corridor .	No acceptable outcome is prescribed.	<p>Complies with PO30.</p> <p>There are no known planned upgrades of Davidson Street.</p>

Table 1.4 Filling, excavation, building foundations and retaining structures

Performance outcomes	Acceptable outcomes	Response
PO31 Development does not create a safety hazard for users of the state-controlled road or road transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO31.</p> <p>The proposed development fronts the service road which is adjacent the primary State controlled road.</p> <p>A supporting Civil Engineering Report is provided as Attachment 5.</p>

Performance outcomes	Acceptable outcomes	Response
PO32 Development does not adversely impact the operating performance of the state-controlled road .	No acceptable outcome is prescribed.	<p>Complies with PO32.</p> <p>The proposed development fronts the service road which is adjacent the primary State controlled road.</p> <p>A supporting Civil Engineering Report is provided as Attachment 5.</p>
PO33 Development does not undermine, damage or cause subsidence of a state-controlled road .	No acceptable outcome is prescribed.	<p>Complies with PO33.</p> <p>The proposed development fronts the service road which is adjacent the primary State controlled road.</p> <p>A supporting Civil Engineering Report is provided as Attachment 5. This is further supported by a Geotechnical Assessment provided at Attachment 7.</p>
PO34 Development does not cause ground water disturbance in a state-controlled road .	No acceptable outcome is prescribed.	<p>Complies with PO34.</p> <p>The proposed development fronts the service road which is adjacent the primary State controlled road.</p> <p>A supporting Civil Engineering Report is provided as Attachment 5. This is further supported by a Geotechnical Assessment provided at Attachment 7.</p>
PO35 Excavation, boring, piling, blasting and fill compaction do not adversely impact the physical condition or structural integrity of a state-controlled road or road transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO35.</p> <p>The proposed development fronts the service road which is adjacent the primary State controlled road.</p> <p>A supporting Civil Engineering Report is provided as Attachment 5. This is further</p>

Performance outcomes	Acceptable outcomes	Response
		supported by a Geotechnical Assessment provided at Attachment 7.
PO36 Filling and excavation associated with the construction of new or changed access do not compromise the operation or capacity of existing drainage infrastructure for a state-controlled road .	No acceptable outcome is prescribed.	<p>Complies with PO36.</p> <p>The proposed development fronts the service road which is adjacent the primary State controlled road. Limited filling and excavation are required for the construction of the changed access.</p> <p>A supporting Civil Engineering Report is provided as Attachment 5. This is further supported by a Geotechnical Assessment provided at Attachment 7.</p>

Table 1.5 Environmental emissions

Statutory note: Where a **state-controlled road** is co-located in the same transport corridor as a railway, the development should instead comply with Environmental emissions in State code 2: Development in a railway environment.

Performance outcomes	Acceptable outcomes	Response
Reconfiguring a lot		
Involving the creation of 5 or fewer new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor		
PO37 Development minimises free field noise intrusion from a state-controlled road .	<p>AO37.1 Development provides a noise barrier or earth mound which is designed, sited and constructed:</p> <ol style="list-style-type: none"> 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: <ol style="list-style-type: none"> a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; 	Not Applicable.

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Performance outcomes	Acceptable outcomes	Response
	<p>c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020.</p> <p>OR</p> <p>AO37.2 Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.</p> <p>OR</p> <p>AO37.3 Development provides a solid gap-free fence or other solid gap-free structure along the full extent of the boundary closest to the state-controlled road.</p>	
Involving the creation of 6 or more new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor		
PO38 Reconfiguring a lot minimises free field noise intrusion from a state-controlled road .	<p>AO38.1 Development provides noise barrier or earth mound which is designed, sited and constructed:</p> <ol style="list-style-type: none"> 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: <ol style="list-style-type: none"> a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. 	<p>Complies with PO38.</p> <p>The Development adopts a built design response to achieving the field acoustic levels as a mound is not practical.</p> <p>In addition, Davidson Street functions as a local road network despite being a state-controlled road.</p> <p>There are no other examples of noise barriers or earth mounds for residential or tourist development fronting Davidson Street.</p>

Performance outcomes	Acceptable outcomes	Response
	<p>OR</p> <p>AO38.2 Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.</p>	
Material change of use (accommodation activity)		
Ground floor level requirements adjacent to a state-controlled road or type 1 multi-modal corridor		
PO39 Development minimises noise intrusion from a state-controlled road in private open space .	<p>AO39.1 Development provides a noise barrier or earth mound which is designed, sited and constructed:</p> <ol style="list-style-type: none"> 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for private open space at the ground floor level; 2. in accordance with: <ol style="list-style-type: none"> a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. <p>OR</p> <p>AO39.2 Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for private open space by alternative noise</p>	<p>Complies with PO39.</p> <p>The Development adopts a built design response to achieving the field acoustic levels as a mound is not practical.</p> <p>In addition, Davidson Street functions as a local road network despite being a state-controlled road.</p> <p>There are no other examples of noise barriers or earth mounds for residential or tourist development fronting Davidson Street.</p>

Performance outcomes	Acceptable outcomes	Response
	attenuation measures where it is not practical to provide a noise barrier or earth mound.	
PO40 Development (excluding a relevant residential building or relocated building) minimises noise intrusion from a state-controlled road in habitable rooms at the facade.	<p>AO40.1 Development (excluding a relevant residential building or relocated building) provides a noise barrier or earth mound which is designed, sited and constructed:</p> <ol style="list-style-type: none"> 1. to achieve the maximum building façade acoustic level in reference table 1 (item 1.1) for habitable rooms; 2. in accordance with: <ol style="list-style-type: none"> a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. <p>OR</p> <p>AO40.2 Development (excluding a relevant residential building or relocated building) achieves the maximum building façade acoustic level in reference table 1 (item 1.1) for habitable rooms by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.</p>	<p>Complies with PO40.</p> <p>The Development adopts a built design response to achieving the field acoustic levels as a mound is not practical.</p> <p>In addition, Davidson Street functions as a local road network despite being a state-controlled road.</p> <p>There are no other examples of noise barriers or earth mounds for residential or tourist development fronting Davidson Street.</p>
PO41 Habitable rooms (excluding a relevant residential building or relocated building) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	<p>Complies with PO41.</p> <p>Habitable rooms will be designed to achieve appropriate internal acoustic levels</p>

Performance outcomes	Acceptable outcomes	Response
Above ground floor level requirements (accommodation activity) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO42 Balconies, podiums, and roof decks include: <ol style="list-style-type: none"> 1. a continuous solid gap-free structure or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums, and roof decks. 	No acceptable outcome is provided.	<p>Complies with PO42.</p> <p>The Development adopts a built design response to achieving the field acoustic levels as a mound is not practical.</p> <p>In addition, Davidson Street functions as a local road network despite being a state-controlled road.</p>
PO43 Habitable rooms (excluding a relevant residential building or relocated building) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	<p>Complies with PO43.</p> <p>Habitable rooms will be designed to achieve appropriate internal acoustic levels</p>
Material change of use (other uses)		
Ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO44 Development: <ol style="list-style-type: none"> 1. provides a noise barrier or earth mound that is designed, sited and constructed: <ol style="list-style-type: none"> a. to achieve the maximum free field acoustic level in reference table 2 (item 2.3) for all outdoor education areas and outdoor play areas; b. in accordance with: <ol style="list-style-type: none"> i. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; ii. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; 	No acceptable outcome is provided.	Not applicable.

Performance outcomes	Acceptable outcomes	Response
<ul style="list-style-type: none"> iii. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 2. achieves the maximum free field acoustic level in reference table 2 (item 2.3) for all outdoor education areas and outdoor play areas by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound. 		
<p>PO45 Development involving a childcare centre or educational establishment:</p> <ul style="list-style-type: none"> 1. provides a noise barrier or earth mound that is designed, sited and constructed: 2. to achieve the maximum building facade acoustic level in reference table 1 (item 1.2); 3. in accordance with: <ul style="list-style-type: none"> a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 4. achieves the maximum building facade acoustic level in reference table 1 (item 1.2) by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound. 	No acceptable outcome is provided.	Not applicable.
PO46 Development involving:	No acceptable outcome is provided.	Not applicable.

Performance outcomes	Acceptable outcomes	Response
<ol style="list-style-type: none"> 1. indoor education areas and indoor play areas; or 2. sleeping rooms in a childcare centre; or 3. patient care areas in a hospital achieves the maximum internal acoustic level in reference table 3 (items 3.2-3.4). 		
Above ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a state-controlled road or type 1 multi-modal corridor		
PO47 Development involving a childcare centre or educational establishment which have balconies, podiums or elevated outdoor play areas predicted to exceed the maximum free field acoustic level in reference table 2 (item 2.3) due to noise from a state-controlled road are provided with: <ol style="list-style-type: none"> 1. a continuous solid gap-free structure or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies or elevated outdoor play areas. 	No acceptable outcome is provided.	Not applicable.
PO48 Development including: <ol style="list-style-type: none"> 1. indoor education areas and indoor play areas in a childcare centre or educational establishment; or 2. sleeping rooms in a childcare centre; or 3. patient care areas in a hospital located above ground level, is designed and constructed to achieve the maximum internal acoustic level in reference table 3 (items 3.2-3.4). 	No acceptable outcome is provided.	Not applicable.
Air, light and vibration		

Performance outcomes	Acceptable outcomes	Response
PO49 Private open space, outdoor education areas and outdoor play areas are protected from air quality impacts from a state-controlled road .	AO49.1 Each dwelling or unit has access to a private open space which is shielded from a state-controlled road by a building, solid gap-free fence , or other solid gap-free structure . OR AO49.2 Each outdoor education area and outdoor play area is shielded from a state-controlled road by a building, solid gap-free fence , or other solid gap-free structure .	Not applicable.
PO50 Patient care areas within hospitals are protected from vibration impacts from a state-controlled road or type 1 multi-modal corridor .	AO50.1 Hospitals are designed and constructed to ensure vibration in the patient treatment area does not exceed a vibration dose value of $0.1\text{m/s}^{1.75}$. AND AO50.2 Hospitals are designed and constructed to ensure vibration in the ward of a patient care area does not exceed a vibration dose value of $0.4\text{m/s}^{1.75}$.	Not applicable.
PO51 Development is designed and sited to ensure light from infrastructure within, and from users of, a state-controlled road or type 1 multi-modal corridor , does not: <ol style="list-style-type: none"> 1. intrude into buildings during night hours (10pm to 6am); 2. create unreasonable disturbance during evening hours (6pm to 10pm). 	No acceptable outcomes are prescribed.	Not applicable.

Table 1.6: Development in a future state-controlled road environment

Performance outcomes	Acceptable outcomes	Response
PO52 Development does not impede delivery of a future state-controlled road .	<p>AO52.1 Development is not located in a future state-controlled road.</p> <p>OR ALL OF THE FOLLOWING APPLY:</p> <p>AO52.2 Development does not involve filling and excavation of, or material changes to, a future state-controlled road.</p> <p>AND</p> <p>AO52.3 The intensification of lots does not occur within a future state-controlled road.</p> <p>AND</p> <p>AO52.4 Development does not result in the landlocking of parcels once a future state-controlled road is delivered.</p>	Not applicable.
PO53 The location and design of new or changed access does not create a safety hazard for users of a future state-controlled road .	AO53.1 Development does not include new or changed access to a future state-controlled road .	Not applicable.
PO54 Filling, excavation, building foundations and retaining structures do not undermine, damage or cause subsidence of a future state-controlled road .	No acceptable outcome is prescribed.	Not applicable.
PO55 Development does not result in a material worsening of stormwater, flooding, overland flow or drainage impacts in a future state-controlled road or road transport infrastructure .	No acceptable outcome is prescribed.	Not applicable.
PO56 Development ensures that stormwater is lawfully discharged.	AO56.1 Development does not create any new points of discharge to a future state-controlled road .	Not applicable.

Performance outcomes	Acceptable outcomes	Response
	<p>AND</p> <p>AO56.2 Development does not concentrate flows to a future state-controlled road.</p> <p>AND</p> <p>AO56.3 Stormwater run-off is discharged to a lawful point of discharge.</p> <p>AND</p> <p>AO56.4 Development does not worsen the condition of an existing lawful point of discharge to the future state-controlled road.</p>	

State code 6: Protection of state transport networks

Table 6.2 Development in general

Performance outcomes	Acceptable outcomes	Response
Network impacts		
PO1 Development does not compromise the safety of users of the state-controlled road network.	No acceptable outcome is prescribed.	<p>Complies with PO1.</p> <p>The development fronts Davidson Street (service road) which accessed the State-controlled Port Douglas Road/Davidson Street from the Crimmins Street and Port Street intersections.</p> <p>The existing development has three (3) separate access locations to Davidson Street (service road).</p> <p>The proposed development consolidates a single ingress and egress to Davidson Street (service road) central to the site. Servicing is also provided from Crimmins Street.</p> <p>Davidson Street (service road) is a straight road with a low speed environment and no impediments to site lines.</p> <p>The proposed new access locations are approximately 90m to the closest intersection with Crimmins Street.</p> <p>Additionally, the Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by</p>

Performance outcomes	Acceptable outcomes	Response
		<p>the existing businesses currently operating from these lots.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
PO2 Development does not adversely impact the structural integrity or physical condition of a state-controlled road or road transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO2.</p> <p>The proposed development fronts the service road which is adjacent the primary State controlled road.</p> <p>A supporting Civil Engineering Report is provided as Attachment 5. This is further supported by a Geotechnical Assessment provided at Attachment 7.</p>
PO3 Development ensures no net worsening of the operating performance the state-controlled road network.	No acceptable outcome is prescribed.	<p>Complies with PO3.</p> <p>This proposal is a redevelopment of an existing and operational tourism accommodation venture.</p> <p>The Traffic Impact Assessment concludes the increase in estimate equivalent persons generated by the proposed development is negligible compared to the estimated equivalent persons generated by the existing businesses currently operating from these lots.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
PO4 Traffic movements are not directed onto a state-controlled road where they can be accommodated on the local road network.	No acceptable outcome is prescribed.	<p>Complies with PO4.</p> <p>The Development fronts and is accessed from the Davidson Street service road which is adjacent the State Controlled Port Douglas Road/Davidson Street.</p>

Performance outcomes	Acceptable outcomes	Response
		<p>The traffic movements generated by the proposed development are consistent with the existing onsite development.</p> <p>Servicing and access is also provided from Crimmins Street which forms part of the local road network.</p> <p>A detailed Traffic Impact Assessment is provided as Attachment 6. Civil Design is provided as Attachment 5.</p>
PO5 Development involving haulage exceeding 10,000 tonnes per year does not damage the pavement of a state-controlled road .	No acceptable outcome is prescribed.	Not applicable.
PO6 Development does not require a new railway level crossing.	No acceptable outcome is prescribed.	Not applicable.
PO7 Development does not adversely impact the operating performance of an existing railway crossing .	No acceptable outcome is prescribed.	Not applicable.
PO8 Development does not adversely impact on the safety of an existing railway crossing .	No acceptable outcome is prescribed.	Not applicable.
PO9 Development is designed and constructed to allow for on-site circulation to ensure vehicles do not queue in a railway crossing .	No acceptable outcome is prescribed.	Not applicable.
PO10 Development does not create a safety hazard within the railway corridor .	No acceptable outcome is prescribed.	Not applicable.
PO11 Development does not adversely impact the operating performance of the railway corridor .	No acceptable outcome is prescribed.	Not applicable.
PO12 Development does not interfere with or obstruct the railway transport infrastructure or other rail infrastructure .	No acceptable outcome is prescribed.	Not applicable.
PO13 Development does not adversely impact the structural integrity or physical condition of a railway corridor or rail transport infrastructure .	No acceptable outcome is prescribed.	Not applicable.
Stormwater and overland flow		
PO14 Stormwater run-off or overland flow from the development site does not create or	No acceptable outcome is prescribed.	Complies with PO14.

Performance outcomes	Acceptable outcomes	Response
exacerbate a safety hazard for users of a state transport corridor or state transport infrastructure .		<p>Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of the state-controlled road.</p> <p>The flood modelling concludes that base on a 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas there is no worsening effect on surrounding properties of the State Controlled road.</p> <p>A supporting civil engineering report is provided as Attachment 5. A detailed flood study is provided at Attachment 8. The Site's hydraulic design is provided at Attachment 9.</p>
PO15 Stormwater run-off or overland flow from the development site does not result in a material worsening of operating performance of a state transport corridor or state transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO15.</p> <p>Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of the state-controlled road.</p> <p>The flood modelling concludes that base on a 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas there is no worsening effect on surrounding properties of the State Controlled road.</p> <p>A supporting civil engineering report is provided as Attachment 5. A detailed flood study is provided at Attachment 8. The Site's hydraulic design is provided at Attachment 9.</p>
PO16 Stormwater run-off or overland flow from the development site does not interfere with the structural integrity or physical condition of the state transport corridor or state transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO16.</p> <p>The flood modelling concludes that base on a 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas there is no worsening effect on surrounding properties of the State Controlled road.</p>

Performance outcomes	Acceptable outcomes	Response
		A supporting civil engineering report is provided as Attachment 5. A detailed flood study is provided at Attachment 8. The Site's hydraulic design is provided at Attachment 9.
PO17 Development associated with a state-controlled road or road transport infrastructure ensures that stormwater is lawfully discharged.	<p>AO17.1 Development does not create any new points of discharge to a state transport corridor or state transport infrastructure.</p> <p>AND</p> <p>AO17.2 Development does not concentrate flows to a state transport corridor.</p> <p>AND</p> <p>AO17.3 Stormwater run-off is discharged to a lawful point of discharge.</p> <p>AND</p> <p>AO17.4 Development does not worsen the condition of an existing lawful point of discharge to a state transport corridor or state transport infrastructure.</p>	<p>Complies with AO17.1 – 17.4.</p> <p>The lawful point of discharge is to the rear of the site.</p> <p>A supporting civil engineering report is provided as Attachment 5. The Site's hydraulic design is provided at Attachment 9.</p>
Flooding		
PO18 Development does not result in a material worsening of flooding impacts within a state transport corridor or state transport infrastructure	<p><i>For a state-controlled road or road transport infrastructure, all of the following apply:</i></p> <p>AO18.1 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (within +/- 10mm) to existing flood levels within a state transport corridor.</p> <p>AND</p> <p>AO18.2 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (up to a 10%</p>	<p>Complies with AO18.1 – 18.3.</p> <p>The flood modelling concludes that base on a 1% AEP Design Event peak flood depth (m) for the 2100 climate case for Port Douglas there is no worsening effect on surrounding properties of the State Controlled road.</p> <p>A supporting civil engineering report is provided as Attachment 5. A detailed flood study is provided at Attachment 8. The Site's hydraulic design is provided at Attachment 9.</p>

Performance outcomes	Acceptable outcomes	Response
	<p>increase) to existing peak velocities within a state transport corridor.</p> <p>AND</p> <p>AO18.3 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (up to a 10% increase) to existing time of submergence of a state transport corridor.</p> <p><i>No acceptable outcome is prescribed for a railway corridor or rail transport infrastructure.</i></p>	
Drainage infrastructure		
PO19 Drainage infrastructure does not create a safety hazard in a state transport corridor .	<p><i>For a state-controlled road environment, both of the following apply:</i></p> <p>AO19.1 Drainage infrastructure associated with, or in a state-controlled road is wholly contained within the development site, except at the lawful point of discharge.</p> <p>AND</p> <p>AO19.2 Drainage infrastructure can be maintained without requiring access to a state transport corridor.</p> <p><i>For a railway environment both of the following apply:</i></p> <p>AO19.3 Drainage infrastructure associated with a railway corridor or rail transport infrastructure is wholly contained within the development site.</p> <p>AND</p>	<p>Complies with AO19.1 – 19.4.</p> <p>Drainage infrastructure is wholly contained within the site and can be maintained without access to the State Controlled Road. The lawful point of discharge is to the rear of the site and the site fronts the Davidson Street service road only.</p> <p>A supporting civil engineering report is provided as Attachment 5.</p>

Performance outcomes	Acceptable outcomes	Response
	AO19.4 Drainage infrastructure can be maintained without requiring access to a state transport corridor .	
PO20 Drainage infrastructure associated with, or in a state-controlled road or road transport infrastructure is constructed and designed to ensure the structural integrity and physical condition of existing drainage infrastructure and the surrounding drainage network is maintained.	No acceptable outcome is prescribed.	<p>Complies with PO20.</p> <p>No drainage infrastructure is proposed that is associated with or constructed in the State Controlled Road.</p> <p>A supporting civil engineering report is provided as Attachment 5.</p>
Planned upgrades		
PO21 Development does not impede delivery of planned upgrades of state transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO21.</p> <p>There are no known upgrades to Davidson Street.</p>

Table 6.3 Public passenger transport infrastructure and active transport

Performance outcomes	Acceptable outcomes	Response
PO22 Development does not damage or interfere with public passenger transport infrastructure, active transport infrastructure or public passenger services .	No acceptable outcome is prescribed.	<p>Complies with PO22.</p> <p>There is no impact on or changes to public passenger transport infrastructure, public passenger services and active transport infrastructure.</p>
PO23 Development does not compromise the safety of public passenger transport infrastructure, public passenger services and active transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO23.</p> <p>There is no impact on or changes to public passenger transport infrastructure, public passenger services and active transport infrastructure.</p>
PO24 Development does not adversely impact the operating performance of public passenger transport infrastructure, public passenger services and active transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO24.</p> <p>There is no impact on or changes to public passenger transport infrastructure, public</p>

Performance outcomes	Acceptable outcomes	Response
		passenger services and active transport infrastructure.
PO25 Development does not adversely impact the structural integrity or physical condition of public passenger transport infrastructure and active transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO25. There is no impact on or changes to public passenger transport infrastructure, public passenger services and active transport infrastructure.
PO26 Upgraded or new public passenger transport infrastructure and active transport infrastructure is provided to accommodate the demand for public passenger transport and active transport generated by the development.	No acceptable outcome is prescribed.	Not applicable.
PO27 Development is designed to ensure the location of public passenger transport infrastructure prioritises and enables efficient public passenger services .	No acceptable outcome is prescribed.	Not applicable.
PO28 Development enables the provision or extension of public passenger services, public passenger transport infrastructure and active transport infrastructure to the development and avoids creating indirect or inefficient routes for public passenger services .	No acceptable outcome is prescribed.	Not applicable.
PO29 New or modified road networks are designed to enable development to be serviced by public passenger services .	AO29.1 Roads catering for buses are arterial or sub-arterial roads , collector or their equivalent. AND AO29.2 Roads intended to accommodate buses are designed and constructed in accordance with: 1. Road Planning and Design Manual, 2nd Edition, Volume 3 – Guide to Road Design; Department of Transport and Main Roads; 2. Supplement to Austroads Guide to Road Design (Parts 3, 4-4C and 6), Department of Transport and Main Roads;	Not applicable.

Performance outcomes	Acceptable outcomes	Response
	<p>3. Austroads Guide to Road Design (Parts 3, 4-4C and 6);</p> <p>4. Austroads Design Vehicles and Turning Path Templates;</p> <p>5. Queensland Manual of Uniform Traffic Control Devices, Part 13: Local Area Traffic Management and AS 1742.13-2009 Manual of Uniform Traffic Control Devices – Local Area Traffic Management;</p> <p>AND</p> <p>AO29.3 Traffic calming devices are not installed on roads used for buses in accordance with section 2.3.2 Bus Route Infrastructure, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.</p>	
PO30 Development provides safe, direct and convenient access to existing and future public passenger transport infrastructure and active transport infrastructure .	No acceptable outcome is prescribed.	<p>Complies with PO30.</p> <p>The development will be serviced by access to the existing public passenger transport infrastructure and active transport infrastructure.</p>
PO31 On-site vehicular circulation ensures the safety of both public passenger transport services and pedestrians.	No acceptable outcome is prescribed.	Not applicable.
PO32 Taxi facilities are provided to accommodate the demand generated by the development.	No acceptable outcome is prescribed.	<p>Complies with PO32.</p> <p>There is a setdown area associated with the Hotel.</p>
PO33 Facilities are provided to accommodate the demand generated by the development for community transport services, courtesy transport services, and booked hire services other than taxis.	No acceptable outcome is prescribed.	<p>Complies with PO33.</p> <p>The site is well serviced by alternative transport options that are associated with most luxury hotel brands.</p>

Performance outcomes	Acceptable outcomes	Response
<p>PO34 Taxi facilities are located and designed to provide convenient, safe and equitable access for passengers.</p>	<p>AO34.1 A taxi facility is provided parallel to the kerb and adjacent to the main entrance.</p> <p>AND</p> <p>AO34.2 Taxi facilities are designed in accordance with:</p> <ol style="list-style-type: none"> 1. AS2890.5–1993 Parking facilities – on-street parking and AS1428.1–2009 Design for access and mobility – general requirements for access – new building work; 2. AS1742.11–1999 Parking controls – manual of uniform traffic control devices 3. AS/NZS 2890.6–2009 Parking facilities –off street parking for people with disabilities; 4. Disability standards for accessible public 5. transport 2002 made under section 31(1) of the Disability Discrimination Act 1992; 6. AS/NZS 1158.3.1 – Lighting for roads and public spaces, Part 3.1: Pedestrian area (category P) lighting – Performance and design requirements; 7. Chapter 7 Taxi Facilities, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015. 	<p>Complies with PO34.</p> <p>Taxi access is provided at the main foyer and is not required parallel to the kerb at the main entrance.</p>
<p>PO35 Educational establishments are designed to ensure the safe and efficient operation of public passenger services, pedestrian and cyclist access and active transport infrastructure.</p>	<p>AO35.1 Educational establishments are designed in accordance with the provisions of the Planning for Safe Transport Infrastructure at Schools, Department of Transport and Main Roads, 2011.</p>	<p>Not applicable.</p>