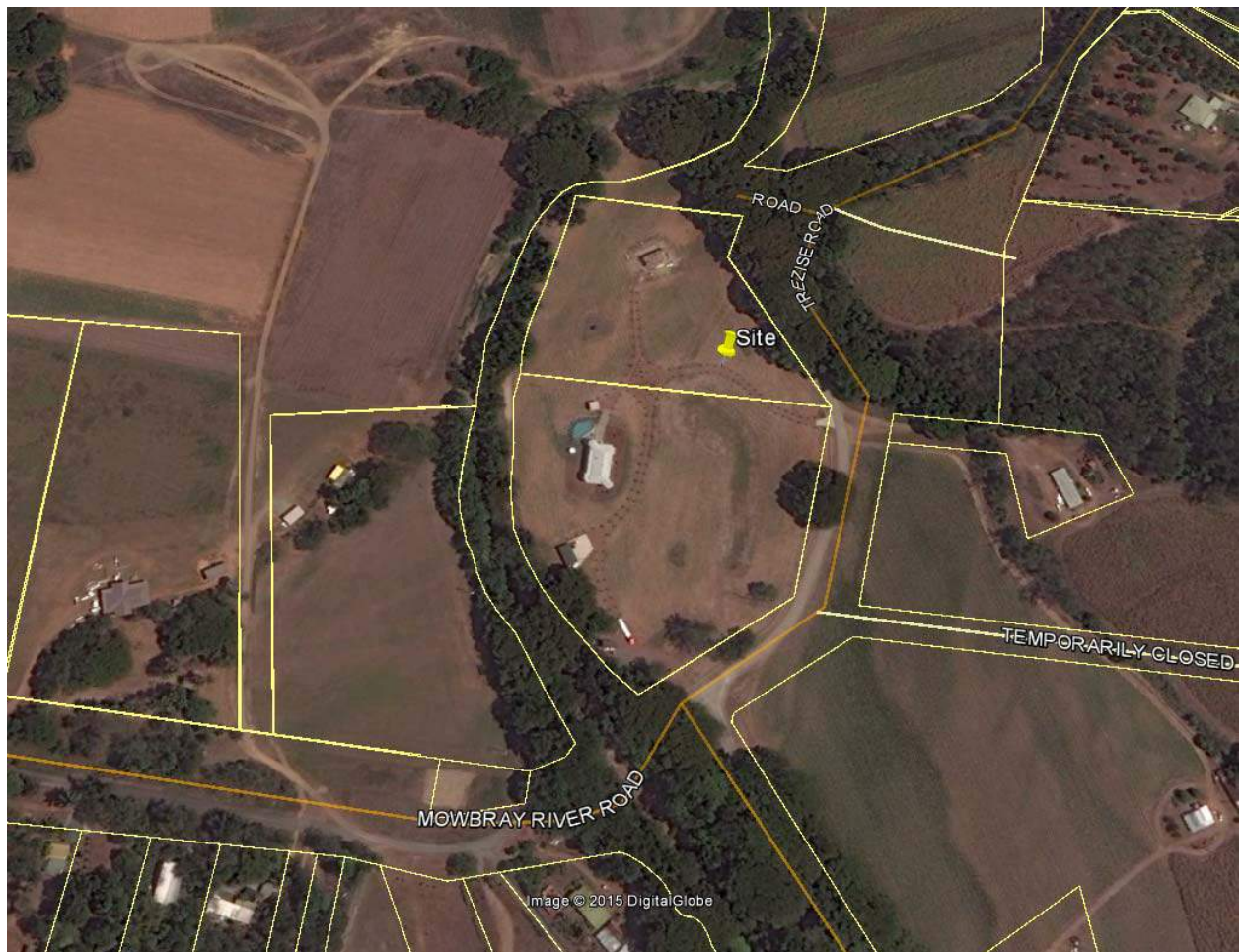


ORDINARY MEETING	
8 SEPTEMBER 2015	5.1

MATERIAL CHANGE OF USE (IMPACT ASSESSMENT) – UNDEFINED USE
(WEDDING & RECEPTION VENUE) – 188R TREZISE ROAD, MOWBRAY
Neil Beck: MCUI 723/2015: (449724)

<u>PROPOSAL:</u>	MATERIAL CHANGE OF USE (IMPACT ASSESSMENT) – UNDEFINED USE (WEDDING & RECEPTION VENUE)
<u>APPLICANT:</u>	JOHN & JOANNE WOOTTEN C/- BRAZIER MOTTI PTY LTD PO BOX 1185 CAIRNS QLD 4870
<u>LOCATION OF SITE:</u>	188R TREZISE ROAD, MOWBRAY
<u>PROPERTY:</u>	LOT 115 ON SP199697 & LOT 49 ON N157479
<u>LOCALITY:</u>	RURAL AREAS AND RURAL SETTLEMENTS
<u>PLANNING AREA:</u>	RURAL
<u>PLANNING SCHEME:</u>	DOUGLAS SHIRE PLANNING SCHEME 2008
<u>REFERRAL AGENCIES:</u>	NONE APPLICABLE
<u>NUMBER OF SUBMITTERS:</u>	SIX (6) CONSISTING OF FOUR (4) AGAINST AND TWO (2) IN SUPPORT
<u>STATUTORY ASSESSMENT DEADLINE:</u>	15 SEPTEMBER 2015
<u>APPLICATION DATE:</u>	26 MAY 2015
<u>APPENDIX:</u>	1. APPROVED PLAN(S) & DOCUMENT(S) 2. NOISE REPORT

LOCALITY PLAN



RECOMMENDATION:

That Council approves the development application for an Undefined Use (Wedding and Reception Venue) over land described as Lot 115 on SP199697 & Lot 49 on N157479, located at 188R Trezise Road, Mowbray, subject to the following:

APPROVED DRAWING(S) AND/OR DOCUMENT(S)

The term 'approved drawing(s) and/or document(s)' or other similar expression means:

Drawing or Document	Reference	Date
Proposed Wedding Ceremony & Reception Venue	Plan No. 33762/001 B	6 May 2015
Function Area (Maximum Capacity 150 People)	Plan No. 33762/002 A	8 May 2015

Assessment Manager Conditions

1. Carry out the approved development generally in accordance with the approved drawing(s) and/or document(s), and in accordance with:
 - a. The specifications, facts and circumstances as set out in the application submitted to Council; and
 - b. The following conditions of approval and the requirements of Council's Planning Scheme and the *FNQROC Development Manual*.

Except where modified by these conditions of approval

Timing of Effect

2. The conditions of the Development Permit must be effected prior to Commencement of Use, except where specified otherwise in these conditions of approval.

Relevant Period

3. A Relevant Period of 12 months applies to the Development Permit. Prior to the Development Permit lapsing, the Applicant must seek an extension to the Relevant Period. Supporting material to accompany the request must include the following:-
 1. The number of events held in the 12 month period;
 2. Number of persons in attendance at each event;
 3. The time the event ceased; and
 4. Noise readings measured 3 metres from the source of the noise (which must be a true and fair representation of the emanating noise levels).

When considering the request, Council will have regard to the supporting material provided in addition to the details of any complaints received during the previous 12 month period. Minor variations regarding hours of operation and maximum number of persons (to that which was originally applied for) maybe entertained in the request to extend the Relevant Period.

Limitation of Use

4. The Development Permit remains valid only while both Lot 115 & Lot 49 are made available to accommodate the approved use. In the event circumstances change that result in either lot not being available to accommodate or be used for the approved use, the Development Permit has no force or effect.

Approved Use

5. Approval is granted for the purpose of a Wedding and Reception Venue only. The use of the premises for other private functions, including, but not limited to:

- i. Dinners;
- ii. Birthday Parties;
- iii. Private Parties / Functions,

is not permitted.

Location of Events

6. The location of reception events must be undertaken generally in the northern portion of Lot 115 on SP199697 as detailed on Plan No. 33762/001 B dated 6 May 2015.

Management of Events

7. When hosting an event, the owners of the property must be present at all times to ensure conditions of the Development Permit & the Events Management Plan are complied with and that guests display an acceptable level of behaviour at all times.

Maximum Number of Persons & Events

8. The number of persons is limited to a group size of 120 persons on site at any one time with a maximum of 14 events being held in any one calendar year.

Transport

9. When taking enquiries / booking of the premises for larger events, the owners are to encourage the use of buses / coaches for the purpose of getting people to and from the premises. Such mode of transport would assist with minimising the amount of traffic on Tresize Road for scheduled events.

Hours of Operation

10. The hours of operation for the approved use is limited to 10.00am to 11.00pm daily at which time all persons must vacate the site. No persons are permitted to stay on and either reside or camp on the premises other than the accommodation of persons associated with the established land use of House on each allotment.

Sound Emissions

11. **Sound emitting from the site from entertainment, music or related activities must not exceed 90dB(C), fast response, when measured approximately 3 metres from the source of the noise up to 10.00pm. Between 10.00pm – 11.00pm, noise levels must not exceed 75dB(C), fast response.**
12. **Despite Condition 11 above, noise emanating from the site must not cause a noise nuisance in accordance with the Environmental Protection Act 1994 and the Environmental Protection Policy (Noise) 2008.**

Events Management Plan

13. **The applicant must submit an Events Management Plan for the approved events. The management plan must outline how events will be managed including, but not limited to, matters such as parking, lighting, ablutions, noise, waste, health, service of food and beverages and safety. The Events Management Plan must be submitted to the Chief Executive Officer prior to Commencement of Use. The Events Management Plan must be adhered to at all times during events.**

Ablution Facilities

14. **Sufficient toilets facilities with an adequate supply of toilet paper, potable water and soap must be provided for and maintained during each event.**

Waste

15. **Waste receptacles must be provided of sufficient number and size capable of containing the volume of waste produced on the premises during each event.**

Waste generated during each event must be disposed of at an appropriate waste disposal facility.

Food & Beverage

16. **The food and beverage providers at each event must hold relevant licenses and approvals under the Queensland Food Act 2006.**

Dust

17. **Dust emissions or other air pollutants must not extend beyond the boundary of the site and cause a nuisance to surrounding properties.**

Onsite Parking

18. **All vehicles associated with events must be contained onsite at all times generally in the area identified as the “Informal Carpark” on Lot 49 as detailed on Plan No. 33762/001 B. Parking of vehicles on Tresize Road is not**

permitted.

Lighting

19. Light emanating from the site must not cause a light nuisance to surrounding properties in accordance with the Environmental Protection Act 1994.

ADVICE

1. This approval, granted under the provisions of the *Sustainable Planning Act 2009*, shall lapse one (1) year from the day the approval takes effect in accordance with the provisions of section 346 of the *Sustainable Planning Act 2009*.
2. All building site managers must take all action necessary to ensure building materials and / or machinery on construction sites are secured immediately following the first cyclone watch and that relevant emergency telephone contacts are provided to Council officers, prior to commencement of works.
3. This approval does not negate the requirement for compliance with all other relevant Local Laws and other statutory requirements.
4. For information relating to the *Sustainable Planning Act 2009* log on to www.dsdp.qld.gov.au. To access the *FNQROC Development Manual*, Local Laws and other applicable Policies log on to www.douglas.qld.gov.au.

EXECUTIVE SUMMARY:

Council is in receipt of a Material Change of Use application for an Undefined Use (Wedding Ceremony and Reception Venue) over land located at 188R Tresize Road Mowbray.

The land comprises two allotments being Lot 49 on N157479 and Lot 115 on SP199697. The land has a combined site area of approximately 5.19 hectares with road frontage of approximately 410 metres to Tresize Road. Each allotment is improved by a highset traditional "Queenslander" style of dwelling.

The land is contained within Rural Planning Area within the Rural Areas and Rural Settlement Locality. Such a use is Impact Assessable development under the Planning Scheme and was publically notified in accordance with the requirements of the Sustainable Planning Act. A total of six (6) submissions were received of which two (2) submissions are in support of the proposal.

Concerns are raised with respect to potential impacts generated from such events, particularly with regard to noise emissions, hours of operation and number of persons to attend. However, provided these issues are appropriately conditioned and managed, the proposed development can be approved subject to conditions.

Approval of the application is therefore recommended subject to conditions. The application is supported subject to a condition which in essence provides a trial period of 12 months in conjunction with other conditions which seek to address noise emissions, reduce hours of

operation and limit the number of persons attending events. An opportunity exists to extend the approval subject to a demonstrated ability to hold events without having an adverse impact on surrounding residents. Minor variations could also be contemplated at the time of seeking an extension of the Development Permit. However, any extension or variation to conditions of the approval will be subject to a demonstrated ability to hold events without adverse impacts.

TOWN PLANNING CONSIDERATIONS:

Proposal

The proposed development consists of establishing an Undefined Use (Wedding Ceremony and Reception Venue) on the land. The proposed Wedding Ceremony and Reception Venue will provide an outdoor facility on the premises, which can be hired by members of the public to host specific wedding ceremonies and associated formal receptions.

It is anticipated that there will be approximately two (2) wedding events and functions per month between April and October, therefore a total of approximately fourteen (14) wedding events and functions throughout the year. It is also expected that such events will generally occur on the weekend. However it is not proposed by the applicant to restrict the events to weekends only.

The current land owners of Lot 115 on SP199697 and Lot 49 on N1157479 reside within the existing dwelling located on Lot 49 and will be responsible for caretaker duties during a function upon Lot 115. The applicant has requested a 12.00 midnight conclusion for events to ensure that responsible actions are taken by future event organisers and associated guests to ensure that any potential noise nuisance upon surrounding properties is avoided.

An existing high-set dwelling house constructed on Lot 115 on SP199697 is complemented with manicured surrounding gardens. The building contains toilet facilities that are connected to an onsite-water treatment system that will be utilised to assist with catering for the expected wedding functions on the site. Additional portable toilets can be separately organised depending on the number of guests.

The proposed plans that accompany the application (see Appendix 1) show the proposed layout and function area for the wedding reception and ceremony venue. It is proposed that the venue will be restricted to a maximum capacity of 150 people. All food and beverages will be catered for by the wedding event organisers, along with any associated entertainment (i.e. music and bands etc).

Vehicular access and egress to the venue will be from Tresize Road via two existing access crossover points in Lot 49. These existing access points will connect to an informal designated car parking area that is proposed to be contained within the southern portion of the site. The applicant proposes to keep the car parking and manoeuvring areas as an informal car parking area (i.e. not hardstand) to ensure that the site grounds are kept in their current state and to minimise any visual change upon the character of the site and surroundings.

The application is accompanied by an acoustic report prepared by MSC Applied Physics. A copy of the report is attached at Appendix 2.

Douglas Shire Planning Scheme Assessment

The land is part of the Rural Areas and Rural Settlements Locality and is included within the Rural Planning Area. As the proposed use is 'undefined' in the planning scheme it is subject to impact assessment and assessable against the entire Planning Scheme.

Achieving Outcomes through the Planning Scheme

Development within the Shire must satisfy outcomes identified in the Planning Scheme which seek to achieve ecological sustainability. Outcomes are categorised within the following levels:

- Desired Environmental Outcomes
- Overall Outcomes for Localities
- Specific Outcomes for areas affected by an Overlay
- Specific Outcomes for Planning Areas or Particular Development
- Performance Criteria and associated Acceptable Solutions for a Specific Outcome, Performance Criteria and associated or Acceptable Solutions for Overall Outcomes.

Desired Environmental Outcomes

Chapter 2 of the Planning Scheme outlines the Desired Environmental Outcomes that underpin the Planning Scheme.

The Desired Environmental Outcomes are grouped under core matters which comprise ecological sustainability as follows:

- Ecological Processes and Natural Systems
- Economic Development
- Cultural, Economic, Physical and Social Well-being of the Community.

(1) Ecological Processes and Natural Systems

Desired Environmental Outcome	Comment
DEO 1: The unique environmental values of the Shire, which result from its location within the Wet Tropics Bioregion, are maintained and protected for current and future generations.	The proposed use will not compromise the unique environmental values of the Shire.
DEO 2: Those parts of the Shire located within the Wet Tropics and Great Barrier Reef World Heritage Areas and other adjacent areas of environmental value and ecological significance, are preserved and protected for nature conservation, landscape/scenic quality, biodiversity and habitat values, in particular the protection of the Southern Cassowary and its habitat and to ensure the integrity of natural processes.	The use will not impact on the integrity of the World Heritage Areas of the Shire, or any other adjacent areas of ecological significance, including Cassowary habitat.
DEO 3: Natural waterways such as the Daintree River, the Mossman River, the Mowbray River and Dicksons Inlet, all wetlands but particularly those on the Directory of Wetlands of Importance in Australia, being the Lower Daintree River, Alexandra Bay and the Hilda Creek Headwater;	Natural waterways, including their associated riparian values and scenic amenity values, will not be impacted by the proposed use.

	and all catchments located in the coastal areas within the Shire, are managed to protect their ecological processes, enhance water quality, conserve riparian ecological values and landscape/scenic quality, while acknowledging nature based recreation opportunities.	
DEO 4:	The unique environmental character of the Shire comprised of internationally renowned landscapes, ecologically significant rainforest systems, sensitive coastal systems and areas of unsurpassed natural beauty, are maintained in association with sustainable development practices, which seek to minimise the effects of development on the natural environment.	The proposed use will not compromise the unique environmental character of the Shire.

(2) Economic Development

Desired Environmental Outcome	Compliance
DEO 5: A prosperous community with a strong rural sector, a dynamic tourism industry and commercial and industrial activities offering a diverse range of employment opportunities is supported by the sustainable use and management of the natural resources of the Shire.	The proposed use will support the wedding function industry in the Shire being a specialised industry which significantly contributes to the Shire's economy.
DEO 6: The natural resources of the Shire, such as GQAL, extractive resources, water and forestry resources, are protected and managed in a manner that ensures their ecological and economic values are assured for present and future generations.	The proposed use will not deplete or compromise the natural resources of the Shire.
DEO 7: The values of the Shire are protected by a preferred pattern of development through identifying GQAL which sustains productive primary industries, particularly sugar, horticulture and cattle grazing industries, and consolidates growth and employment opportunities, primarily in the identified locations of Mossman and Port Douglas.	The proposed land use will not compromise the pattern of development in the Shire.
DEO 8: The economic development of the Shire is facilitated by the provision of physical infrastructure which complements the conservation economy of the Shire with 82% of its	The proposed use does not rely on physical infrastructure in any significant way. The main impact will be periodic, but relatively infrequent use of the road network to transport visitors to and from the venue.

lands within the WTWHA in an efficient, equitable and environmentally safe manner, as well as circulation networks which provide for the efficient movement of people and goods, without compromising the Captain Cook Highway as the scenic entry corridor to the Shire.	
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(3) Cultural, Economic, Physical and Social Well-being of the Community

Desired Environmental Outcome	Compliance
DEO 9: Places of cultural and heritage significance, both Indigenous and European, are identified, protected and retained for their significance and importance to the history and identity of the Shire.	The proposed use does not impact on places of cultural or heritage significance in the Shire.
DEO 10: A range of housing options, which provide a high standard of living and a variety of different residential lifestyle opportunities, are available in the Shire and are provided in a sustainable manner with regard to the environment, including its people and communities and the provision of services and facilities.	The proposed development does not involve the provision of additional housing.
DEO 11: The distinctive character and unique sense of place of the towns, villages and other settlement areas in the Shire including the Daintree Lowlands Community, are maintained, promoting community pride and well-being and community safety and prosperity.	The distinctive character and unique sense of place of the Shire's towns, villages and other settlement areas will not be impacted by the proposed development.
DEO 12: Residential communities, particularly within the major tourism areas of Port Douglas, Daintree Village and the Daintree Lowlands maintain a prosperous economy, a sense of community with the natural features, character of those areas and community values and cohesion, promoting harmony between residents and visitors.	The proposed use is complementary to its natural setting. The use will be need to be carefully managed to ensure that any potential conflict between the users of the venue and nearby residents is kept to a minimum (see commentary below).

Overall Outcomes for Localities

The land is included within the Rural Areas and Rural Settlements Locality where the predominant form of surrounding development is primary industry on medium to large sized allotments, along with rural residential living.

The proposed use is considered to be generally consistent with the overall outcomes of the locality code, as outlined below:

- The proposed use will not compromise the retention of primary industry in the locality and will have minimal, if any, impact on the rural landscape character or scenic amenity values of the area;
- The proposed use is not an incompatible urban land use;
- The proposed use will not compromise valuable riverine vegetation along Spring Creek;
- The proposed use does not undermine rural lifestyle opportunities or surrounding productive areas;
- Indigenous interests throughout the locality will not be impacted by the proposed use.

The proposed development has the potential to impact on the amenity of nearby residential properties. However it is intended to apply strict conditions to ensure that the proposed wedding ceremonies and associated reception events are appropriately managed to reduce the likelihood of unreasonable amenity nuisance (see discussions below).

Specific Outcomes for Areas affected by an Overlay

The subject land is affected by the Acid Sulfate Soils Overlay and the Natural Hazards Overlay.

The Acid Sulfate Soils Overlay is not relevant to the proposed development as it is not proposed to excavate or fill the land in associated with the use.

The Natural Hazards Overlay (Medium Bushfire Hazard) is of limited relevance to the proposed use due to its temporary nature. The purpose of the associated Natural Hazards Overlay Code is to ensure that development does not occur in areas prone to the natural hazard of bushfires and to minimise any risks associated with bushfires. The site has been cleared of the majority of hazardous vegetation. However well-established vegetation occurs along the northern, western and eastern perimeter boundaries. The site is connected to a reliable source of reticulated bore water and also rainwater tanks. The site also has unrestricted access for fire trucks and other emergency vehicles. Overall, it is considered that the proposed development will not compromise the specific outcomes of the Natural Hazards Overlay Code.

Specific Outcomes for Planning Areas

The land is included within the Rural Planning Area. It is intended that the Rural Planning Areas conserve areas for use for primary production, particularly areas of GQAL.

The proposed use is considered to be generally consistent with the overall outcomes of the planning area code, as outlined below:

- The land has been developed for rural residential purposes rather than for primary production. Nevertheless the use itself will not compromise the broad intent of facilitating a wide range of agriculture and animal husbandry uses together with other complementary uses in the planning area, in a general sense.
- The proposed use is not extractive industry or farm forestry;
- Areas of remnant and riparian vegetation will not be compromised by the proposed use;

- The general rural character and function of the area will not be unduly impacted by the proposed use.

Performance Criteria and associated Acceptable Solutions

The following table addresses the applicability of each code within the planning scheme and the specific performance criteria and acceptable solutions contained within those codes. The dialogue following the table addresses specific areas of issue and/or non-compliance with the codes.

Douglas Shire		Code Applicability	Compliance/Comments
Locality	Rural Areas and Rural Settlements	✓	Complies
Planning Area	Rural	✓	Complies
Defined Use	Undefined		
Overlay Codes	Acid Sulfate Soils Code	✗	Does not apply. No filling or excavation proposed.
	Cultural Heritage and Valuable Sites Code	✗	Does not apply
	Natural Hazards Code	✓	Complies
General Codes	Design and Siting of Advertising Devices Code	✗	The applicant has advised that no advertising signage is proposed. The use will be promoted via the media.
	Filling and Excavation Code	✗	No excavation or filling is required
	Landscaping Code	✓	Complies
	Natural Areas and Scenic Amenity Code	✓	Complies
	Reconfiguring a Lot Code	✗	No lot reconfiguration is proposed
	Vehicle Parking and Access Code	✓	See comment below
	Sustainable Development Code	✗	No building works are proposed

Commentary and Compliance Issues

Vehicle Parking and Access Code

The Vehicle Parking and Access Code seeks to ensure that sufficient car parking is provided for users on-site, while manoeuvring areas are designed to allow for safe and efficient transport movements. The code also seeks to ensure that access arrangements do not impact the efficiency of the transport network.

While Schedule 1 of the code does not specify a prescribed number of on-site vehicle parking spaces for a wedding ceremony and reception venue, the proposal seeks to utilise an informal car parking area and manoeuvring arrangement on-site. Given the large site area and ease of access, sufficient room is available to satisfy this requirement.

It is also anticipated that in some instances alternative transport arrangements will be made through local bus charter businesses, which will shuttle wedding guests from various accommodation venues throughout Port Douglas, to and from the site. A condition of approval encourages the use of bus charters to assist with the reduction of traffic on Tresize Road.

Vehicular access to the site will be via the existing crossovers to Tresize Road.

As a general principal, there is no objection to the proposal to cater for an informal car parking arrangement on-site. However this will need to be managed carefully given that the weddings and events are proposed through the dry season. Vehicle movements have the potential to

create a dust nuisance and conditions of approval have been drafted to minimise dust nuisances and address the issue should it arise.

Amenity issues generally

Of most concern is the potential of the proposed development to have an adverse impact on the high level of residential amenity enjoyed by a number of surrounding residential properties in the form of noise emissions. Coupled with noise concerns are the proposed hours of operation and the proposed numbers to attend an event being a maximum of 150 people.

As supporting material to the proposal, the applicant commissioned a noise report which provided recommendations with regard to speaker locations, preferred speaker direction and recommended noise limits being 92dB up to 10.00pm then reduced to 78dB from 10.00pm to midnight.

In order to ensure the proposed development does not adversely impact on the residential amenity of the locality, the following is a summary of key conditions of approval and their purpose:-

1. Condition has been added providing an approval period of 12 months. Prior to the lapsing date, the applicant must extend the approval and provide Council with supporting material detailing number of events, number of persons, the time at which the event ceased and noise readings. Council will have regard to this material along with the details of any complaints made during the previous 12 months when deciding the request. The condition also contemplates possible minor variations (to that which was applied for) dependant on a demonstrated ability to hold events with negligible impacts.
2. Limits the hours of operation to cease at 11.00pm with a maximum number of persons limited to 120. Overnight stay / camping on the property is not permitted.
3. Requirement to prepare and lodge an Events Management Plan to ensure that all people involved in the event are aware of their responsibilities and obligations with regard to parking, noise, ablutions, generated waste, food handling requirements and the like.
4. Noise limits further reduced than the recommended levels by the noise expert. Despite nominated noise levels, conditions of approval require that the development must not cause a noise nuisance under the relevant legislation governing noise emissions.
5. The approved use is limited to wedding and reception events and is not approved for other private functions such as birthday parties etc.

Public Notification / Submissions

The application was publicly notified. A total of six (6) submissions were received. Four (4) of the submissions were against with two (2) submissions being in favour of the proposal, as detailed below:

Submission	Response
Concerns regarding noise nuisance generated by the proposed use including amplification, particularly given the rural location within a valley setting.	The application is accompanied by an acoustic report that indicates that noise generation from the proposed use can be contained to acceptable standards. Conditions of approval further reduce the recommended noise limits in recognition of the level of amenity enjoyed by residents.

	A condition of approval also limits the approval for 12 months which in effect is a trial period and provides the applicant with an opportunity to host events while being mindful and respectful of neighbouring properties.
Anti-social behaviours that the use may generate.	It is considered unlikely that the proposed use will generate anti-social behaviour. Weddings and receptions by their very nature are happy occasions. Conditions of approval do not allow other forms of private functions which may be at more risk of people demonstrating anti-social behaviour.
Increase in traffic volumes into the rural residential area.	It is likely that Tresize Road will experience an increase in traffic at the time of scheduled events over and above that typically experienced on any given day. However, Tresize Road, being a two lane road can easily accommodate the additional traffic generated by the proposal. In any event, a condition of approval encourages the use of local bus charters for larger events in order to reduce impacts.
The proposed use will support the local economy and will enhance visitor experiences. The Mowbray Valley is already a “go-to” venue for newly weds photographs, old bridges, creeks and cane fields.	Noted
Good to see investment in Douglas Shire and tap into the thriving wedding business	Noted

ADOPTED INFRASTRUCTURE CHARGES

The proposed development does not trigger Adopted Infrastructure Charges.

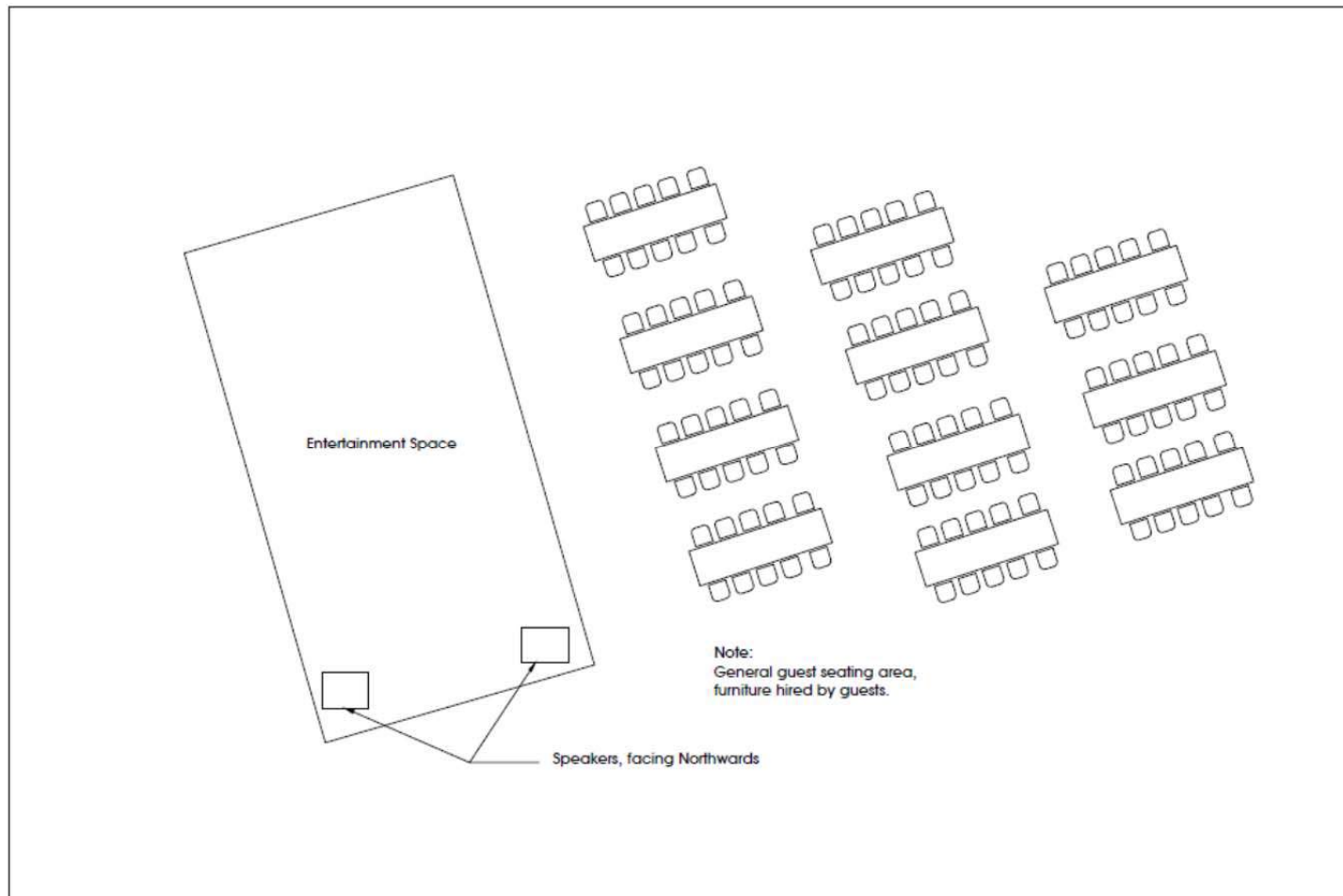
COUNCIL'S ROLE

Under the *Sustainable Planning Act 2009* and the *Sustainable Planning Regulation 2009*, Council is the assessment manager for the application.

APPENDIX 1: APPROVED PLAN(S) & DOCUMENT(S)



FUNCTION AREA (MAXIMUM CAPACITY 150 PEOPLE)



APPENDIX 2 – NOISE REPORT

Premises:

Lot 115 Trezise Road
Mowbray

Client:

John and Joanne Wootten
C/- Brazier Motti Pty Ltd
PO Box 1185
Woree 4870 Qld

Object of this report:

The objective of this report is to establish a guideline for sound levels that can be produced whilst remaining in compliance with the Environmental Protection Act. In a live environment there are many factors that vary wildly and are beyond human control, such as wind and relative humidity and wildlife sounds.

The calculations in this report take a cautionary approach, it is likely that they will lead to compliance. Only physical measurement of sound levels at the sensitive receptor's location can firmly establish compliance, however that would be a matter of usage and beyond the scope of a building application.

Brief description of the project:

The subject of this project is a change of use application to use the premises as an occasional wedding and reception venue. When in use, noise will emanate from the premises, which may impact on the environmental quality of nearby residences.

In the case, 'nearby' refers to a distance in the order of approximately 250 meters for the nearest, which is quite different from the usual environment for venues, where neighbours are often just meters away, or, for outside venues, dozens of meters.

The venue is completely outdoor, which makes it impossible to use noise restraining systems, however the growth of vegetation in the surrounding does have a dampening effect, as has the earth, which absorbs sound, contrary to water and hardened surfaces which reflect sound.

Brief description of current noise environment:

Appendix 1 contains two views on the venue, one as a map and one satellite image. On the map, dwelling as are indicated with the letter x, and x1 is the dwelling occupied by the owners of the venue and as such can be regarded as the source of the sound and thus can be disregarded for calculations according to 8.4.b of the Environmental Protection Act, the relevant parts of which are listed in Appendix one.

Background creep:

The use of regulation concerning background creep is intended mostly for urban environments where several venues operate in proximity and thus one could provide – with is noise – a false reading of the real background sound levels to which the other venue must refer its levels. In a situation like this, where sound levels are only occasional it would be not in line with the intention of the law to apply rules of background noise. And as a matter of being a level solely depending on actual use, there is no case for using these levels in the building application process.

Noise levels at the source

Noise levels at the source in regulations are measured 3 m from the main source of the noise. In this case we take the source that produces the highest noise levels, which would be the main loudspeakers of a live band.

The distance of 3 m is chosen to distinguish the particular source (loudspeaker) from other sources, but to allow for inaccuracy in the distance and to let the sound field even out – at close proximity sound levels vary wildly over small distances in a plane parallel to the field front, which is perpendicular to the direction in which the sound is pointed.

Calculations of loss of sound energy

To establish a first approximation of allowed noise levels, calculate back from the sensitive receptor.

The definition of dB is:

$$1 \text{ dB} = 10 \log (P1/P0)$$

The surface of a sphere is $S = 4 \pi r^2$.

The loss of noise over distance can now be calculated: twice the distance means a quarter of the amount of energy, since it is spread over the sphere's surface.

Thus $P1 = 0.25 P0$.

The loss of sound is thus: $10 \log(0.25) = 6 \text{ dB}$.

Sound levels are measured at 3 m from the source (the loudspeaker).

If we express the multiplication from 3m to the distance of the affected location as a power of 2, then the loss of dB is 6 times that power. (For each doubling of distance we lose 6 dB)

Reduction of sound level due to distance

The map in appendix 2 lists 22 homes in the vicinity of the source of the sound (the proposed venue). Other homes in the vicinity are definitely less susceptible to sound (from the proposed venue) than the 22 listed, also when the directivity of the sound and sound level reduction due to vegetation are concerned.

Reduction of sound level due to vegetation

In peer reviewed experiments it has been established that with 3 m vegetation traffic noise can be reduced by 6 dB. Traffic noise has a strong low frequency component and can therefore serve for comparison with music, as higher frequencies disperse many times faster. To ensure erring on the side of caution we can assume that 40 m of bush can lead to 6dB reduction, and 20m can lead to 3 dB reduction. (That means applying 13 times the width of the experiment to forecast the same noise reduction.)

The loss of noise level due to vegetation is noted as a second number – where applicable - in the dB loss column.

Reduction of sound level due to directivity of loudspeakers

Loudspeakers have directivity, meaning the sound in the direction in which the loudspeakers point is much louder than sideways or reverse. The pattern of a normal modern PA loudspeaker can safely be assumed to yield 3dB less than in the direction of the axis under a 90 to 120 degree angle, 6 dB(A) under a 120 to 150 degree angle and 12dB(A) under an 150 to 180 degree angle with the axis of the speaker. These are conservative numbers

It may be noted that the drop in sound levels related to directivity is much more dramatic in medium and higher frequencies, but much less in low frequencies (below 250 Hz). However the result in A levels, which is a weighted sum of sound levels at different frequencies, is as described. The direction of the loudspeakers is to be chosen away from the most affected receptor.

Choice of direction and resulting worst case

The least amount loss due to combined effects of distance and vegetation is experienced at locations 12 and 13. To also allow location 2 and 4 to benefit from directivity the direction is chosen at 25 degrees West of due North. On the map sections A, B and C indicate directivity loss of 3, 6 and 12 dB respectively.

The choice and its effect are discussed after the following table.

TABLE 1: SENSITIVE RECEPTORS AND LOSS OF SOUND LEVEL DUE TO DISTANCE, VEGETATION AND DIRECTIVITY

Location Index	Distance in m	dB loss	Location Index	Distance in m	dB loss
1	N/A part of venue		12	$335 > 3 \times 2^{6.7}$	$37.2 + 0 + 12 = 49.2$
2	$200 > 3 \times 2^{6.0}$	$36 + 6 + 3 = 45$	13	$325 > 3 \times 2^{6.7}$	$37.2 + 0 + 12 = 49.2$
3	$230 > 3 \times 2^{6.2}$	$37.2 + 3 + 6 = 46.2$	14	$385 > 3 \times 2^{7.0}$	$42 + 6 + 3 = 51$
4	$290 > 3 \times 2^{6.5}$	$39 + 3 + 3 = 45$	15	$435 > 3 \times 2^{7.1}$	$42.6 + 3 + 0 = 45.6$
5	$280 > 3 \times 2^{6.5}$	$39 + 6 + 6 = 51$	16	$470 > 3 \times 2^{7.2}$	$43.2 + 6 + 0 = 49.2$
6	$285 > 3 \times 2^{6.5}$	$39 + 6 + 3 = 48$	17	$490 > 3 \times 2^{7.3}$	$43.8 + 6 + 0 = 49.8$
7	$360 > 3 \times 2^{6.9}$	$41.4 + 6 + 3 = 50.4$	18	$410 > 3 \times 2^{7.0}$	$42 + 6 + 0 = 48$
8	$390 > 3 \times 2^{7.0}$	$42 + 6 + 3 = 51$	19	$490 > 3 \times 2^{7.3}$	$43.8 + 6 + 0 = 49.8$
9	$330 > 3 \times 2^{6.6}$	$39.6 + 6 + 3 = 48.6$	20	$420 > 3 \times 2^{7.1}$	$42.6 + 6 + 3 = 51.6$
10	$325 > 3 \times 2^{6.6}$	$39.6 + 6 + 6 = 51.6$	21	$420 > 3 \times 2^{7.1}$	$42.6 + 6 + 3 = 51.6$
11	$300 > 3 \times 2^{6.5}$	$39 + 6 + 6 = 51$	22	$460 > 3 \times 2^{7.2}$	$43.2 + 6 + 3 = 52.2$

The worst affected locations are 2 and 4 with 45 dB loss compared to measured 3 m from the source.

Selecting the right level at the source

Schedule 10 has an indoor and an outdoor level for daytime and evening.

50 dB(A)_{eq}

55 dB(A) L10

65 dB(A) L1

When measured with a sound level meter set to fast sampling (125 ms) the peak levels one reads usually correspond with a level between L1 and L10. L1 and L10 are statistical numbers and are read as the levels that are exceeded for no more than 1, respectively 10 per cent of the time. However it is not difficult to take a reading for a few minutes – provided they are not in exceptionally loud or quiet passages to get a good idea of Leq, which is the level that an even sound would have to disperse the same amount of energy over that period of time.

Choosing the outdoor level as a starting point for the worst case location gives a sound level of The recommendation for daytime and evening levels would assume two loudspeakers. This means that the levels measured from one loudspeaker are half of the total energy of sound and since $10 \times \log(0.5) = 3$, the measured levels at the source must be brought down with 3 dB.

At night-time only indoor levels are specified, and a safe amount of 6 dB reduction between outside and inside is assumed.

What is night-time?

The EPA does not explicitly define night-time, however the well researched foundation of the

guidelines from the Office of Liquor and Gaming Regulations prescribes a stricter and more complicated regime for intrusive sounds between 10PM and 6 AM. It is recommended to follow this reference.

We arrive at the following

Recommendation

Daytime and evening:

Between 6 AM and 10 PM maximum sound levels measured at 3 m from the source of :

$$50 + 45 - 3 = 92 \text{ dB(A)Leq.}$$

Night-time indoors levels are applied with a safe reduction from outdoors to indoors of 6 dB.

Between 10 PM and 6 AM maximum sound levels measured at 3 m from the source of :

$$30 + 6 + 45 - 3 = 78 \text{ dB(A)Leq}$$

To give a sense of how loud these levels are, 92 dBA is what a petrol powered lawnmower may produce, 78 dBA has been compared to the noise of a washing machine.

The noise produced by humans must comply with these levels, although the rhythmical and bass aspects of music make it much more penetrating into the perception of the human hearing.

The Handbook of Environmental Acoustics by James Cowan lists the average noise LA_{eq} of a playground recess at 68-77 dBA, from a crowd of 100-500, and the noise of a basketball game of 12.600 people at 89 dBA. Both are measured at 5 ft, which is half of 1.5m.

The peaks of these events are up to 101 and 107 dB respectively, not surprising when crows cheer or children scream. These peaks are part of the total noise that makes the averages mentioned.

It can be concluded that well-behaved crowds can easily comply, as long as they refrain from singing in unison or having loud cheers or a rowy atmosphere.

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Appendix 1 – Relevant legislation, from Environmental Protection Act Queensland

The relevant paragraphs from part 3 and 4 of the EPP are cited below.

8 Acoustic quality objectives for sensitive receptors

- (1) An acoustic quality objective stated in schedule 1, column 3 for a sensitive receptor stated in column 1 and for a time of day stated in column 2, is prescribed for enhancing or protecting the environmental value stated in column 4 of the schedule for the objective.
- (2) An acoustic quality objective stated in schedule 1 is expressed as a measurement of an acoustic descriptor.
- (3) It is intended that the acoustic quality objectives be progressively achieved as part of achieving the purpose of this policy over the long term.
- (4) This section does not apply to a noise—
 - (a) mentioned in the Act, schedule 1, part 1, section 1; or
 - (b) experienced within a dwelling or a workplace if the noise is made within the dwelling or workplace.

10 Controlling background creep

- (1) This section states the management intent for an activity involving noise.
Note—See section 51 of the Environmental Protection Regulation 2008.
- (2) To the extent that it is reasonable to do so, noise from an activity must not be—
 - (a) for noise that is continuous noise measured by LA90,T—more than nil dB(A) greater than the existing acoustic environment measured by LA90,T; or
 - (b) for noise that varies over time measured by LAeq,adj,T—more than 5dB(A) greater than the existing acoustic environment measured by LA90,T.

Schedule 1 Acoustic quality objectives

Column 1	Column 2	Column 3			Column 4
Sensitive receptor	Time of day	Acoustic quality objectives (measured at the receptor) dB(A)			Environmental value
		LAeq,adj,1hr	LA10,adj,1hr	LA1,adj,1hr	
dwelling (outdoors)	daytime and evening	50	55	65	health and wellbeing
dwelling (indoors)	daytime and evening	35	40	45	health and wellbeing
	Night-time	30	35	40	health and wellbeing, in relation to the ability to sleep

Appendix 2 Map (satellite image) of venue and sensitive receptors

