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**BLIGH  
TANNER**

19 February 2018  
Ref. No. 2017.0209

Mr Ashley Everton  
Ethos Urban  
365 St Pauls Terrace  
Fortitude Valley Qld 4006

Dear Ashley

**Brisbane Rd Carpark, Civil Engineering Report**  
**SCC MCU172169, Lots 64, 65, 66, 67, 68 & 69 on RP52440, and Lots 73, 92 & 93 on RP73433**  
**Development Permit for Material Change of Use**

#### Introduction

Abacus Funds Management Ltd made an application to Sunshine Coast Council for a Development Permit for Material Change of Use for a mixed-use facility (residential, aged care, resort and commercial), at land as described above.

An impression of the proposal is shown below at *Figure 1*.



Figure 1: view along Brisbane Rd from Mooloolaba Esplanade

In more detail the application is described in the table below:

<b>SITE, USE AND LOCALITY DESCRIPTION</b>	
<b>Land Area:</b>	6,778m <sup>2</sup>
<b>Existing Use of Land:</b>	Carpark and visitor information centre
<b>Proposed Use of Land</b>	Parking Station, Car Wash, Shop (including full line supermarket), Food & Drink Outlet, Shopping Centre, Multiple Dwellings (96 dwellings), Retirement Facility (97 independent living units), Residential Care Facility (30 aged care units), Short-Term Accommodation (104 hotel rooms), Function Facility, Hotel, Bar, Indoor Sport & Recreation and Resort Complex, over 7 Stages
<b>Road Frontage:</b>	Brisbane Rd, First Ave, Smith St
<b>Significant Site Features:</b>	Nil.
<b>Topography:</b>	Relatively flat Stormwater overland flow
<b>Surrounding Land Uses:</b>	The site is surrounded by a mixture of apartments, short-term accommodation, retail, food and drink outlets, retail, office, commercial

An aerial view of the site is shown below at *Figure 2*.



*Figure 2: site aerial view*

The purpose of this report is the assessment of the application against the Council planning scheme and related instruments. It has been completed by Bligh Tanner, who were part of the independent assessment team (Team) appointed by Council to undertake the assessment of the application.

### Application Information

The application included a Civil Engineering report dated 4<sup>th</sup> December 2017, compiled by ADG Engineers (Aust) Pty Ltd. This report and associated elements was assessed by Bligh Tanner and found to require clarifications and further information in respect of:

- Stormwater and flood management
- Earthworks management
- Water and sewer services
- Construction management

Subsequent to an Information Request issued by Council, an information memorandum was received dated 6<sup>th</sup> Feb 2018, again compiled by ADG Engineers.

### General Assessment

In respect to civil engineering works the proposed development appears to be relatively straightforward, therefore, it is reasonable to consider it for the subject approval from this perspective. Proposed conditions for development relevant to the civil engineering issues are included in this report. Nevertheless, the applicant has not yet addressed flood and stormwater management to the level of detail that is normally required at this stage of approvals, resulting in some conditions of development with impacts to the Developer that they will need to deal with during the Operational Works approval phases of the project (it is stressed that conditions have been written to transfer these risks to the Developer). A brief summary of the civil engineering proposed works follows:

- **Bulk Earthworks:** Substantial earthworks are required to complete basement excavations. These works are typical of many other basement excavations, though excavated soils are reported to be potentially acid sulphate. At the applicant's Response for Information they provided a new Construction Management Plan (Rev E, dated 31 Jan 2018) and this included an Acid Sulphate Management Plan, prepared by a reputable geotechnical engineer, and this appears to address issues sufficiently;
- **Stormwater:** Stormwater generated from this site is anticipated to be approximately the same as in the existing situation. The applicant has identified a suitable legal point of discharge, they have proposed stormwater quality management in accordance the Councils policy and in broad terms this work appears straightforward. However, the proposed development does obstruct an existing overland flow path, resulting in an afflux at neighbouring properties of up to 45mm, this is not considered acceptable and does not comply with Council's planning scheme. The afflux is reported in the ADG Information Memorandum and is based on flood modelling work described in a Council Memo dated 9<sup>th</sup> Jan 2018. The proposed conditions require the Developer to address this issue by the preparation of a stormwater management plan agreed to by Council and construction of works to mitigate the issue, also agreed by Council. The works will be subject an Operational Works approval;
- **Flood Management:** The site is subject minor inundation from local flooding. The applicant has proposed a suitable floor level to ensure the safety of people and property at the site. Flood gates will be necessary to protect basement levels from flooding. A Flood Emergency Management Plan will be required for the Development. The works have been appropriately conditioned, and again are subject ongoing scrutiny during the Operational Works approval process;
- **Water and Sewer:** Water and sewer works are required to both divert existing Unity Water services around the proposed basement works and for new connections. Unity Water has agreed in principle to these works.

**Assessment Specific Criteria**

Codes specific to this assessment include:

- The Stormwater Management Code
- The Services, Works and Infrastructure Code
- Acid Sulphate Soils Overlay Code
- Coastal Protection Area Code

The application of these codes is described below, referencing particular issues.

- *Stormwater Management Code,*
  - At *Purpose* the code requires, amongst other things, that the development is provided with effective stormwater drainage systems to protect people, property and the environment from the effects of stormwater;
  - Whilst the application was considered to satisfy the code in most respects, the ADG reports demonstrate impacts to adjacent properties and this is not considered acceptable;
  - Draft conditions of development have been proposed addressing stormwater management, and specifically requiring the development to mitigate impacts to adjacent properties to nil;
- *Services, Works and Infrastructure Code,*
  - *PO4* requires that construction activities and works are managed such that all reasonable and practicable measures are taken to protect the environmental values of water and the State Planning Policy (SPP) in the section on Water Quality has further provisions in respect of acid sulphate soils. The applicant has prepared a suitable Acid Sulphate Soils Management Plan;
  - *PO8* requires that development is provided with infrastructure, services and utilities appropriate to its setting and commensurate with its needs. The applicant has obtained in principle approval from Unity Water for works to existing services and for provision of suitable services to the development. The development must obtain approval from Unity Water for works to their infrastructure;
- *Acid Sulphate Soils Overlay Code,*
  - The *Purpose* of this code, amongst other things, is to ensure the generation or release of acid and metal contaminants from acid sulphate soils does not have adverse effects on the natural environment, built environment, infrastructure or human health. As described above, this issue has been adequately addressed.
- *Coastal Protection Overlay Code,*
  - The *Purpose* of this code, amongst other things, is to ensure the protection of people and property from coastal hazards, taking into account the predicted effects of climate change. In the context of the proposed development, flooding associated with its location in a low lying coastal area is the key impact, and this has been adequately addressed as described earlier in this report.

Other aspects of these codes were considered to be satisfied.

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### Summary

The civil engineering aspects of the development, as described above, appear to meet the requirements of Council, excepting that the current proposal does not properly address the mitigation of stormwater drainage impacts. Draft conditions of development have been proposed and are attached, and specific requirements have been made to redress the stormwater impacts.

Please call if you have any queries.

Yours faithfully,



**Chris Tanner**  
BLIGH TANNER PTY LTD

Enc. Proposed draft conditions of development (relevant to civil engineering)

**BLIGH  
TANNER**

### STORMWATER DRAINAGE

1. The site must be provided with a stormwater drainage system connecting to a lawful point of discharge. The works must be undertaken in accordance with an operational works approval and the Sunshine Coast Planning Scheme, Planning Scheme Policy for Development Works, and must include in particular:
  - (a) The works generally described in the ADG Civil Engineering Report dated 4<sup>th</sup> Dec 2017, with the following exceptions (specific to stormwater/flooding matters)
    - (i) Stormwater or flooding afflux as a result of the development is not acceptable;
    - (ii) that manually operated flood gates are not acceptable;
  - (b) A written submission made with the application for Operational Works that includes a letter of agreement between the Applicant and Council, with such letter including a Preliminary drawing showing:
    - (i) The extent of proposed stormwater works required to maintain zero afflux as a result of the proposed development. The proposed works are to be consistent with the intent of the Council Drainage masterplan for the area;
    - (ii) A demarcation of the entities responsible for completion of the works and the time by which it must be completed;

### STORMWATER QUALITY MANAGEMENT

2. A stormwater quality treatment system must be provided for the development. The works must be undertaken in accordance with an operational works approval, and include stormwater quality treatment devices of a size and location generally described in the ADG Civil Engineering Report dated 4<sup>th</sup> Dec 2017.
3. All Stormwater 360 StormFilter and Enviropod proprietary stormwater quality treatment devices must be routinely checked, serviced and cleaned in accordance with the manufacturer's recommendations. Records of all maintenance activities undertaken must be kept and made available to council upon request. Where replacement cartridges or other necessary components for the system become unavailable, an alternative system must be retrofitted into the development to achieve an equivalent pollutant reduction outcome.
4. Any proposed Community Management Statement required for the development must include the operations and maintenance manual for the StormFilter and Enviropod and must include the full cost of maintaining the system in accordance with the manual including replacement of the StormFilter Cartridges.
5. A copy of a signed supply agreement between the body corporate OR site operator and the stormwater filtration system supplier for the replacement of the StormFilter Cartridges must be provided to council. The supply agreement must be for the replacement of each StormFilter Cartridge at least ten (10) times.

### FLOOD IMMUNITY

6. The minimum infrastructure levels for works is the following:
  - (a) The floor level of all buildings *is a minimum of 2.96m AHD*
  - (b) At openings below 2.96m, for example to basement levels, automatically operating barrier gate systems shall be provided with the minimum crest level of such gates as shown on the attached plan titled Flood Gate Minimum Levels.  
All works must be provided in accordance with the requirements of the *Flood hazard overlay code*.
7. The minimum floor level of all buildings constructed on the site must be in accordance with the Approved Plans.

### FLOOD MANAGEMENT

8. Fully automatic flood barrier gate systems are to be installed at the entry to all parts of the property subject flood inundation, and generally as shown on the attached plan titled Flood Gate Minimum Levels, with systems to include power failure and other systems redundancy mechanisms. The details of such systems shall be submitted and subject to an Operational Works approval.
9. An easement for drainage purposes must be registered against the title/s of the property/ies in favour of council over the land area identified as being below the flood level for the Defined Flood Event on the subject site.
10. A Flood Emergency Preparedness and Management Plan must be prepared by a Registered Professional Engineer of Queensland (RPEQ) and implemented. This plan must be endorsed by council's delegate prior to commencement of use. The Flood Emergency Preparedness and Management Plan must be prepared in accordance with *Floodplain Management in Australia: Best Practise Principles and Guidelines* (SCARM Report 73, CSIRO Publishing, 2000) and must detail the following:
  - (a) nature of the flood threat
  - (b) flooding constraints and flood risks for the site (including consideration of any residual flood risk)
  - (c) sources of flood intelligence
  - (d) considerations for flood management
  - (e) procedures to manage the flood risk
  - (f) roles and responsibilities before, during and after the flood episodes
  - (g) how the assisted ease of movement of the frail, aged and those that are immobile/bedridden will be managed when the base of the lift shaft is inundated
  - (h) triggers for plan activation
  - (i) arrangements for education of workers and residents
  - (j) resources needed to shelter in place during a flood episode
  - (k) management of a medical emergency during a flood episode
  - (l) management of equipment and buildings and
  - (m) recovery.

The site and the Flood Emergency Preparedness and Management Plan must be registered with the Local Disaster Management Coordination Centre.

#### **ACID SULFATE SOILS**

11. All works must be carried out in accordance with Douglas Partners Report (Report on Acid Sulphate Management Plan, Proposed Mixed Use Development, 20 Brisbane Rd, Mooloolaba) dated December 2017.
12. All waters, including stormwater runoff, groundwater seepage and leachate from acid sulfate soils must achieve the following quality prior to release from the site:
  - (a) a pH range of 6.5-8.5 pH units
  - (b) 50mg/L maximum total suspended solids concentration
  - (c) 0.3mg/L maximum total iron concentration
  - (d) 0.2mg/L maximum total aluminium concentration
  - (e) No visible plume at either the point of release from the site or within a waterway.
13. The basement must be designed and constructed as a water excluding structure in accordance with AS 3735 - *Concrete Structures for Retaining Liquids*. It must be able to withstand hydrostatic pressure, be completely sealed (including control joints) to prevent groundwater infiltration, and contain no permanent or post-construction sub-surface drainage.
14. All treated material must undergo verification testing at the rate of one sample per 250m<sup>3</sup> throughout the duration of the excavation phase of the development. The verification testing must

be undertaken by a qualified person\* using the SPOCAS or Chromium Reducible Sulphur testing suite, and the results for each sample must be submitted to council.

*\*(Refer to Advisory Note)*

#### **UTILITY SERVICES**

15. Underground reticulated electricity and telecommunication services must be provided to each lot in accordance with an approval for operational works and the standards and requirements of the relevant service provider.
16. An underground connection to reticulated water and sewerage (where applicable) must be available and/or where necessary provided to each lot **OR** the development site in accordance with the standards and requirements of Northern SEQ Distributor-Retailer Authority (Unitywater).
17. Internal private water and sewer reticulation must be constructed in accordance with a compliance approval for plumbing and drainage work issued by council. Evidence of the compliance approval must be submitted to council prior to endorsement of the survey plan.
18. Certification must be submitted to council from all relevant service providers which certifies that the development has met the requirements of development approval and all applicable legislation at the time of construction.

#### **UNDERGROUNDING OF EXISTING OVERHEAD POWERLINES**

19. The existing overhead electricity reticulation across the XYZ frontage/s of the site must be placed underground. The works must be undertaken in accordance with an operational works approval and must include in particular:
  - (a) placement on council's standard alignment as shown on Standard Drawings RS-100 and RS-101

#### **EARTHWORKS AND RETAINING WALLS**

20. All fill and associated batters must be undertaken in accordance with an operational works approval, and contained entirely within the subject site unless written permission from the respective landowner(s) is provided to council.
21. Where the development involves excavation or filling over, or adjacent to drainage infrastructure access chamber surface levels must be adjusted to provide a freeboard of 100mm above the finished ground surface level.
22. All retaining walls must be designed and constructed in accordance with the planning scheme and must be certified by a Registered Professional Engineer of Queensland (RPEQ) where exceeding 1m in height. All retaining walls that are publicly accessible and exceed 1m in height must be fitted with a commercial grade safety fence.

#### **POTABLE WATER**

1. The development must be provided with a safe and adequate potable water supply system having a capacity sufficient for the use.