DEVELOPMENT NO.:	21008654
APPLICANT:	Phillips/Pilkington Architects
ADDRESS:	1377 LOWER NORTH EAST RD HOUGHTON SA 5131
NATURE OF DEVELOPMENT:	Two storey community facility, including function hall (200 person capacity), verandah, associated car parking, landscaping & earthworks
ZONING INFORMATION:	**Zones:** • Township **Overlays:** • Hazards (Bushfire - Medium Risk) • Hazards (Flooding - Evidence Required) • Mount Lofty Ranges Water Supply Catchment (Area 1) • Native Vegetation • Prescribed Water Resources Area • Regulated and Significant Tree • Traffic Generating Development • Urban Transport Routes • Water Resources **Technical Numeric Variations (TNVs):** • Minimum Site Area
LODGEMENT DATE:	14 May 2021
RELEVANT AUTHORITY:	Council Assessment Panel
PLANNING & DESIGN CODE VERSION:	2021.5
CATEGORY OF DEVELOPMENT:	Code Assessed - Performance Assessed
NOTIFICATION:	23 Representations 6 Representations to be heard
RECOMMENDING OFFICER:	Doug Samardzija *Acting Team Leader Statutory Planning*
REFERRALS STATUTORY:	EPA
REFERRALS NON-STATUTORY:	Engineering Department

CONTENTS:

ATTACHMENT 1: Application Documents	**ATTACHMENT 5: Response to Representations**
ATTACHMENT 2: Subject Land Map/ Representation Map	**ATTACHMENT 6: Referral Responses**
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ATTACHMENT 4: Representations	**ATTACHMENT 8: Relevant P&D Code Policies**

DETAILED DESCRIPTION OF PROPOSAL:

The proposal is for a two-storey community facility to be used in association with the Houghton, Inglewood & Hermitage Memorial Park. The use of the facility will be predominantly by a range of sporting groups including football and cricket but also by the general public for community gatherings. The additional use proposed for the facility is for functions at times when the building is not being utilised for sporting or community purposes.

The key features of the proposal are:

- Ground level containing home-team and away-team change rooms, wet areas, medical room, umpires room, a canteen and a large mechanical plant and services room
- First level containing the large multipurpose/function room of approximately 265m², a foyer, large kitchen area, office, store room and male and female toilets. The building also has a verandah that wraps around the northern and eastern sides of the building.
- Other physical elements of the proposal include a small lift proposed along the eastern end of the building, associated landscaping, car parking and earthworks

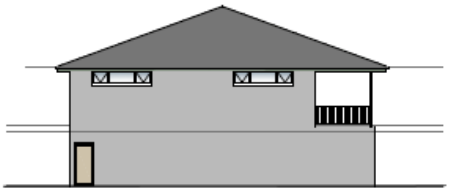
The plans and information forming the application documentation is provided in ***Attachment 1 – Application documents.***

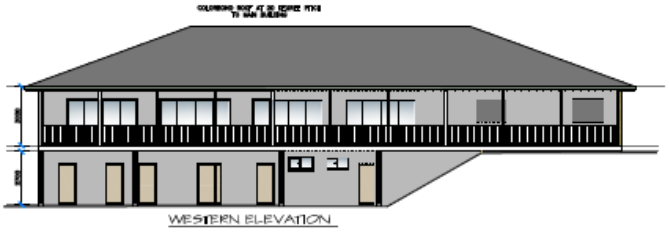
BACKGROUND:

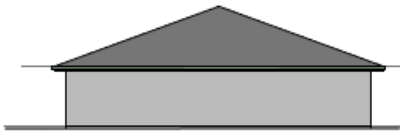
APPROVAL DATE	APPLICATION NUMBER	DESCRIPTION OF THE PROPOSAL
16/12/2020	20/961/473	Lighting & poles (4 x 27m) in association with oval
10/10/2019 (DPC only)	16/808/473	Two storey community centre, including hall (200-person capacity), associated car park & earthworks
18/05/2011	11/278/473	Retaining wall (maximum height 2m)
07/04/2011	11/147/473	Demolition of verandah and removal of a significant tree one Eacalyptus Camaldensis
08/02/2008	08/79/473	Verandah addition to existing clubrooms (measuring 7.31m x 4.05m)
14/01/2005	04/1189/473	Remembrance wall / signage
03/04/2001	01/314/473	Verandah

This current application is a replacement application for Development Application 16/808/473 which was granted Development Plan Consent by staff under delegation in October of 2020. The original application was considered to be merit Category 3 development with only 1 representation received in support of the proposal. Since then, the proposal has been completely redesigned as illustrated by the images below showing the original proposal. Whilst this application proposes to build the community facility in the same location as the original application, Council was of the opinion that the extent of the changes were significant and as such amendments were not able to be considered as a minor variation or a variation application and therefore a new application was lodged.









SUBJECT LAND & LOCALITY:

Location reference: 1377 Lower North East Road, Houghton
Title ref: CT 5276/671 **Plan Parcel:** F147597 AL 1, 2 & 4 **Council:** ADELAIDE HILLS COUNCIL

Site Description:

The subject land is made up of three allotments totalling approximately 39,980m² on the north-western side of Lower North East Road. The land is predominantly used for community purposes and events as well as sporting purposes associated with the existing football and cricket clubs. There is an existing access to the site along the southern end of the property and existing built form is located at the south-eastern portion of the land, closer to the road. The existing buildings include clubrooms/change rooms, storage buildings and there is a car parking area in this location. The remainder of the site is taken up by the oval and areas of native vegetation. The area immediately surrounding the oval is also utilised for overflow car parking during sporting events.

Locality

The locality is generally characterised by regular shaped allotments predominantly used for residential purposes which range in size from 850m² to 1 hectare. Allotments to the north and south of the subject land are all residential properties, whilst immediately to the west is an allotment used predominantly as open space for picnics and as gardens. To the west the subject land adjoins the Productive Rural Landscape Zone with the allotments being much greater in size and ranging in use from residential to primary production purposes.

The subject land and that relating to neighbouring representations is provided in ***Attachment 2 - Subject Land Map/ Representation Map***. The zoning is shown on the map in ***Attachment 3 – Zoning Map***.

CONSENT TYPE REQUIRED:

Planning Consent

CATEGORY OF DEVELOPMENT:

- Community facility: Code Assessed - Performance Assessed

- **OVERALL APPLICATION CATEGORY:**
  Code Assessed - Performance Assessed

- **REASON**
  The P & D Code does not classify community facility in the Accepted, Deemed to Satisfy or Restricted Development Tables for the Zone and therefore the development is categorised as Code Assessed Development and classified as "performance assessed development" under section 105(b) and 107 of the Act, requiring the development to be assessed on its merits against the Code.

PUBLIC NOTIFICATION

- **REASON**
  A community facility is not listed in Table 5 of the Township Zone as an exemption from public notification and in this instance, the development is not considered minor development by Council staff.

  Public notification was undertaken from 11 June 2021 to 05 July 2021.

- **LIST OF REPRESENTATIONS**
  Twenty-three (23) representations were received. Of these, nine (9) representations are opposing the proposal, three (3) were in support of the proposal with some concerns and, eleven (11) were fully in support of the proposal. All were from adjacent and nearby properties.

The following representors wish to be heard:

Name of Representor	Representor's Property Address	Nominated Speaker
William and Rosalie Caire	67 Amberdale Road, Houghton	Rosalie Caire
James and Sharon Freeman	78 Amberdale Road, Houghton	James Freeman
Isla and Colin Maclean	82 Amberdale Road, Houghton	Colin Maclean
Brett and Caroline Saltmarsh	PO BOX 35 , Houghton	Caroline Saltmarsh
Travis Stringer	74 Amberdale Road , Houghton	Kirsty Stringer
Jura-May Maclean	82 Amberdale Road, Houghton	Colin Maclean

The following representations were received but do not wish to be heard:

Name of the Representor	Representor's Property Address
Roger Aay	270 Warner Road Upper Heritage,

Jo-Ann Aay	270 Warner Rd Upper Hermitage
Sally Caston	PO Box 123, Houghton
Robert Craig	1446 Lower North East Rd, Houghton
Carol Ferencz	3 Blackhill Road, Houghton
Paul Franks	P.O. Box 19, Houghton
Robert Garrett	79 Amberdale Rd, Houghton
Simone Jones	1419 Lower North East Road, Houghton
Carolyn Laslett	PO Box 214,St Agnes 5097
Dennise Micklem	7 Lofty's Lane, Houghton
Sarah Nobes	86 Amberdale Road, Houghton
Han Robat	P.O. Box 118, Houghton
Andrew Rogers	2 Rhona Court, Surrey Downs
Kathy Russell	45 Milbanca Road, Houghton
Julie Sharp	9 Houghton Hollow Road, Houghton
Felicity Young	1344 Lower North East Road, Houghton

The applicant or their representative may be in attendance.

- **SUMMARY**

  The issues contained in the representations can be briefly summarised as follows:

  - Noise impacts associated with the functions and vehicles
  - Bulk and scale of the building
  - Security issues
  - The need for the building
  - Lack of community consultation
  - Location of the stormwater pond

A copy of the representations are included as ***Attachment 4 – Representations*** and the applicant's response is provided in ***Attachment 5 – Response to Representations.***

AGENCY REFERRALS

- **Environment Protection Authority (EPA)**

  The EPA requested more information regarding waste management and stormwater management and after a review of all of the information advised that they have no objections. The EPA have directed conditions (Refer recommended conditions 17-20) and advisory notes (Refer recommended notes 3-6).

  The EPA referral response is included as ***Attachment 6 – Referral Response.***

INTERNAL REFERRALS

- Council's Engineering Department reviewed the stormwater management plan and are satisfied with the design and discharge rate calculations.

PLANNING ASSESSMENT

Desired outcomes

Desired outcomes are policies designed to aid the interpretation of performance outcomes by setting a general policy agenda for a zone, subzone, overlay or general development policies module. Where a relevant authority is uncertain as to whether or how a performance outcome applies to a development, the desired outcome(s) may inform its consideration of the relevance and application of a performance outcome, or assist in assessing the merits of the development against the applicable performance outcomes collectively.

Performance outcomes
Performance outcomes are policies designed to facilitate assessment according to specified factors, including land use, site dimensions and land division, built form, character and hazard risk minimisation.

Designated performance features
In order to assist a relevant authority to interpret the performance outcomes, in some cases the policy includes a standard outcome which will generally meet the corresponding performance outcome (a *designated performance feature* or DPF). A DPF provides a guide to a relevant authority as to what is generally considered to satisfy the corresponding performance outcome but does not need to necessarily be satisfied to meet the performance outcome, and does not derogate from the discretion to determine that the outcome is met in another way, or from the need to assess development on its merits against all relevant policies.

The application has been assessed against the relevant provisions of the Planning & Design Code, which are contained in ***Attachment 8 - Relevant P&D Code Policies*****.**

Township Zone

Desired Outcomes	
DO 1 **DO 2**	A township supporting a range of residential, community, retail, business, commercial and light industry uses and facilities Development contributes to and enhances streetscape and the settlement patterns comprising the township
Hazards (Bushfire - Medium Risk) Overlay DO1	Development, including land division responds to the medium level of bushfire risk and potential for ember attack and radiant heat by siting and designing buildings in a manner that mitigates the threat and impact of bushfires on life and property taking into account the increased frequency and intensity of bushfires as a result of climate change

DO 2	To facilitate access for emergency services vehicles to aid the protection of lives and assets from bushfire danger
Mount Lofty Ranges Water Supply Catchment (Area 1) Overlay **DO 1**	Safeguard Greater Adelaide's public water supply by ensuring development has a neutral or beneficial effect on the quality of water harvested from primary reservoir or diversion weir catchment from Mount Lofty Ranges.
Native Vegetation Overlay **DO 1**	Areas of native vegetation are protected, retained and restored in order to sustain biodiversity, threatened species and vegetation communities, fauna habitat, ecosystems services, carbon storage and amenity values.
Prescribed Water Resources Area Overlay **DO 1**	Sustainable water use in prescribed surface water resources area maintains the health and natural flow paths of water courses.
Regulated and Significant Tree Overlay **DO 1**	Conservation of regulated and significant trees to provide aesthetic and environmental benefits and mitigate tree loss.
Traffic Generating Development Overlay **DO 1** **DO 2**	Safe and efficient operation of Urban Transport Routes and Major Urban Transport Routes for all road users Provision of safe and efficient access to and from urban transport routes and major urban transport routs
Urban Transport Routs Overlay **DO 1** **DO 2**	Safe and efficient operations of Urban Transport Routes for all road users Provision for Safe and efficient access to and from Urban Transport Routes
General Development Policies (Design): **DO 1 (a-c)**	Development is: a. Contextual- by considering, recognising and carefully responding to its natural surroundings or built environment and positively contributes to the character of the immediate area. b. Durable- fit for purpose, adaptable and long lasting c. Inclusive- by integrating landscape design to optimise pedestrian and cyclist usability, privacy and equitable access, and promoting the provision of quality spaces with the public realm that can be used for access and recreation and help optimise security and safety both internally and within the public realm, for occupants and visitors
General Development Policies (Design in Urban Areas) **DO 1**	Development is: a. Contextual- by considering, recognising and carefully responding to its natural surroundings or built environment and positively contributes to the character of the immediate area. b. Durable- fit for purpose, adaptable and long lasting c. Inclusive- by integrating landscape design to optimise pedestrian and cyclist usability, privacy and equitable access, and promoting the provision of quality spaces with the public realm that can be used for access and recreation and help optimise security and safety both internally and within the public realm, for occupants and visitors

Interface between Land Uses **DO 1**	Development is located and designed to mitigate adverse effects on or from neighbouring and proximate land uses

Relevant Performance Outcomes/Designated Performance Features	
Township Zone	Land Use: PO 1.1 Built Form and Character: POs 2.1, 2.2, 2.3, 2.6 and DPFs 2.2, 2.4, 2.6
Hazards (Bushfire - Medium Risk) Overlay	Siting: PO 1.1 Built Form: 2.1 Vehicle Access- Road, Driveways and Fire Tracks: PO 5.1 and DPF 5.1
Mount Lofty Ranges Water Supply Catchment (Area 1) Overlay	Water Quality: POs 1.1, 1.2 and DPF 1.2 Wastewater: POs 2.2, 2.3, 2.4 and DPFs 2.2,2.3, 2.4 Stormwater: POs 3.1, 3.2, 3.3, 3.9 and DPF 3.9 Landscapes and Natural Features: PO 4.1
Native Vegetation Overlay	Environmental Protection: PO 1.1, PO 1.4 and DPF 1.1
Prescribed Water Resources Area Overlay	Prescribed Water: PO 1.1
Regulated and Significant Tree Overlay	Tree Retention and Health: PO 1.1 Ground work affecting trees: PO 2.1
Traffic Generating Development Overlay	Traffic Generating Development: POs 1.1, 1.3
Urban Transport Routes Overlay	Access-Safe Entry and Exit (Traffic Flows): PO 1.1 Access- On-Site Queuing: POs 2.1, 3.1
General Development Policies (Design)	External Appearance: POs 1.1, 1.3, 1.4, 1.5 and DPF 1.4 Safety: POs 2.3, 2.4, 2.5 Landscaping: POs 3.1, 3.2 Environmental Performance: POs 4.1, 4.2, 4.3 On-site waste Treatment: PO 6.1 and DPF 6.1 Car parking Appearance: POs 7.1, PO 7.3, 7.4, 7.5, 7.6, 7.7 Earthworks and sloping land: POs 8.1, 8.2, 8.3
General Development Policies (Design in Urban Areas)	External Appearance: POs 1.1, 1.3, 1.5 Safety: POs 2.1, 2.3, 2.4, 2.5 Landscaping: PO 3.1 Environmental Performance: POs 4.1, 4.2, 4.3 On-site Water Treatment Systems: PO 61 and DPF 6.1 Carparking Appearance: POs 7.1, PO 7.3, 7.4, 7.5, 7.6, 7.7 Earthworks and sloping land: POs 8.1, 8.2, 8.3 Site Facilities/ Waste Storage: PO 11.1
Interface between Land Uses	General Land Use Compatibility: PO 1.2 Hours of Operation: PO 2.1 Activities Generating Noise or Vibration: POs 4.1, 4.4, 4.6 and DPF 4.6 Light Spill: POs 6.1, 6.2
Transport, Access and Parking	Movement Systems: PO 1.4 Vehicle Access: POs 3.1, 3.3, 3.5, 3.6, 3.8, 3.9 and DPFs 3.5, 3.6, 3.7 Vehicle Parking Rates: PO 5.1 and DPF 5.1 Vehicle Parking Areas: POs 6.1, 6.2, 6.5. 6.6 and DPF 6.6

DO 1 envisages a township which amongst residential uses also supports a range of community and commercial facilities This is further enforced by PO 1.1 which envisages a range of development types that complement the surrounding township context. Whilst DPF 1.1 does not specifically list community facilities as a way to achieve this the proposal is none the less considered to satisfy the intent of the zone especially considering the site, the location of the building and existing use rights of the subject land.

The proposal is for a two-storey building set 45m from the front property boundary and partially below the road level. From the road the building will appear predominantly single storey in nature whilst the two-storey aspect will mainly be internally to the site but visible from several of the neighbouring properties. This is considered as acceptable and supported by DPF 2.2 which envisages two storey buildings. The 886m² footprint of the building is larger than that of most other buildings in the locality, however this is anticipated given the nature of the development which in comparison is surrounded by predominantly residential properties. But considering its design and location the proposal is considered to accord with POs 2.1 and 2.2. The building is proposed in the same location as the existing club rooms and is set a reasonable distance away from all of the neighbouring properties. The proposal therefore easily satisfies all of the relevant POs and DPFs pertaining to setback requirements.

Overlays

Hazards (Bushfire Medium Risk) Overlay

PO 5.1 seeks that the roads are designed and constructed to facilitate the safe and effective access, operations and evacuation of emergency vehicles, personnel as well as occupants and visitors. The proposal is considered to accord with the PO 5.1 as well as DPF 5.1 considering that the proposal includes alterations to the internal access track and will provide adequate access and turning area for emergency service vehicles.

Mount Lofty Ranges Water Supply Catchment (Area 1) Overlay

The Stormwater Management Plan prepared by Tonkins Consulting provides an outline on how the stormwater from the building and associated car parking area should be managed whilst also ensuring treatment of the stormwater to improve water quality. The design of the stormwater system includes a combination of kerb and gutters or a spoon drain and an underground drainage network which would drain the stormwater to the natural water course located at the north eastern side of the site. Whilst the stormwater from the building is going to be directed into the existing underground stormwater infrastructure, all of the stormwater from the car park will be treated by a gross pollutant trap before discharging into a new sediment pond with the overflow from the pond ending up in the natural water course. The Stormwater Management Plan was reviewed and supported by Council's Engineering Department. The proposal is therefore considered to be consistent with the relevant POs 1.2, 3.1, 3.2, 3.3, 3.9 and DPFs 1.2 and 3.9.

The subject site is not connected to mains sewer or the community wastewater management system and therefore an on-site waste system had to be designed to accommodate the anticipated waste generating activities. Given the size of the waste system, SA Health were

the relevant authority for assessing and approving the designed waste system (SA Health approval is included as ***Attachment 7 - SA Health Approval***). The proposal is therefore in accordance with POs 2.3, 2.4 and DPFs 2.3 and 2.4.

Native Vegetation Overlay

PO 1.1 seeks that development avoids, or where it cannot be practically avoided, minimises the clearance of native vegetation. A declaration has been provided as part of DPF 1.2 requirements stating that proposal will not involve clearance of native vegetation. Some earthworks have already occurred on site without prior approval from Council, including excavation and filling around the trees. The report that was provided by the Arborist after these works occurred has advised that they should not have any impacts on the trees in question and that the overall development will not impact on the health and integrity of the trees.

Regulated and Significant Tree Overlay

Given the proximity of some of the works to the trees and in particular relating to some of the works associated with access tracks, Council has requested that further confirmation be provided by a qualified Arborist that the proposed works are not going to require removal of any trees or impact on the health and integrity of the trees. A total of 4 regulated and 3 significant trees identified as *Eucalyptus camaldelensis* are present around the area of development. The further report concludes that tree 1 has had existing cut encroachment within the tree protection zone by 9% which is considered permissible, whilst tree 2 only had a minor encroachment. The other trees identified did not have any encroachment. The report went on further to advise that the fill that has been deposited around trees 1 and 2 had encroached within the tree protection zone by 15 to 20 percent and whilst this is above the 10% generally allowed the Arborist advised it may be considered acceptable given the tree species which are known to be tolerant to site disturbance, the fact that majority of the fill has been deposited on existing roadway where soil compaction had already occurred and because the species are indigenous species and of good health. The proposal is therefore consistent with POs 1.1 and 2.1. The report further recommends that the appropriate tree protection measures be implemented around all of the trees and this has been reflected in the recommended condition 12.

Traffic Generating Development and Urban Transport Routes Overlay

The subject land has a direct frontage and access to Lower North East Road which is an identified state-maintained road with the existing access proposed to be retained and not altered in any way. Internally the access is track is being altered to allow for better movement of vehicles and there is sufficient space on site to allow for the vehicles to queue whilst waiting to leave the site. The proposal is therefore consistent with POs 1.1 and 1.3 in Traffic Generating Development Overlay.

DO 1 of the Traffic Generating Development and Urban Transport Routes Overlay seeks safe and efficient access to and from urban transport routes. This is further reinforced by PO 3.1 which seeks that existing access points are designed to accommodate the types of, and

volumes of traffic likely to be generated by the development with the emphasis of DPF 3.1 being on where the proposed development is likely to result in a large class of vehicle access to the site. As mentioned earlier in the report, this development does not seek to alter the existing access point to the site and the only alterations are proposed internally to allow for a better flow of traffic. Whilst the proposal is for a new community facility, the essential nature of the use of land for sporting and community purposes will not change. It is expected that the building will result in more people visiting the site and will allow for a greater flexibility for the hours of operation. The use of the building is going to be predominantly for sporting and community purposes. Hiring of the area for additional function uses as identified by the applicant is going to be subordinate to the main use of the building and will only occur when the building is not used for its primary purposes. As such it is anticipated that the function use would be at maximum 12 times a year. The traffic increases are therefore expected to be minimal and as such it is envisaged that the existing access to the site is considered to be appropriate. Notwithstanding this, given the existing infrastructure on site as well as all of the existing native vegetation, it is considered that any alterations to the existing access track would be problematic and potentially impact on existing vegetation.

General Development Policies (Design & Urban Design)

DO 1 seeks development that is durable, fit for purpose, adaptable and long lasting. The proposal is considered to adequately address this desired outcome considering that the building has been designed to take into account multiple uses associated with the needs of the community as well as the needs of the sporting clubs. The building does also allow for additional function uses not associated with the community or club use and these types of uses are a common occurrence amongst other community centres.

The design of the building has been carefully considered with the front elevation predominantly maintained at a single building level and adequately addressing the street frontage in a way which clearly conveys the purpose of the building, identifies the main access and complements the streetscape. The butterfly roof design also minimises the overall bulk and scale of the building in particular from public realm whilst the mixture of materials and external colours and finishes ensures that the building complements the landscape. All plant equipment is proposed to be stored inside the building in the nominated area at ground level, whilst all waste management, loading and unloading areas will also be out of view and internal to the site. The proposal is therefore considered to be consistent with POs 1.1, 1.3, 1.4 and 1.5 as well as DPF 1.4.

A detailed landscaping plan has been provided as part of the development clearly outlining the extent of the landscaping that is proposed immediately around the building, at the front and around the existing car parking area fronting the road. The proposal is therefore consistent with POs 3.1 and 3.2.

All of the car parking on site is existing and is not proposed to be significantly altered with the proposed development. The main parking space is along the front of the property and this area has been excavated and is therefore located partially below road level. There is existing vegetation along the road boundary with additional vegetation proposed to be planted as nominated on the landscaping plan which will improve the visual appearance when viewed from the public road. No additional landscaping is proposed around the oval area. As

mentioned in the report earlier, the stormwater management plan has incorporated appropriate measures to manage and treat stormwater from the car park area before discarding into the creek. The proposal is therefore consistent with POs 7.1, PO 7.3, 7.4, 7.5, 7.6, and 7.7.

The proposed development includes a combination of cut and fill. Earthworks associated with the building is primarily in the form of excavation with the maximum cut of 3m proposed whilst maximum fill is associated with alterations to the internal driveway. Whilst the extent of earthworks is above that anticipated by DPF 8.1, these earthworks are not going to be visible from public realm or any of the neighbouring properties given their location and the fact that they will also be screened by the proposed building. Furthermore, excavation of the site by 3m ensures that the overall bulk and scale of the building is minimised. As such whilst the existent of the earthworks proposed do not fully satisfy the relevant POs and DPFs the works are nonetheless acceptable given that they are not visible outside the site and contribute to minimising the height of the building.

Interface between Land Uses

The majority of the concerns from the representors were in relation to the noise impacts that could result with the proposed building, hours of operation and additional function uses that are proposed. PO 1.2 seeks that development adjacent to a site containing a sensitive receiver or in a zone which is primary intended to accommodate sensitive receivers is designed to minimise impacts. This is done through limiting the noise impacts as well as hours of operations associated with the use. The hours of operation associated with the proposal vary depending on what the building will be used for. During weekdays the hours of operation are not proposed to exceed 10pm whilst the hours of operation on Friday and Saturday are proposed to be until 12am. PO 2.1 outlines that in assessing the hours of operation one of the things that needs to be considered is the extent to which the development is desired in the zone. Whilst DPF 2.1 specifies hours of operations for different uses it does not include a community facility. Community facility has been envisaged as a form of land use within the Township Zone however the use of the building for additional functions has not been. As mentioned earlier in the report, the predominant use of the site and the proposed building is in association with community and sporting purposes whilst the functions are proposed as secondary use at times when the building is not in use by the sporting clubs and, will not exceed 12 in a calendar year. Whilst the hours of operation are generally not consistent with those envisaged for the Township Zone, some of these actives associated with the community and sporting purposes are already occurring to the hours specified in the documentation. This is further reinforced by the fact that the recent light poles development has been approved with the condition allowing the use of lights to 10pm in the evening. It is also important to note that with the exception of the functions, all other uses that are proposed with the building are existing and have been occurring on the site for a number of years. As such given the existing use of the land and existing hours of operation, the proposed increase of hours of operation on two night a week to 12am is not considered to be significant despite not being fulling in accordance with these provisions of the Code.

POs 4.1, 4.4, 4.6 and DPF 4.6 speak to activities generating noise or vibration. Existing noises associated with sporting activities are not considered as relevant concerns of this application

as it does not consider existing use rights of the land. The main concerns would be in relation to noise impact from the activities that would occur in the building and in particular in association with the functions that are proposed which are currently not occurring on site. An acoustic report has been prepared by the applicant which looks at the noise impact on the adjacent sensitive receivers. Noise impacts related to music associated with functions has determined that the music noise at the nearest sensitive receiver will be within the day and night time criterion and has recommended that sound pressure levels from the sound system be limited to not more than 90dBA at 1m from the combined speakers and that it is checked before each function. This has also been reinforced by recommended condition 8. Noise levels from patrons has also been looked at and was deemed to be in accordance with the criteria set out by the EPA. Other noise assessment associated with the machinery/plant storage room, rubbish collection, delivery trucks, car parking have been undertaken and determined to be within the EPA guidelines. Apart from the assessment of noise levels the report has also provided recommendations relating to the construction of the building to minimise noise impacts from the building as well as internally between different rooms. The report has also put forward recommendations to limit any vibration from air conditioning units, air handling units and fans.

Transport, Access and Parking

Table 1 General off Street Car Parking Requirements seeks that community facilities provide 10 car parking spaces per 100m² of total floor area. Based on the total floor area of 967m² a total of 97 on site car parking spaces would be required. The plans submitted indicate that there is a total of 42 car parking spaces provided along the front of the property immediately next to the proposed building. Whilst this would indicate a shortfall of 55 spaces, the areas surrounding the oval are used and would continue to be used as the overflow parking area to accommodate the shortfall with the indicative layout of parking spaces around the oval illustrated on the full site plan with adequate parking numbers provided. As such whilst the nominated car parking numbers would indicate a shortfall, it is considered that the site is still able to provide adequate car parking numbers to cater for the use of the building and continued use of the site. The proposal is therefore consistent with PO and DPF 5.1. As mentioned earlier in the report, the car parking area will be landscaped to provide additional screening with the exception of area around the oval that will be utilised for car parking. All of the car parking areas are within close proximity to the building. The proposal is therefore considered to be sufficiently consistent with POs 6.1, 6.2, 6.5, 6.6 and DPF 6.6.

CONCLUSION

The proposal is for a two-storey community facility to be used predominantly in association with community and sporting activities currently occurring on site whilst also incorporating a secondary use for functions at times when the building is not being used for its primary use. The main concerns with the proposal were in relation to the bulk and scale, noise impacts associated with the use and from traffic. Whilst broader POs and DPFs do not specifically refer to community facilities in a Township Zone, it is still considered as an envisaged use by DO 1 of the Zone and this is further supported by the fact that the property is already used for community and sporting purposes. An acoustic report was prepared as a response to the representations which outlines that the building and uses associated with the building are going to be able to satisfy the necessary EPA requirements for noise levels in relation to adjacent sensitive receivers. Impacts on native

vegetation and regulated and significant trees have been managed with the arborist report confirming that proposed development is not going to require removal of the trees. Impacts on the water catchment area have also been addressed through proper treatment of stormwater. Proposal will result in an increase in traffic movements through an existing access point but this increase is not going to be significant in nature. Car parking can be achieved on-site using both the formal car park and areas around the oval.

Council staff are satisfied the proposed development is sufficiently in accord with the Planning and Design Code to warrant consent.

RECOMMENDATION

It is recommended that the Council Assessment Panel resolve that:

1) **Pursuant to Section 107(2)(c) of the Planning, Development and Infrastructure Act 2016, and having undertaken an assessment of the application against the Planning and Design Code, the application is NOT seriously at variance with the provisions of the Planning and Design Code; and**

2) **Development Application Number 21008654, by Phillips/Pilkington Architects for Two storey community facility, including function hall (200 person capacity), verandah, associated car parking, landscaping & earthworks at 1377 Lower North East Road Houghton is GRANTED Planning Consent subject to the following conditions:**

CONDITIONS

Planning Consent

1) **The development granted shall be undertaken and completed in accordance with the stamped plans and documentation, except where varied by conditions below (if any).**

2) **All external lighting shall be directed away from residential development and, shielded if necessary to prevent light spill causing nuisance to the occupiers of those residential properties.**

3) **All external materials and finishes shall be of subdued colours which blend with the natural features of the landscape and are of a low-light reflective nature**

   NOTE: browns, greys, greens and beige are suitable and galvanised iron and zincalume are not suitable

4) **All car parking spaces, driveways and manoeuvring areas shall be designed, constructed, and delineated in accordance with Australian Standard AS 2890.1:2004. Delineation and directional arrows shall be clearly visible and maintained in good condition at all times.**

   Driveways, vehicle manoeuvring and parking areas shall be constructed of compacted gravel prior to occupation and maintained in good condition at all times to the reasonable satisfaction of the Council

5) **All materials and goods shall at all times be loaded and unloaded within the confines of the subject land. Materials and goods shall not be stored on the land in areas delineated for use as car parking.**

6) **At any one time, the overall capacity of the community facility shall be limited to a maximum of 200 persons. This includes any associated outdoor areas for liquor licensing purposes.**

7) **The opening hours of the community facility shall be the following:**
Monday to Thursday: 11:00am to 10:00pm
Friday and Saturday: 10:00am to 12:00am
Sunday: 9:00am to 3:00pm

8) **Entertainment in the form of a range of music shall be contained within the building during the operating hours of the community facility and windows and doors of the building shall be kept closed during times when music is played.**

Sound pressure levels from a sound system shall be limited to not more that 90dBA at 1m from combined speakers. Sound pressure level from all speakers shall be measured prior to, and during the music amplification to ensure that it does not exceed the permitted levels. Records of the readings shall be maintained and available for inspection by the Council upon request.

9) **Prior to construction of the approved development straw bales (or other soil erosion control methods as approved by Council) shall be placed and secured below areas of excavation and fill to prevent soil moving off the site during periods of rainfall.**

10) **The applicant is advised that any proposal to clear, remove limbs or trim native vegetation on the land, unless the proposed clearance is subject to an exemption under the Regulations of the Native Vegetation Act 1991, requires the approval of the Native Vegetation Council. For further information visit:**
www.environment.sa.gov.au/Conservation/Native_Vegetation/Managing_native_vegetation

Any queries regarding the clearance of native vegetation should be directed to the Native Vegetation Council Secretariat on 8303 9777. This must be sought prior to Full Development Approval being granted by Council.

11) **Landscaping, detailed in plans prepared by Outer Space and stamped as part of this planning consent shall be planted in the planting season following completion of work and maintained in good health and condition at all times. Any such vegetation shall be replaced in the next planting season if and when it dies or becomes seriously diseased.**

12) **The works in relation to the protection of trees outlined in the Arborist's Report prepared by Project Green and submitted as part of this application as a strategy for management of the trees are to be undertaken simultaneously with the commencement of building works on the site.**

13) **Prior to occupation of the approved building, all surface water from carparking or hardstand areas shall be directed to a proprietary pollutant treatment device capable of removing oils, silts, greases, and gross pollutants prior to discharge to Council's and the EPA's reasonable satisfaction.**

14) All stormwater from the building is to be directed into the existing underground stormwater infrastructure within one month of roof cladding being installed.

15) All waste shall be removed from the subject land at least once weekly. Collection of waste shall be carried out only between the hours of 7am and 5pm on any day.

16) The number of functions in a calendar year not associated with community or sporting events shall not exceed 12 per year. A record of all events shall be maintained and available for inspection by the Council on request.

Such functions shall have a maximum capacity of 200. Any increase in the number of functions/capacity will require separate development approval.

Conditions imposed by Environment Protection Authority under Section 122 of the Act

17) No irrigation of the oval with treated wastewater is to occur.

18) All bores located on site must be decommissioned prior to the commissioning of the wastewater system.

19) The wastewater system must be fitted with an audible and visual alarm to alert a person of responsibility of any and all faults.

20) The detailed design of the stormwater management system must incorporate the outcomes modelled in the concept design outlined in the 'Houghton Memorial Oval Stormwater Management Plan' prepared by Tonkin Consulting and dated 17 April 2018.

ADVISORY NOTES

General Notes

1) **No work can commence on this development unless a Development Approval has been obtained. If one or more consents have been granted on this Decision Notification Form, you must not start any site works or building work or change of use of the land until you have received notification that Development Approval has been granted.**
2) **Appeal rights – General rights of review and appeal exist in relation to any assessment, request, direction or act of a relevant authority in relation to the determination of this application, including conditions.**
3) **This consent or approval will lapse at the expiration of 2 years from its operative date, subject to the below or subject to an extension having been granted by the relevant authority.**
4) **Where an approved development has been substantially commenced within 2 years from the operative date of approval, the approval will then lapse 3 years from the operative date of the approval (unless the development has been substantially or fully completed within those 3 years, in which case the approval will not lapse).**
5) **A decision of the Commission in respect of a development classified as restricted development in respect of which representations have been made under section 110 of the Act does not operate—**
    a. **until the time within which any person who made any such representation may appeal against a decision to grant the development authorisation has expired; or**

b. if an appeal is commenced—

i. until the appeal is dismissed, struck out or withdrawn; or

ii. until the questions raised by the appeal have been finally determined (other than any question as to costs).

Advisory Notes requested by Environment Protection Authority under Section 122 of the Act

6) The applicant/owner/operator are reminded of its general environmental duty, as required by section 25 of the Environment Protection Act 1993, to take all reasonable and practicable measures to ensure that activities on the site and associated with the site (including during construction) do not pollute the environment in a way which causes or may cause environmental harm.

7) The EPA recommends that management processes and responsibilities for the operation and management of the wastewater treatment system and irrigation area are documented in an operational management plan.

8) Further information and resources on managing construction activities to minimise impacts to waste quality can be found on the EPA website Building & construction | EPA. In particular, the Code of practice for the building and construction industry lists the circumstances in which a soil erosion drainage management plan should be prepared.

9) More information about the Environment Protection Authority and the Environment Protection Act and policies can be found at: www.epa.sa.gov.au

OFFICER MAKING RECOMMENDATION

Name: Doug Samardzija
Title: Acting Team Leader-Statutory Planning



HOUGHTON, INGLEWOOD & HERMITAGE MEMORIAL PARK INC.



Doug Samardzija
Statutory Planner | Strategy & Development
Adelaide Hills Council
26 Onkaparinga Valley Road,
Woodside SA, 5244

Dear Doug,

Please find information requested below.

Point 1. Title. See attached.

Point 3.1 Hours of operation.
The Beer garden is for illustration purposes only and does not form part of this application.

Hours of operation will be primarily governed by the new liquor licence once the building is completed or near completed but the current and ongoing usage is listed below.

AFL FOOTBALL
Tuesday Training - 5pm to 10pm during Preseason and football season
Wednesday Darts - 7pm to 10pm during Preseason and football season
Thursday Training - 5pm to 10pm during Preseason and football season
Saturday Match Day every other week – 12pm to 12am during football season
Sunday Junior Match Day from 29/5/2018 – 9am to 11am during football season

Cricket
Saturday Match Day – 10am to 10pm during cricket season

CWA Houghton Branch
Wednesday Day Group - 11am to 3pm
Wednesday Night Group - 11am to 3pm

Community Engagement
Friday Friday Night Tea – 5pm to 12am

Adelaide Hills Council
Monday – Friday Outreach activities as required.

Point 3.2 People employed
It is anticipated that the facility will be managed by a paid centre manager, supported by a significant number of volunteers.

Point 3.3 Non Sport functions
We have started a conversation with the Adelaide Hills council to utilise the facility during weekdays for community engagement activities in line with their activities at The Hut Community Centre, Torrens Valley Community Centre and The Summit Community Centre.

The facility will be available for the community to utilse for Weddings, Birthdays etc with in the general hours of operation of the community centre but will be limited as the Houghton District football club requires ovever 50% use of the facility.

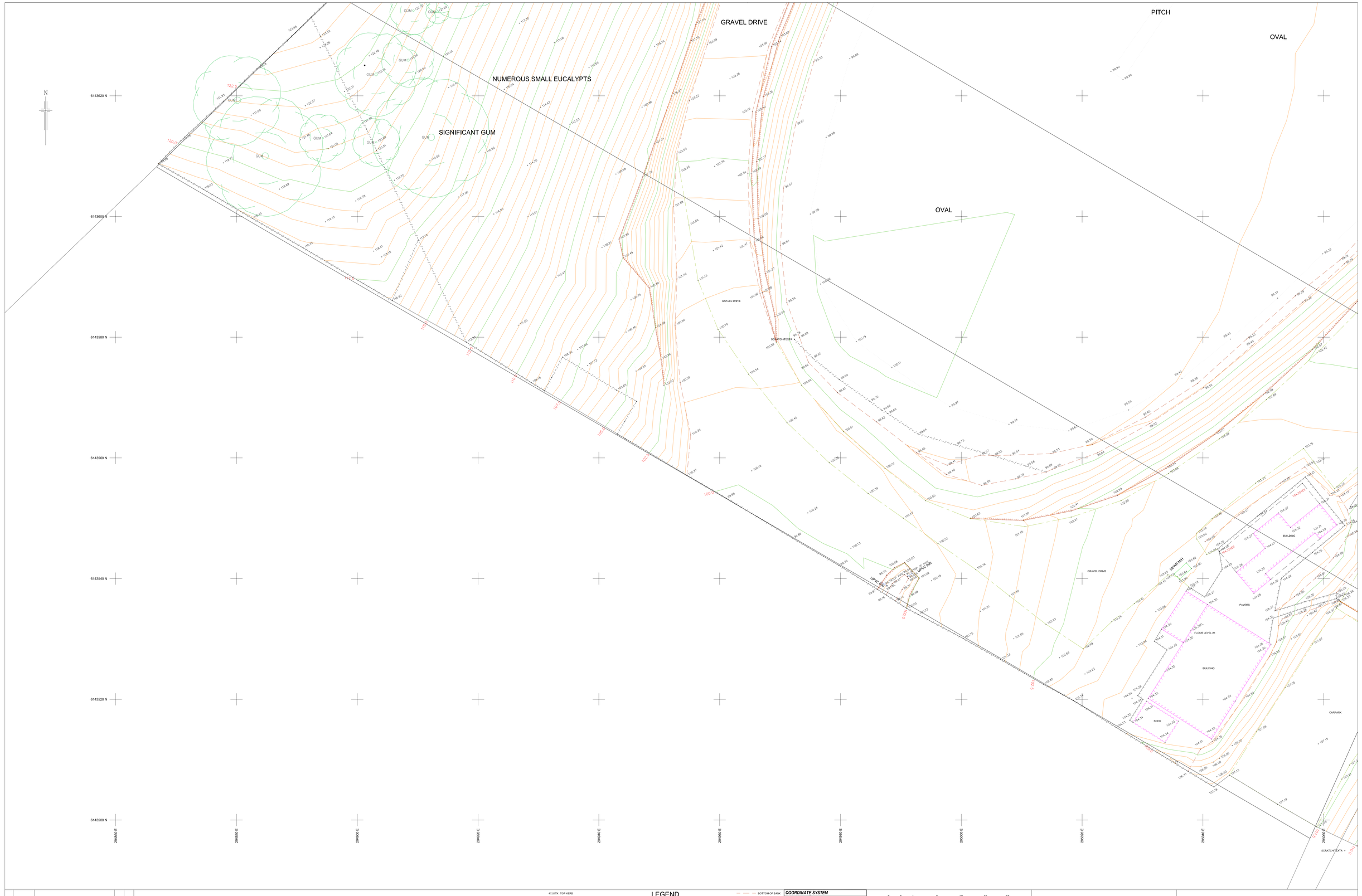
Point 3.4 Capacity of venue
The capacity of the venue will be governed by the new liquor licence and is expected to be in the order of a 200 seated capacity.

Point 3.5 Entertainment
Entertainment in the form of amplified and live music associated with functions will be contained to indoors and be of appropriate noise level not exceed the EPA guidelines, ensuring that the amenity of the locality is maintained.

Point 3.6 Existing buildings
The brick toilet and canteen block is expected to be demolished after the completion of the new facility but the existing shed clubrooms is expected to be retained for storage.

Regards,

Matt Thomas
President
Houghton, Inglewood & Hermitage Memorial Park Inc.



REV	DATE	DESCRIPTION	CALC	FIELD
		ADDITIONS, AMENDMENTS AND APPROVALS		

LEGEND

- 47.51TK TOP KERB
- 47.36WT WATER TABLE
- 48.19FL FLOOR LEVEL
- 48.12IL INVERT LEVEL
- TAP
- WATER METER
- SPRINKLR / IRRIG VALVE
- HYDRANT
- DOMESTIC OUTLET
- DOWNPIPE
- DOMESTIC SUMP
- STORMWATER MHOLE
- SEP / GRATING
- TEL. COMM. PILLAR / PIT
- TRAFFIC LIGHT
- SIGN / BUS SIGN
- LITTER BIN
- MAIL BOX / SIGNAL BOX
- TICKET MACHINE
- ROAD / ELEC. SERVICE
- WATER SV / FP
- ELEC. / GAS METER
- GAS SERVICE
- PSM
- PEG / TBM
- SURVEY MARKS
- BOREHOLE
- POWER / LIGHT POLE
- CABLE MARKER
- STROBE / WOODEN POLE
- POST / BOLLARD
- SEWER MH / IO / SP
- UNKNOWN POINT / SERVICE
- EDGE OF VEGETN
- ROAD SIGN / HOARD.
- TREE / SHRUB
- BOTTOM OF BANK
- TOP OF BANK
- CHANGE OF GRADE
- DRAIN
- SEWER PIPE UG
- TEL. COMM. UG
- WATER PIPE UG
- BUILDING
- WALL
- GE BUILDING
- CONCRETE
- FENCE
- GATE

COORDINATE SYSTEM	
VERTICAL:	
HORIZONTAL:	ARBITRARY (SHIFTED TO MATCH THE DCDB DATABASE)

0 2 4 8 12 16 20 m

1:200 ORIGINAL SHEET SIZE A0

Notes:
Property boundaries shown hereon have been compiled from the government records and have not been verified by field survey.

CONTOUR INTERVAL:	0.5m	
SURVEY:	DRP	JAN 2019
DRAWN:	DRP	25-1-2019
CHECKED:	DRP	-

DANIEL PALMER
152 RANGE ROAD SOUTH
HOUGHTON, SA, 5131

MOB: 0408834886
EMAIL Drpalmer@Adam.com.au

TOPOGRAPHICAL SURVEY FOR WASTE WATER DESIGN HOUGHTON OVAL

DRAWING No. Houghton Oval 2019 2019

SHEET 1 OF 4

REVISION

N

295400 E
295500 E
295600 E
295700 E
295800 E
295900 E
296000 E
296100 E
296200 E
296300 E
296400 E

6143760 N
6143740 N
6143720 N
6143700 N
6143680 N
6143660 N
6143640 N

LARGE PINE

NUMEROUS SMALL EUCALYPTS

CLUB ROOMS
FLOOR LEVEL

CARPARK

EDGE EAVES
FLOOR LEVEL #1
SWITCH MH

OVAL

DUGOUT

GRAVEL DRIVE

SHED

SCOREBOARD

SCRATCH/TEXT'A'

PITCH

SWALE START

DEEP CREEK AREA

REV	DATE	DESCRIPTION	CALC	FIELD
ADDITIONS, AMENDMENTS AND APPROVALS				

LEGEND

- 47.51TK TOP KERB
- 47.36WT WATER TABLE
- 48.18FL FLOOR LEVEL
- 48.12IL INVERT LEVEL
- TAP
- WATER METER
- SPRINKLR / RPBG VALVE
- HYDRANT
- DOMESTIC OUTLET
- DOWNPIPE
- DOMESTIC SUMP
- STORMWATER MHOLE
- SEP / GRATING
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- TRAFFIC LIGHT
- SIGN / BUS SIGN
- LITTER BIN
- MAIL BOX / SIGNAL BOX
- TICKET MACHINE
- ROAD / ELEC. SERVICE
- WATER SV / FP
- ELEC. / GAS METER
- GAS SERVICE
- PSM
- PEG / ITEM
- SURVEY MARKS
- BORE/HOLE
- POWER / LIGHT POLE
- CABLE MARKER
- STOBIE / WOODEN POLE
- POST / BOLLARD
- SEWER MH / EO / EP
- UNKNOWN POINT / SERVICE
- EDGE OF VEGETN
- ROAD SIGN / HOARD.
- TREE / SHRUB
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- FENCE
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COORDINATE SYSTEM

VERTICAL:
HORIZONTAL: ARBITRARY (SHIFTED TO MATCH THE DCDB DATABASE)

0 2 4 8 12 16 20 m

1:200

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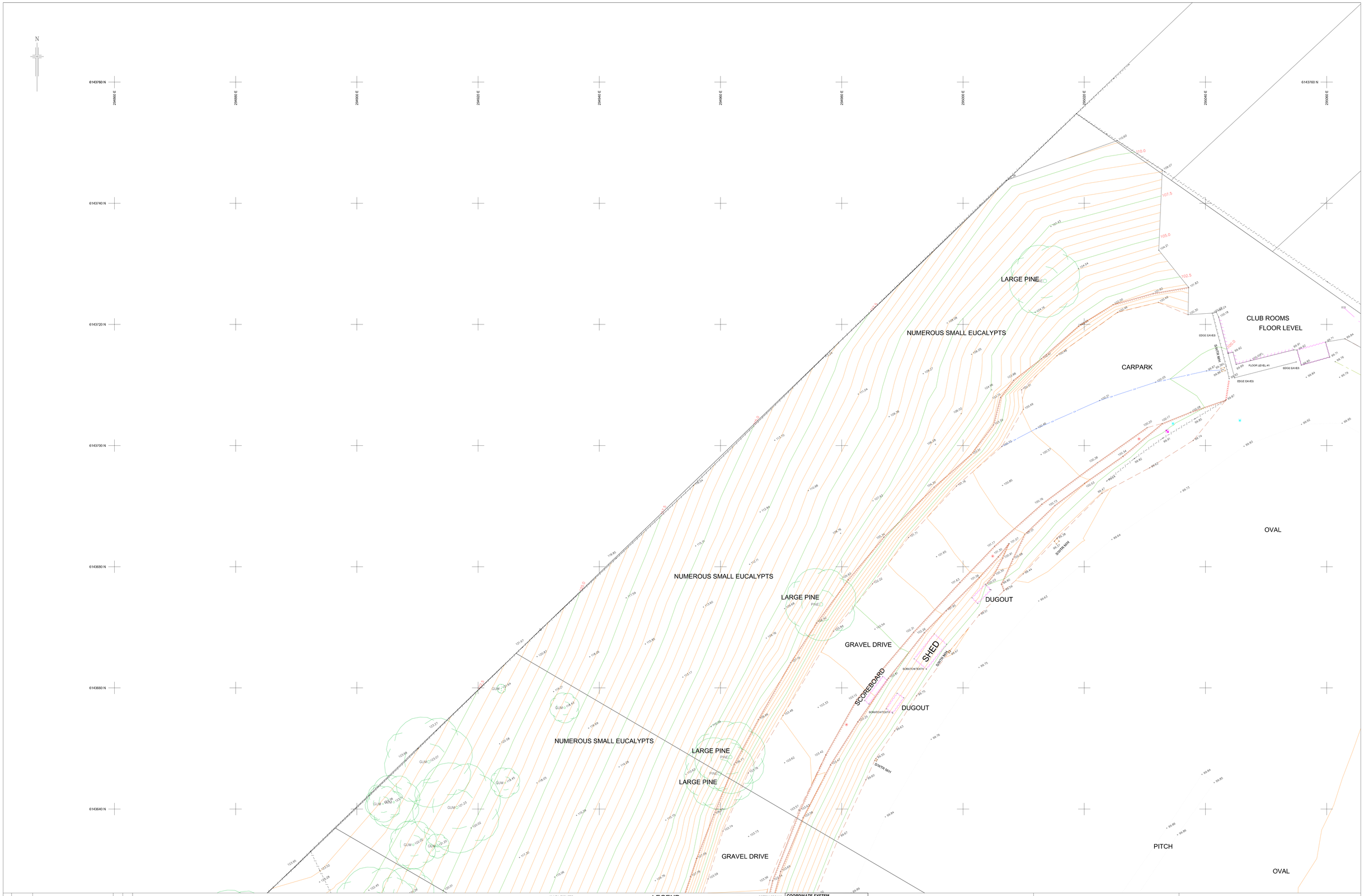
TOPOGRAPHICAL SURVEY FOR WASTE WATER DESIGN HOUGHTON OVAL

DRAWING No. Houghton Oval 2019 2019

SHEET 3 OF 4

REVISION



REV	DATE	DESCRIPTION	CALC	FIELD

ADDITIONS, AMENDMENTS AND APPROVALS

LEGEND

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47.30WT WATER TABLE
45.16FL FLOOR LEVEL
48.12IL INVERT LEVEL
TAP
WATER METER
SPRINKLR / IRRIG VALVE
HYDRANT
DOMESTIC OUTLET
DOWNPIPE
DOMESTIC SUMP
STORMWATER MHOLE
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COORDINATE SYSTEM

VERTICAL:	
HORIZONTAL:	ARBITRARY (SHIFTED TO MATCH THE DCDB DATABASE)

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CHECKED:	DRP	-

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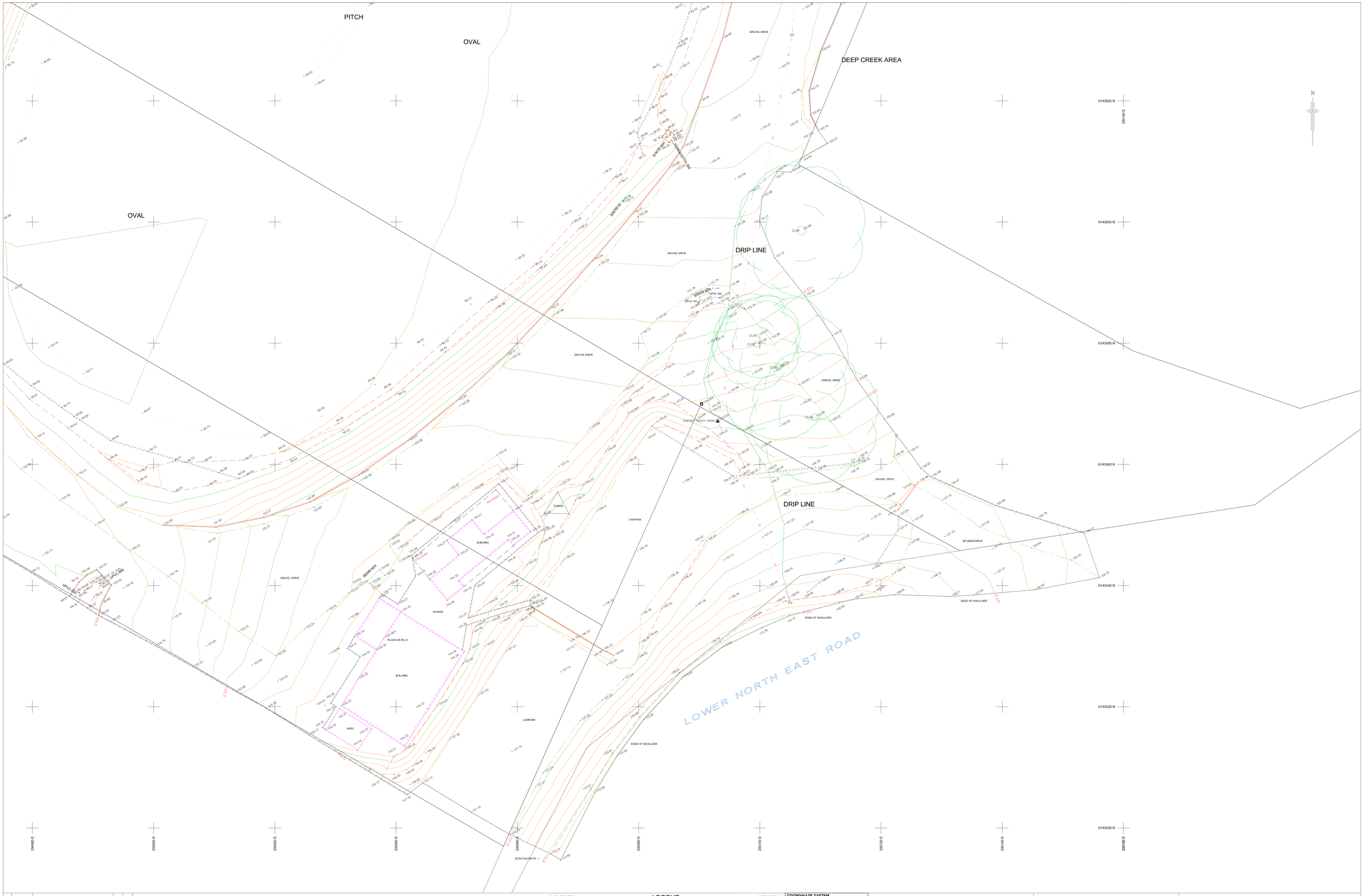
TOPOGRAPHICAL SURVEY FOR WASTE WATER DESIGN HOUGHTON OVAL

DRAWING No. Houghton Oval 2019 2019

SHEET 2 OF 4

REVISION



REV	DATE	DESCRIPTION	CALC	FIELD
		ADDITIONS, AMENDMENTS AND APPROVALS		

LEGEND

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47.30WT WATER TABLE
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DOMESTIC OUTLET
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DOMESTIC SUMP
STORMWATER MHOLE
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TRAFFIC LIGHT
SIGN / BUS SIGN
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COORDINATE SYSTEM

VERTICAL:	
HORIZONTAL:	ARBITRARY (SHIFTED TO MATCH THE DCDB DATABASE)

0 2 4 8 12 16 20 m

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ORIGINAL SHEET SIZE A0

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SURVEY:	DRP	JAN 2019
DRAWN:	DRP	25-1-2019
CHECKED:	DRP	-

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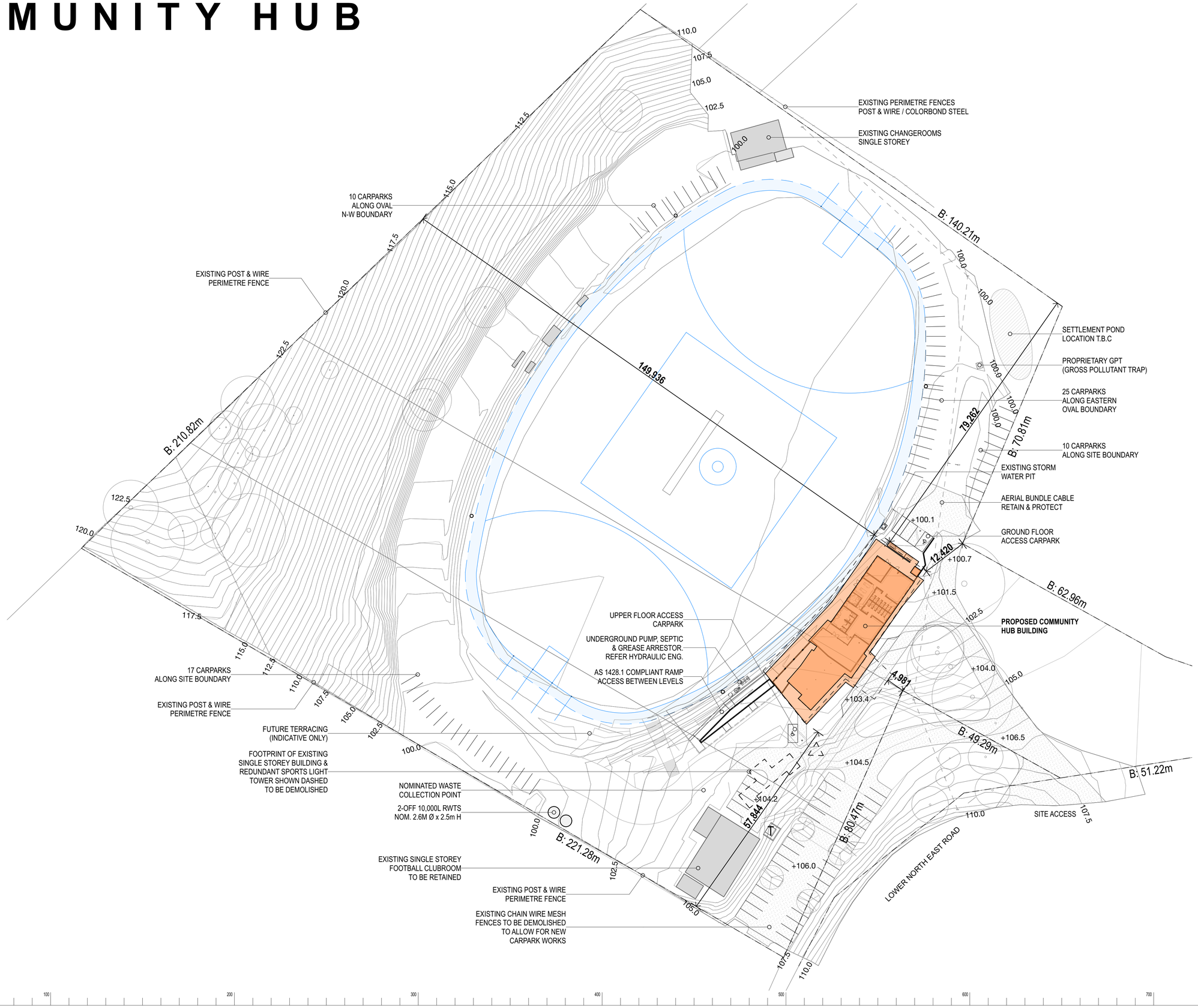
TOPOGRAPHICAL SURVEY FOR WASTE WATER DESIGN HOUGHTON OVAL

DRAWING No. Houghton Oval 2019 2019

SHEET 4 OF 4

REVISION

20602 HOUGHTON MEMORIAL OVAL COMMUNITY HUB



FOR APPROVAL

/Volumes/PPA Data/JOB FILES/20602 Houghton Memorial Oval Sports Community Building/20602 Drawings/CAD Files/Model/20602 Houghton Oval Community Hub - DA-2021-08-30.pln

NOTES

BUILDER MUST VERIFY ALL DIMENSIONS AT JOB BEFORE COMMENCING ANY WORK OR SHOP DRAWINGS. ANY DISCREPANCIES TO BE REPORTED TO ARCHITECT IMMEDIATELY.

BUILDER TO ALLOW FOR ALL DEMOLITION NECESSARY TO COMPLETE NEW WORK. ITEMS REQUIRED TO BE DEMOLISHED OR REMOVED IN ORDER TO COMPLETE NEW WORK, BUT NOT NOTED, CANNOT BE CLAIMED AS A VARIATION.

Rev	Issue	Date
P3	Re-issued for Planning Consent	1/9/21
P2	Revised Site Plan for Planning	17/6/21
P1	Issued for Planning Consent	5/5/21

PROJECT NORTH

Phillips/Pilkington Architects

165 MacKinnon Parade
North Adelaide, South Australia 5006
Phone: +61 (8) 8239 9000
admin@phillipspilkington.com.au
www.phillipspilkington.com.au

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PROJECT DIRECTORY
ARCHITECT: PHILLIPS/PILKINGTON ARCHITECTS PH: 8239 9000
SERVICES ENGINEER: BESTEC PH: 8232 4442
CIVIL / STRUCTURAL: CPR ENGINEERS PH: 8332 1344

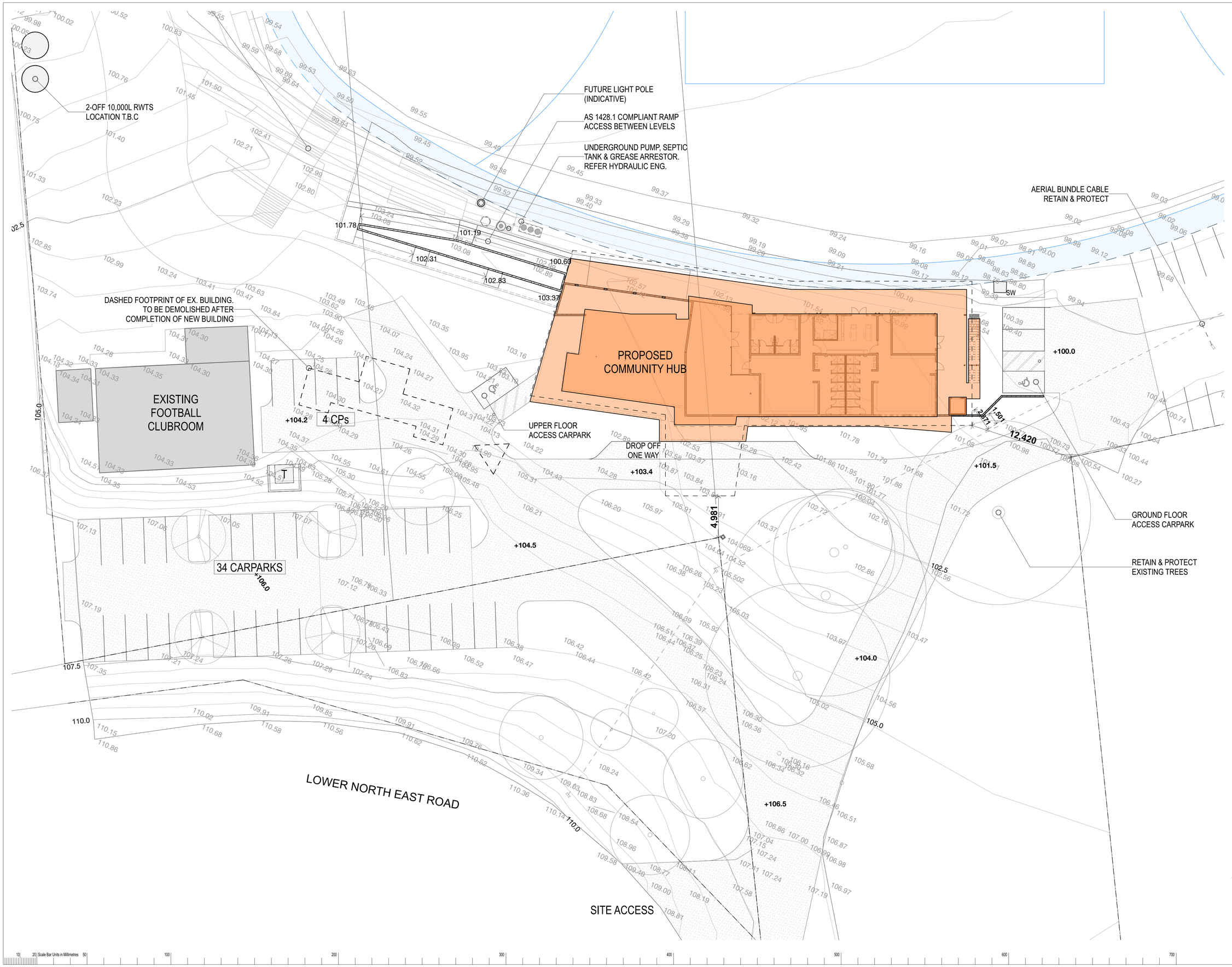
CLIENT
Houghton Memorial Oval Committee

PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

DRAWING TITLE:
FULL SITE PLAN

SCALE:	**1:500**	SHEET SIZE	**A1**
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	1/9/21	DATE:	1/9/21

PROJECT NO / DRAWING NO: **20602 - DA01**
REVISION: **P3**



FOR APPROVAL

/Volumes/PPA Data/JOB FILES/20602 Houghton Memorial Oval Sports:Community Building/20602 Drawings/CAD Files/Model/20602 Houghton Oval Community Hub - DA 2021-08-30.pln

NOTES

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Rev	Issue	Date
P2	Re-issued for Planning Consent	1/9/21
P1	Issued for Planning Consent	5/5/21

PROJECT NORTH

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CIVIL / STRUCTURAL: CPR ENGINEERS PH: 8332 1344

CLIENT
Houghton Memorial Oval Committee

PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

DRAWING TITLE:
SITE PLAN

SCALE:	1:200	SHEET SIZE	A1
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	1/9/21	DATE:	1/9/21

PROJECT NO / DRAWING NO: **20602 - DA02**

REVISION: **P2**



FOR APPROVAL

/Volumes/PPA Data/JOB FILES/20602 Houghton Memorial Oval Sports Community Building/20602 Drawings/CAD Files/Model/20602 Houghton Oval Community Hub - DA-2021-08-30.pln

NOTES

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BUILDER TO ALLOW FOR ALL DEMOLITION NECESSARY TO COMPLETE NEW WORK. ITEMS REQUIRED TO BE DEMOLISHED OR REMOVED IN ORDER TO COMPLETE NEW WORK, BUT NOT NOTED, CANNOT BE CLAIMED AS A VARIATION.

Rev	Issue	Date
P2	Re-issued for Planning Consent	1/9/21
P1	Issued for Planning Consent	5/5/21

PROJECT NORTH

Phillips/Pilkington Architects

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SERVICES ENGINEER: BESTEC PH: 8232 4442
CIVIL / STRUCTURAL: CPR ENGINEERS PH: 8332 1344

CLIENT
Houghton Memorial Oval Committee

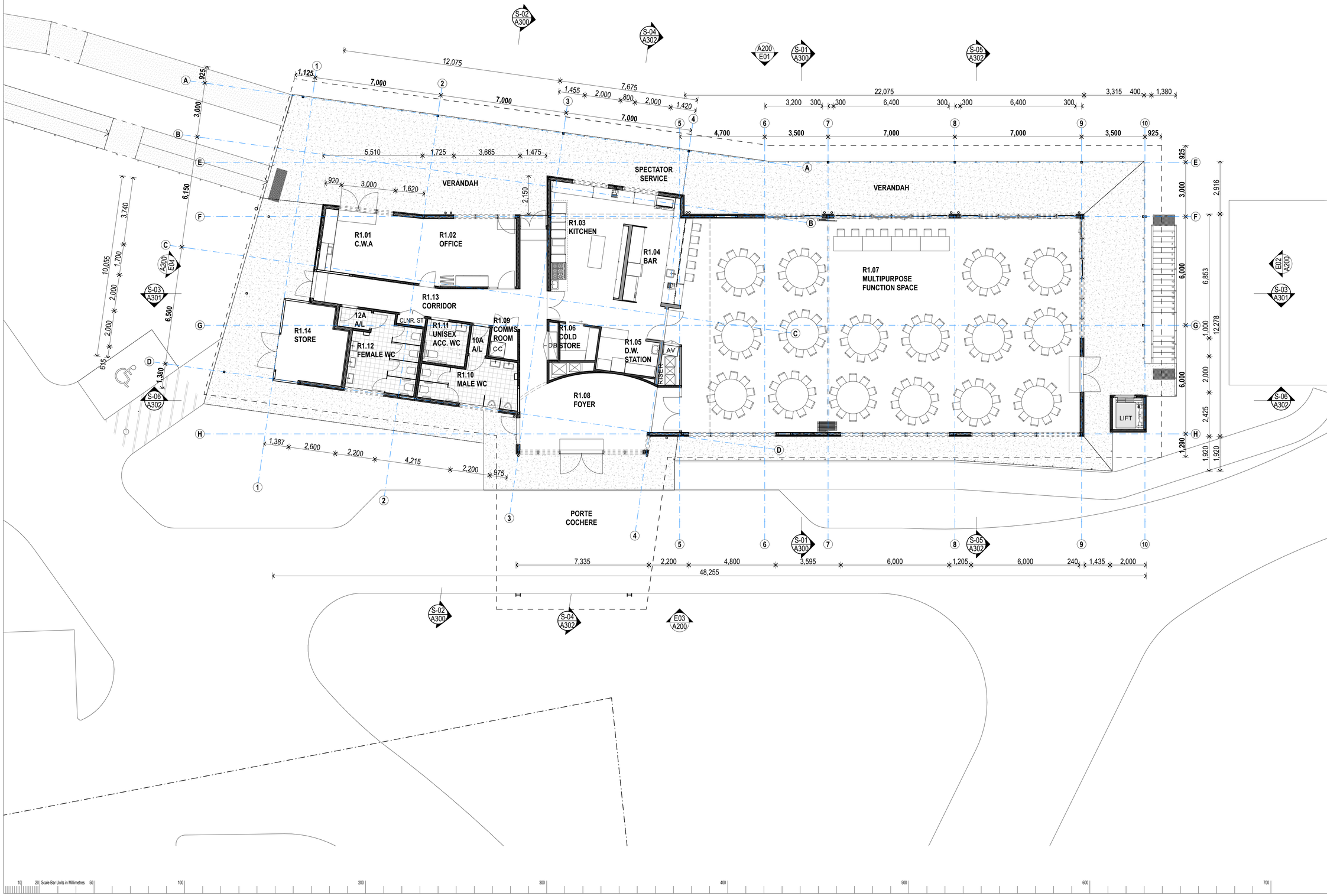
PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

DRAWING TITLE:
GROUND FLOOR PLAN

SCALE:	**1:100**	SHEET SIZE	**A1**
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	1/9/21	DATE:	1/9/21

PROJECT NO / DRAWING NO:	REVISION:
20602 - DA03	**P2**

10 20 Scale Bar Units in Millimetres 50 100 200 300 400 500 600 700



FOR APPROVAL

/Volumes/PPA Data/JOB FILES/20602 Houghton Memorial Oval Sports Community Building/20602 Drawings/CAD Files/Model/20602 Houghton Oval Community Hub-DA-2021-08-30.pln

NOTES

BUILDER MUST VERIFY ALL DIMENSIONS AT JOB BEFORE COMMENCING ANY WORK OR SHOP DRAWINGS. ANY DISCREPANCIES TO BE REPORTED TO ARCHITECT IMMEDIATELY.

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Rev	Issue	Date
P2	Re-issued for Planning Consent	1/9/21
P1	Issued for Planning Consent	5/5/21

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ARCHITECT: PHILLIPS/PILKINGTON ARCHITECTS PH: 8239 9000
SERVICES ENGINEER: BESTEC PH: 8232 4442
CIVIL / STRUCTURAL: CPR ENGINEERS PH: 8332 1344

CLIENT
Houghton Memorial Oval Committee

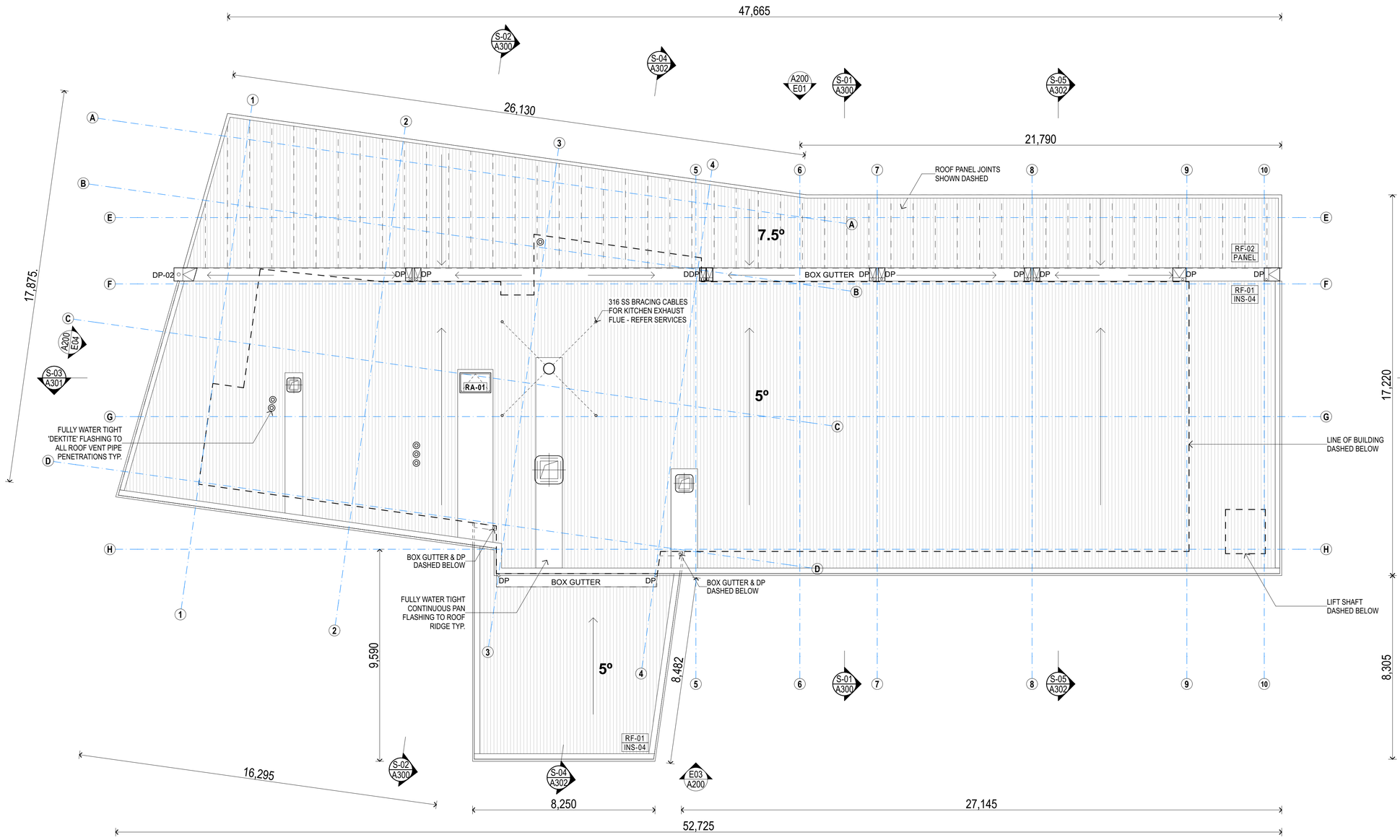
PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

DRAWING TITLE:
FIRST FLOOR PLAN

SCALE:	**1:100**	SHEET SIZE	**A1**
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	1/9/21	DATE:	1/9/21

PROJECT NO / DRAWING NO:	REVISION:
20602 - DA04	**P2**

10 20 Scale Bar Units in Millimetres 50 100 200 300 400 500 600 700



ROOF FINISH

CORRUGATED STEEL ROOF
CB SHALE GREY

FOR APPROVAL

/Volumes/PPA Data/JOB FILES/20602 Houghton Memorial Oval Sports Community Building/20602 Drawings/CAD Files/Model/20602 Houghton Oval Community Hub - DA-2021-08-30.pln

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P1	Issued for Planning Consent	5/5/21

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SERVICES ENGINEER: BESTEC PH: 8232 4442
CIVIL / STRUCTURAL: CPR ENGINEERS PH: 8332 1344

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Houghton Memorial Oval Committee

PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

DRAWING TITLE:
ROOF PLAN

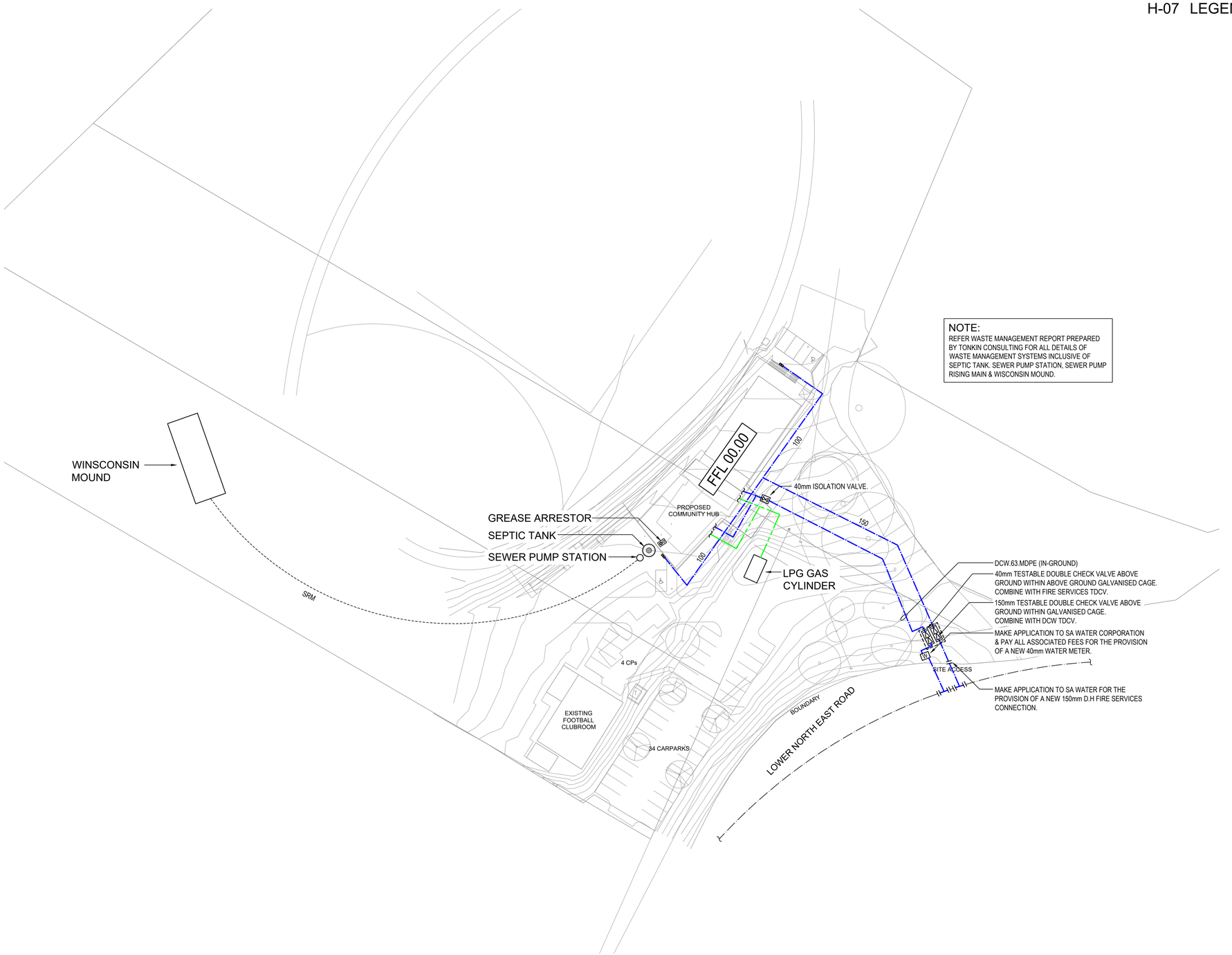
SCALE:	**1:100**	SHEET SIZE	**A1**
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	1/9/21	DATE:	1/9/21

PROJECT NO / DRAWING NO: **20602 - DA05**
REVISION: **P2**

Scale Bar Units in Millimetres 10 20 50 100 200 300 400 500 600 700

DRAWING INDEX

H-01 SITE PLAN
PLUMBING DRAINAGE & RETICULATION
H-02 GROUND FLOOR - PLUMBING DRAINAGE
H-03 FIRST FLOOR - PLUMBING DRAINAGE
H-04 ROOF PLAN
H-05 GROUND FLOOR - PLUMBING RETICULATION
H-06 FIRST FLOOR - PLUMBING RETICULATION
H-07 LEGEND OF SYMBOLS & DETAILS



NOTE:
REFER WASTE MANAGEMENT REPORT PREPARED BY TONKIN CONSULTING FOR ALL DETAILS OF WASTE MANAGEMENT SYSTEMS INCLUSIVE OF SEPTIC TANK. SEWER PUMP STATION, SEWER PUMP RISING MAIN & WISCONSIN MOUND.

BESTEC
DOCUMENT ISSUE
Date
3–May–21
BESTEC
ABN 43 909 272 047
BUILDING ENGINEERING
SERVICES TECHNOLOGIES
CONSULTING ENGINEERS

PRELIMINARY

P:\56785\Drawings\HYD\56785 H-01.dwg 3/05/2021 12:08:54 PM emmanuel kweji

Issue	Amendments	Date	Init.
01	PRELIMINARY ISSUE	08.04.21	EKW
02	PRELIMINARY ISSUE	03.05.21	EKW

North

Architect
Phillips/Pilkington Architects

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Adelaide 5001

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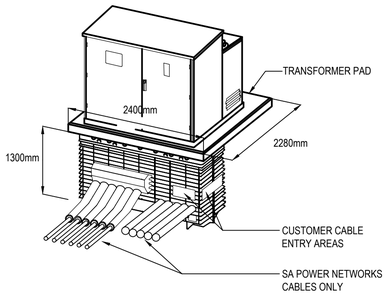
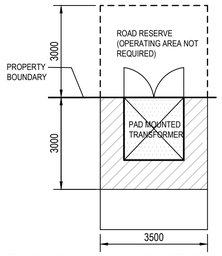
Project: HOUGHTON MEMORIAL OVAL COMMUNITY HUB'	Drawn: EKW	Checked:	Date: MAY 2021
Title: HYDRAULIC SERVICES	Designed: VTR	Checked:	Scale: 1:500 @A1
SITE PLAN PLUMBING DRAINAGE & RETICULATION	Project Number: 56785	Drawing Number: H-01	Issue: 02



TYPICAL FOOTING
ARRANGEMENT FOR MK7
PADMOUNT TRANSFORMER
NOT TO SCALE



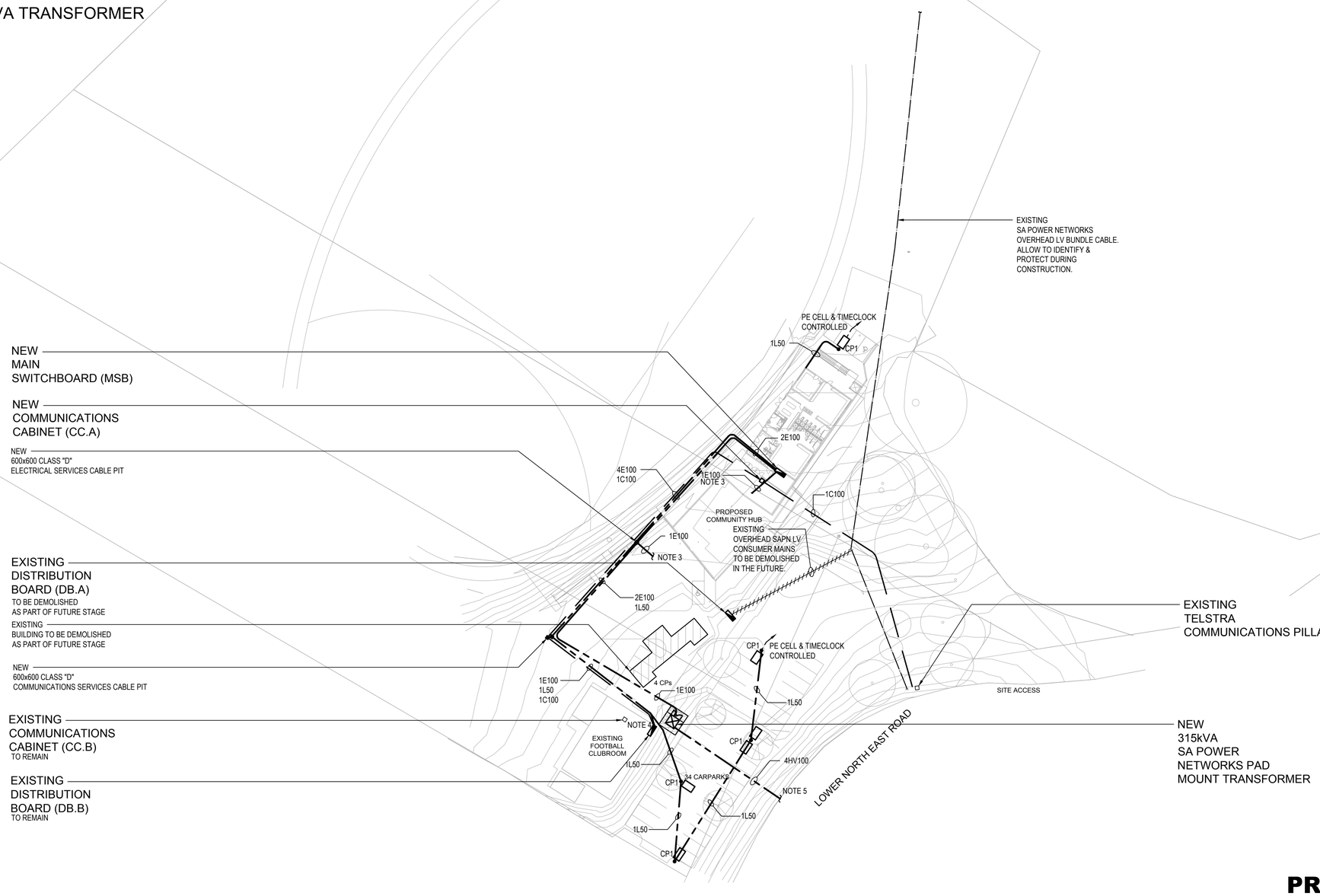
TYPICAL LAYOUT OF SITE PLAN
EASEMENT DIMENSIONS
FOR 315kVA TRANSFORMER
NOT TO SCALE

DRAWING INDEX

E-01 SITE PLAN
E-02 ELECTRICAL SINGLE LINE & TELECOMMUNICATIONS SCHEMATIC DIAGRAMS
E-03 GROUND FLOOR - POWER, COMMUNICATIONS, SECURITY, LUMINAIRE & FIRE DETECTION ARRANGEMENT
E-04 FIRST FLOOR - POWER, COMMUNICATIONS, SECURITY, LUMINAIRE & FIRE DETECTION ARRANGEMENT
E-05 ROOF PLAN - POWER ARRANGEMENT & LEGEND OF SYMBOLS

NOTES

1. EXISTING UNDERGROUND SERVICES HAVE NOT BEEN IDENTIFIED. ALLOW TO UNDERTAKE UNDERGROUND ELECTRONIC SURVEYS ON SITE PRIOR TO UNDERTAKING ANY NEW TRENCHING WORKS. ARRANGE ANY NEW TRENCHING WORKS. ARRANGE AND PAY ALL ASSOCIATED COSTS. SHOW SURVEYED LOCATIONS OF ALL NEW AND IDENTIFIED EXISTING SERVICES ON AS-BUILT DRAWINGS.
2. ALLOW TO COORDINATE ALL TRENCHING WORKS WITH CIVIL/STORM WATER AND HYDRAULICS SERVICES CONTRACTORS.
3. PROVIDE 1E100 CONDUIT STUB FOR CONNECTION OF FUTURE BEER GARDEN AND DUAL SPORTS LIGHTING.
4. CONDUITS TO TURN UP AND RISE EXTERNALLY ON WALL TO ACCESS CEILING SPACE. CABLES TO PENETRATE AT HIGH LEVEL AND RETICULATE TO DISTRIBUTION BOARD/ COMMUNICATIONS CABINET AS REQUIRED. PROVIDE TOP HAT COVER PAINTED TO MATCH EXISTING BUILDING FINISH.
5. HIGH VOLTAGE CONDUITS TO EXTEND 1 METRE PAST BOUNDARY. COORDINATE LOCATION WITH SA POWER NETWORKS.



BESTEC
DOCUMENT ISSUE
Date
3–May–21
BESTEC ABN 43 909 272 047 BUILDING ENGINEERING SERVICES TECHNOLOGIES CONSULTING ENGINEERS

PRELIMINARY

P:\56785\Drawings\ELEC\56785 E-01.dwg 3/05/2021 1:30:59 PM neda foroud

Issue	Amendments	Date	Init.
01	PRELIMINARY ISSUE	08.04.20	NFO
02	PRELIMINARY ISSUE	03.05.20	NFO

North

Architect

Phillips/Pilkington Architects PP

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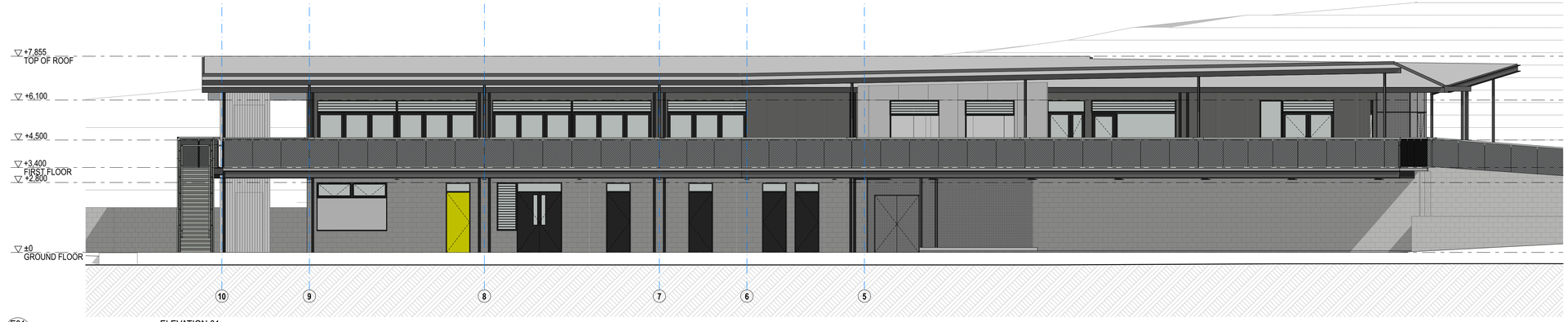
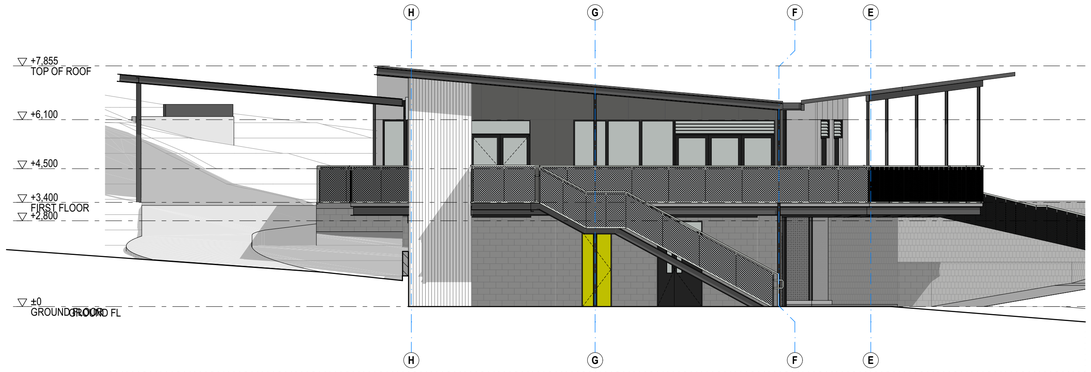
Project: HOUGHTON MEMORIAL OVAL COMMUNITY HUB	Drawn: NFO	Checked:	Date: MAY 2021
Title: ELECTRICAL SERVICES	Designed: AJG	Checked:	Scale: 1:500 @A1
SITE PLAN	Project Number: 56785	Drawing Number: E-01	Issue: 02

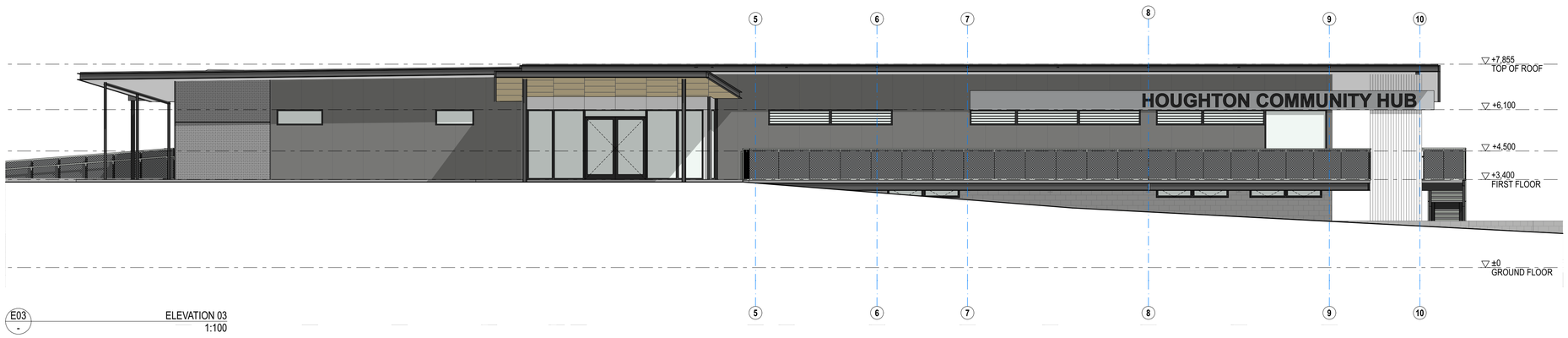
LIQOUR LICENCING
PROPOSED AREA



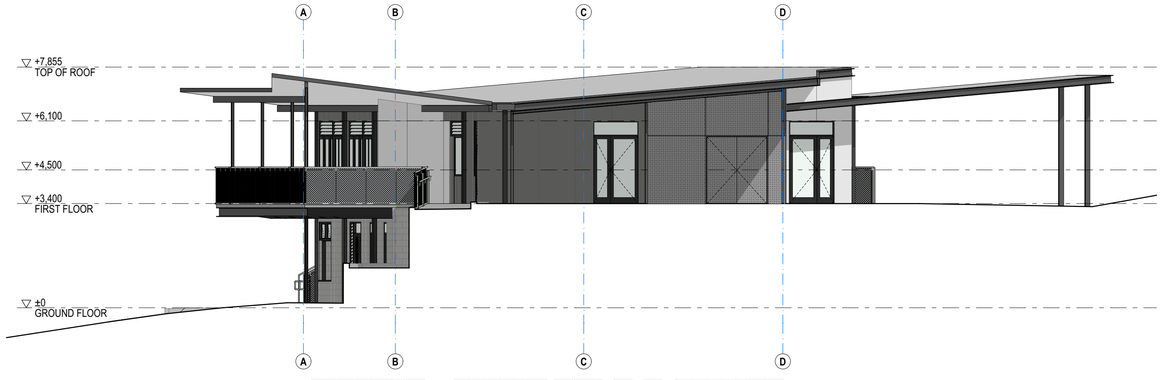
E01 - ELEVATION 01
1:100



E02 - ELEVATION 02
1:100



E03 - ELEVATION 03
1:100



E04 - ELEVATION 04
1:100

10 20 Scale Bar Units in Millimetres 50 100 200 300 400 500 600 700

MATERIALS



BARESTONE CFC PANEL
COLOUR: ASH



BARESTONE CFC PANEL
COLOUR: ORIGINAL



CONCRETE BLOCK



CORRUGATED STEEL ROOF
CB SHALE GREY



PERFORATED METAL
SCREENING



HOT DIPPED GALV STEEL



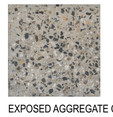
STAINLESS STEEL MESH
BALUSTRADE



TRANSLUCENT WHITE
POLYCARBONATE



PLYWOOD VENEER
PORTE COCHERE SOFFIT



EXPOSED AGGREGATE CONCRETE
(VERANDAH, RAMPS, PATHS)

NOT FOR CONSTRUCTION

BIMcloud: admins-iMac.local - BIMcloud Basic for ARCHICAD 23/20602 Houghton Oval Community Hub - 2021-03-17

NOTES

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Rev	Issue	Date
P1	Issued for Planning Consent	5/5/21

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SERVICES ENGINEER: BESTEC PH: 8232 4442
CIVIL / STRUCTURAL: CPR ENGINEERS PH: 8332 1344

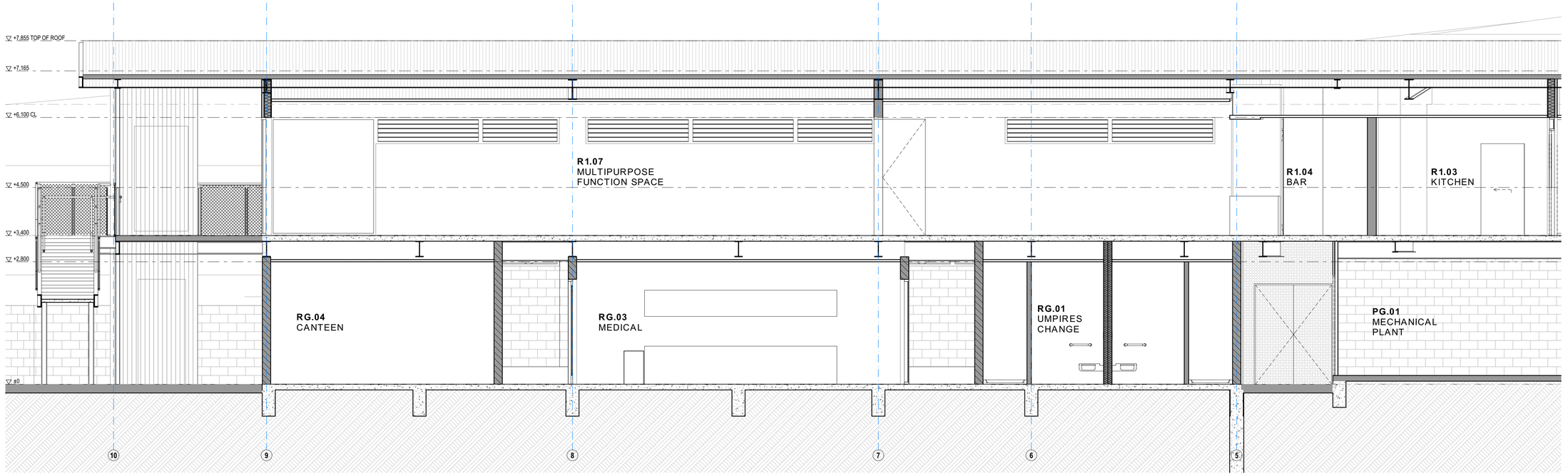
CLIENT
Houghton Memorial Oval Committee

PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

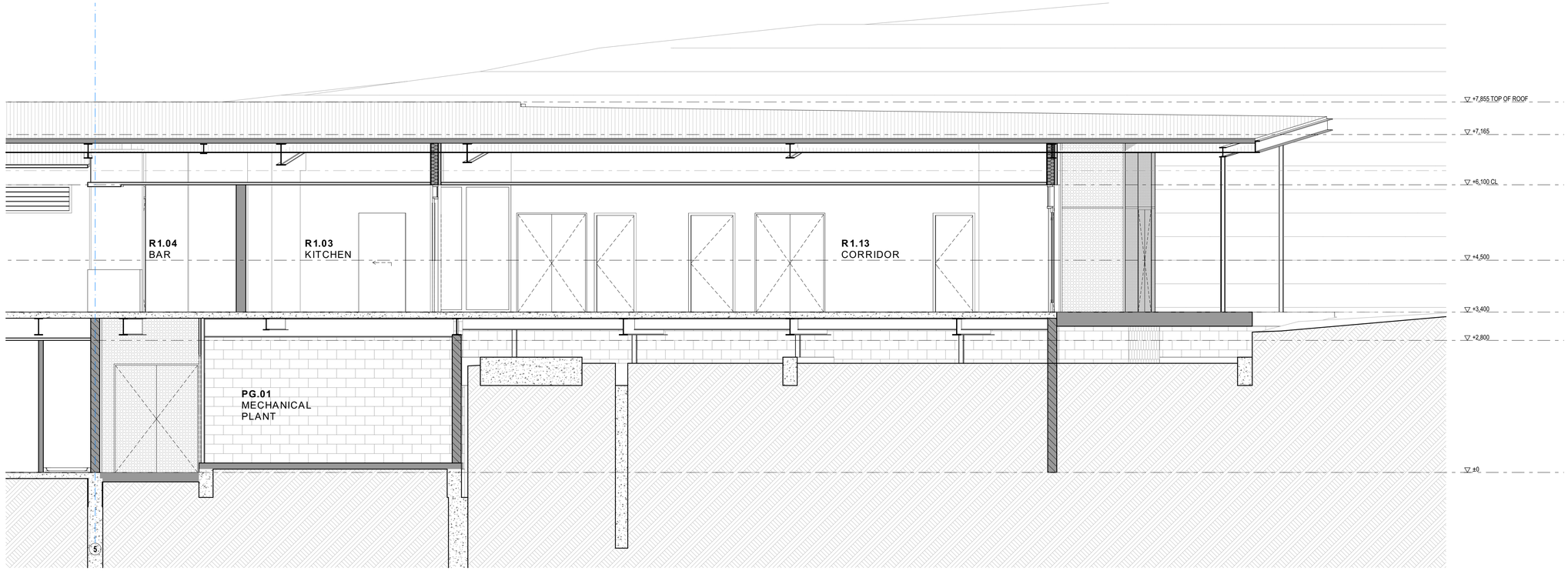
DRAWING TITLE:
ELEVATIONS

SCALE:	**1:100**	SHEET SIZE	**A1**
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	5/5/21	DATE:	5/5/21

PROJECT NO / DRAWING NO: **20602 - DA06**
REVISION: **P1**



S-03 / - SECTION 03 - PART 01
1:50



S-03 / - SECTION 03 - PART 02
1:50

10 20 Scale Bar Units in Millimetres 50 100 200 300 400 500 600 700

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BIMcloud: admins-iMac.local - BIMcloud Basic for ARCHICAD 23/20602 Houghton Oval Community Hub - 2021-03-17

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P1	Issued for Planning Consent	5/5/21

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CIVIL / STRUCTURAL: CPR ENGINEERS PH: 8332 1344

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Houghton Memorial Oval Committee

PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

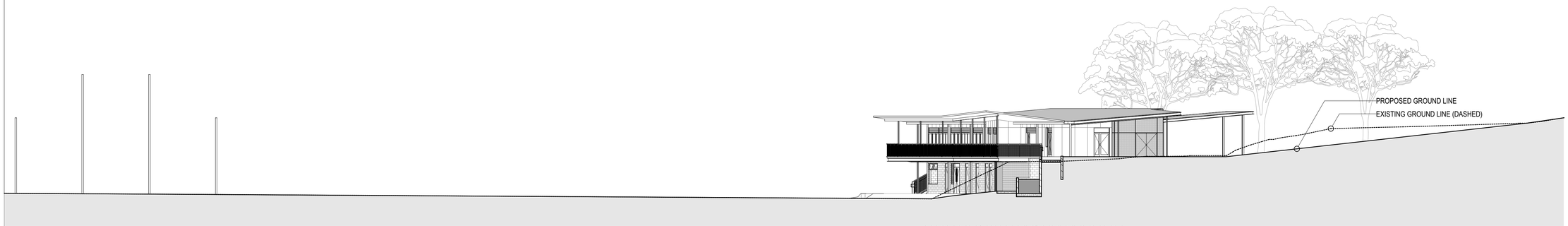
DRAWING TITLE:
BUILDING SECTIONS 02

SCALE:	**1:50**	SHEET SIZE	**A1**
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	5/5/21	DATE:	5/5/21

PROJECT NO / DRAWING NO: **20602 - DA09**
REVISION: **P1**



01
-
SITE SECTION
1:100



02
-
SITE SECTION
1:200

10 20 Scale Bar Units in Millimetres 50 100 200 300 400 500 600 700

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SERVICES ENGINEER: BESTEC PH: 8232 4442
CIVIL / STRUCTURAL: CPR ENGINEERS PH: 8332 1344

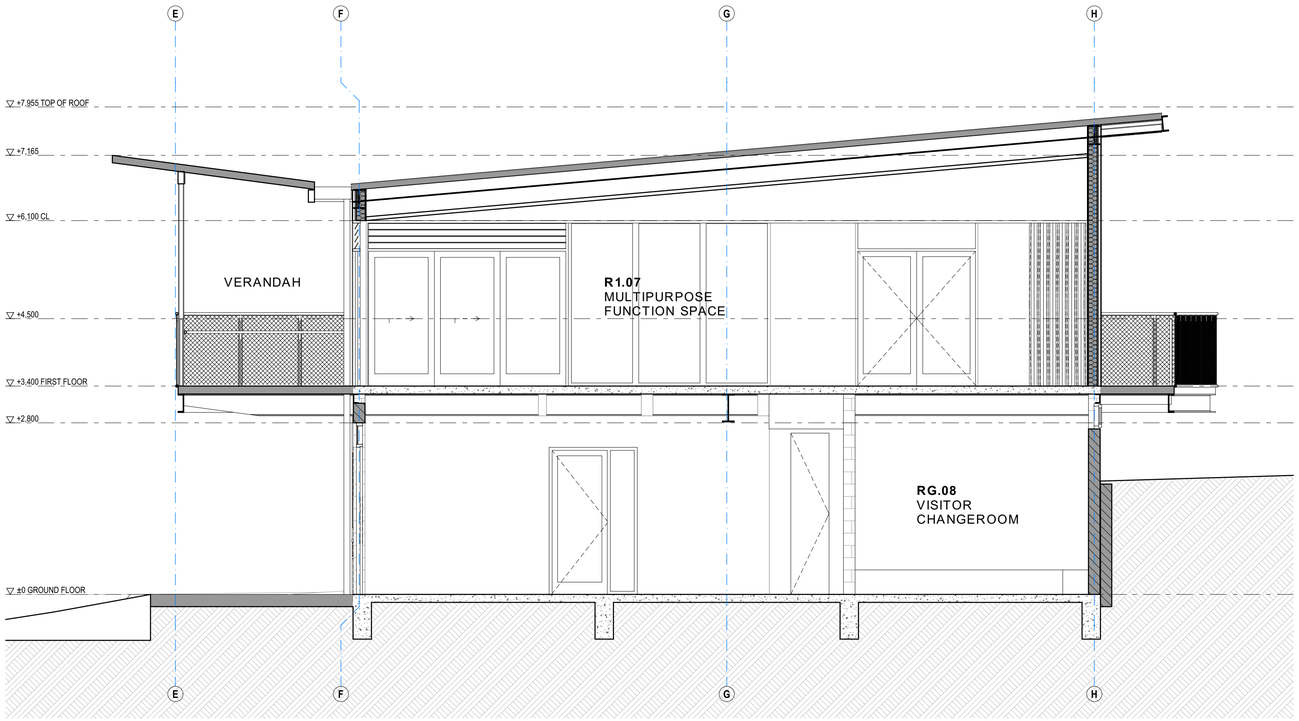
CLIENT
Houghton Memorial Oval Committee

PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

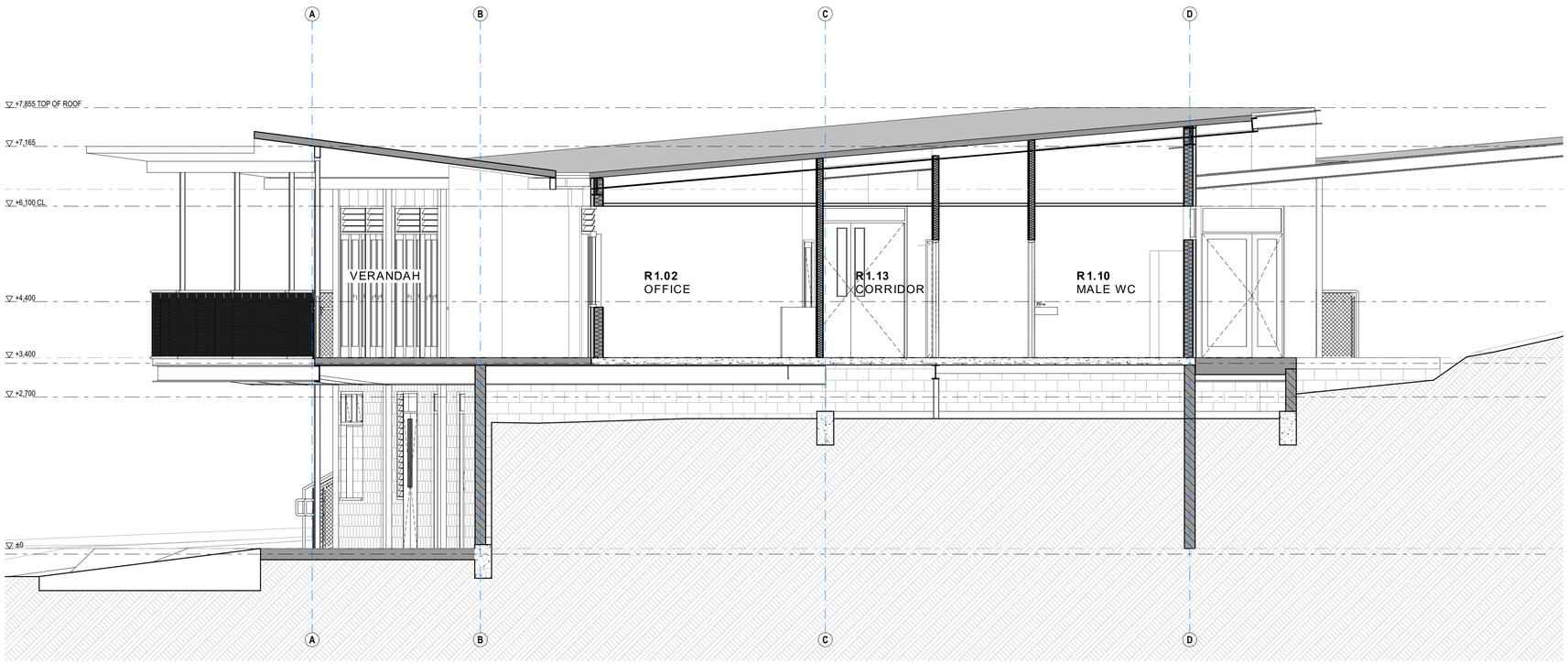
DRAWING TITLE:
SITE SECTION

SCALE:	**1:100, 1:200**	SHEET SIZE	**A1**
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	5/5/21	DATE:	5/5/21

PROJECT NO / DRAWING NO:	REVISION:
20602 - DA07	**P1**



S-01 - SECTION 01 1:50



S-02 - SECTION 02 1:50

10 20 Scale Bar Units in Millimetres 50 100 200 300 400 500 600 700

NOT FOR CONSTRUCTION

BIMcloud: admins-iMac.local - BIMcloud Basic for ARCHICAD 23/20602 Houghton Oval Community Hub - 2021-03-17

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P1	Issued for Planning Consent	5/5/21

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CLIENT
Houghton Memorial Oval Committee

PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

DRAWING TITLE:
BUILDING SECTIONS 01

SCALE:	**1:50**	SHEET SIZE	**A1**
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	5/5/21	DATE:	5/5/21

PROJECT NO / DRAWING NO: **20602 - DA08**

REVISION: **P1**

LEGEND

- Existing tree to be retained
- Proposed trees
- Irrigated garden bed
- Feature planting
- Artificial turf
- Landscape boulders
- Driveway
- Concrete ramp and steps
- Footpath
- Plaza paving
- Furniture
- Timber seating
- Disable parking



OUTER SPACE®

Project:	HOUGHTON MEMORIAL COMMUNITY & SPORTS CENTRE
Client:	HOUGHTON MEMORIAL OVAL COMMITTEE
Council:	ADELAIDE HILLS COUNCIL
Drawings:	LANDSCAPE CONCEPT PLAN

PRELIMINARY
NOT FOR CONSTRUCTION

0 2 4 6 8 10 20m
SCALE 1:200 @ A1

Date: 29/04/2021	Drawn By: BS
Dwg No.: OS2032_ CP01	Checked By: AL
Revision: A	Approved By: PG

LEGEND

- Proposed trees
- Irrigated garden bed
- Feature planting
- Driveway
- Concrete ramp and steps
- Footpath
- Plaza paving
- Furniture
- Timber seating



OUTER SPACE®

Project:	HOUGHTON MEMORIAL COMMUNITY & SPORTS CENTRE
Client:	HOUGHTON MEMORIAL OVAL COMMITTEE
Council:	ADELAIDE HILLS COUNCIL
Drawings:	LANDSCAPE BLOW UP PLAN

PRELIMINARY
NOT FOR CONSTRUCTION

0 1 2 3 4 5 10m
SCALE 1:100 @ A1

Date: 29/04/2021	Drawn By: BS
Dwg No.: OS2032_CP02	Checked By: AL
Revision: A	Approved By: PG

PLANT PALETTE

TREES



Eucalyptus leucoxylon ssp leucoxylon
Yellow Gum
H: 20m W: 20m



Corymbia maculata
Spotted Gum
H: 25m W: 10m



Pistacia chinensis
Chinese Pistachio
H: 10m W: 6m



Fraxinus griffithii
Evergreen Ash
H: 8m W: 4m



Cupaniopsis anacardioides
Tuckeroo
H: 10m W: 8m

TUSSOCKS & GROUNDCOVER



Hardenbergia violacea 'Meema'
Native Lilac
H: 0.50m W: 1.2m



Callistemon 'Little John'
Bottlebrush
H: 1m W: 1m



Westringia fruticosa
Grey Box
H: 0.45m W: 0.45m



Chrysocephalum apiculatum
Yellow Buttons
H: 0.3m W: 0.5m



Grevillea rosmarinifolia
Crimson Villea
H: 0.8m W: 0.8m



Correa 'Dusky Bells'
Dusky Bells
H: 0.6m W: 3m



Dietes grandiflora 'Wild Iris'
Wild Iris
H: 0.8m W: 1.0m



Dianella tasmanica 'Tas Red'
Tas Red Dianella
H: 0.6m W: 0.6m



Lomandra longifolia 'Lime Tuff'
Mat rush 'Lime Tuff'
H: 0.4m W: 0.4m



Carpobrotus glaucescens
Pigface
H: 0.3m W: 2m



Myoporum parvifolium
Creeping boobialla
H: 0.20m W: 2.0m



Murraya paniculata
Chinese box
H: 4m W: 3.5m

PRECEDENT IMAGES



Rock garden





Entry walling



Outdoor gathering space





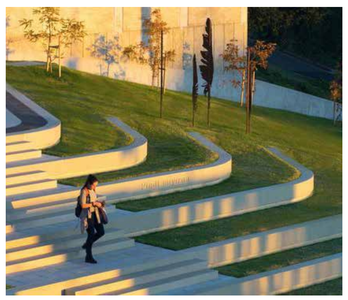


Porte cochere





Terrace seating



OUTER SPACE®

Project:	HOUGHTON MEMORIAL COMMUNITY & SPORTS CENTRE
Client:	HOUGHTON MEMORIAL OVAL COMMITTEE
Council:	ADELAIDE HILLS COUNCIL
Drawings:	PLANT PALETTE + PRECEDENT IMAGES

PRELIMINARY
NOT FOR CONSTRUCTION

Date: 29/04/2021 Drawn By: BS
Dwg No.: OS2032_CP03 Checked By: AL
Revision: A Approved By: PG

SCALE BAR UNITS IN MILLIMETRES
10 20 50

LEGEND

- NEW STORMWATER PIPE (UNSEALED SYSTEM).
- STORMWATER PIPE EXISTING.
- DP — DOWN PIPES. ALL DOWN PIPES TO HAVE A 100Ø uPVC TAIL CONNECTING TO MAIN STORM WATER RUN U.N.O.
- RW* — RETAINING WALL. REFER TO S200 AND S201 FOR DETAIL.
- P ** ** — DESIGN LEVEL: P-PAVEMENT LEVEL, TP-TOP OF PIT, IL-INVERT LEVEL, EX-EXISTING LEVEL
- + 99.35 — EXISTING SPOT LEVELS FROM SURVEY.
- NEW MASONRY PAVEMENT - LIGHT DUTY. REFER TO DETAIL.

SW

GRATED DRAIN.

FFL 103.4

PROPOSED COMMUNITY HUB

DROP OFF ONE WAY

Issue	Date	Details	Eng\Dft
B	03-05-21	ISSUED FOR COORDINATION	TK \ MNS
A	09-04-21	ISSUED FOR 60% COORDINATION	TK \ MNS

PRELIMINARY
03/05/2021

0 1000 2000 4000 6000
SCALE (mm) 1:100

COMBE PEARSON REYNOLDS CONSULTING ENGINEERS
174 Fullarton Road Dulwich SA 5065 PO Box 2832 Kent Town SA 5071
Phone: 08 8332 1344 e-mail: plans@cprengineers.com.au
Combe Pearson Reynolds Pty. Ltd. as Trustee for the CPR Trust
ACN 112 731 558 ABN 12 112 731 558

HOUGHTON MEMORIAL OVAL COMMUNITY HUB

1377 LOWER NORTH EAST ROAD
HOUGHTON SA 5131

HOUGHTON MEMORIAL

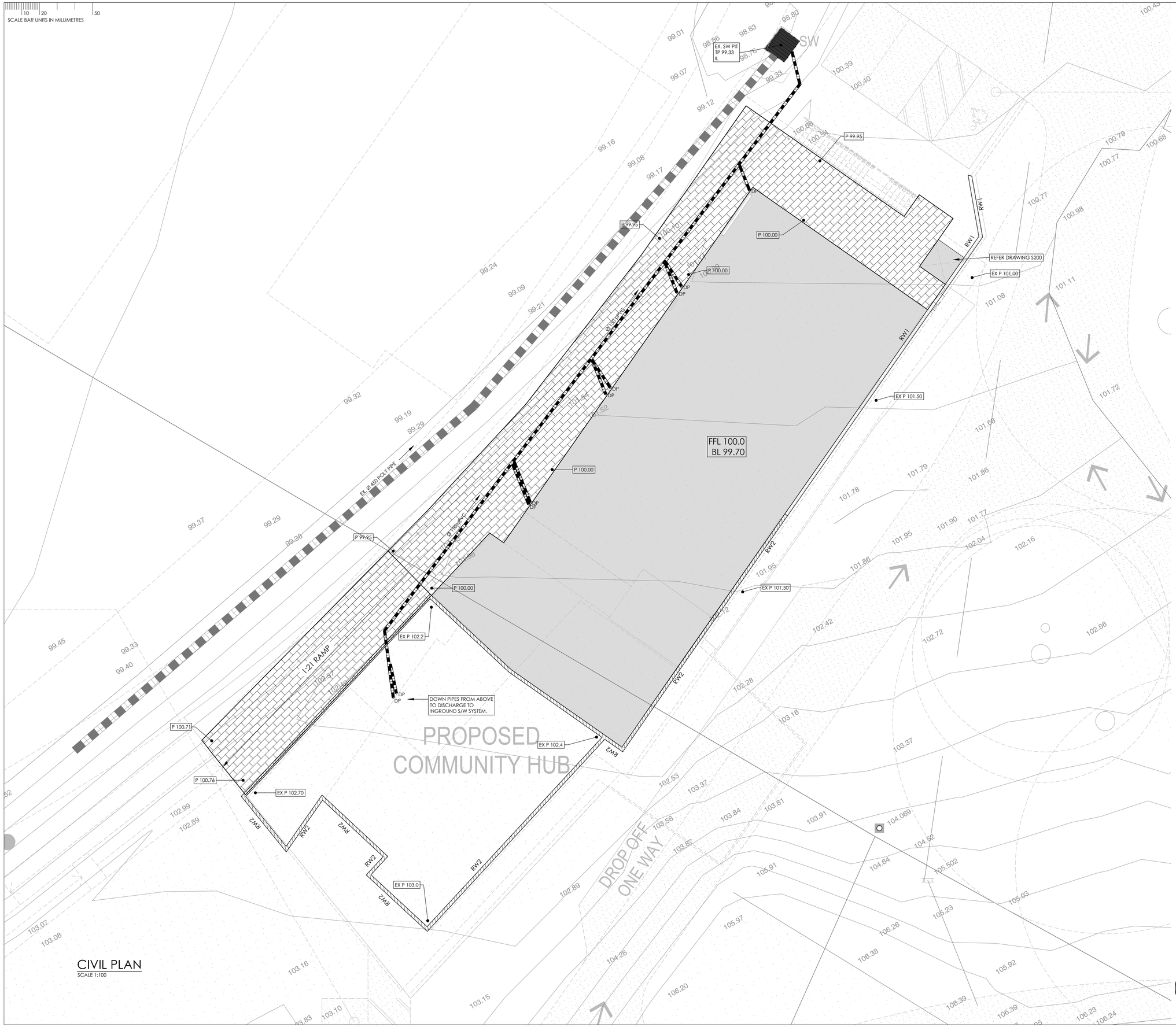
PHILLIPS PILKINGTON ARCHITECTS
165 MACKINNON PARADE, SA 5006.
Phone 8239 9000

SITEWORKS AND DRAINAGE PLAN - FIRST FLOOR LEVEL

Designed	Drawn	Checked	Scale	Date
T.K.	M.N.S.	-	1:100	May-21

Drawing No. 200325-C101 Rev. B

Last Saved by: MaheshV PRINTED ON : 3/05/2021 4:22:43 PM ORIGINAL SHEET SIZE A1



CIVIL PLAN
SCALE 1:100

LEGEND

	NEW STORMWATER PIPE (UNSEALED SYSTEM).
	STORMWATER PIPE EXISTING.
DP	DOWN PIPES. ALL DOWN PIPES TO HAVE A 100Ø uPVC TAIL CONNECTING TO MAIN STORM WATER RUN U.N.O.
RW*	RETAINING WALL. REFER TO S200 AND S201 FOR DETAIL.
P **.**	DESIGN LEVEL — P-PAVEMENT LEVEL, TP-TOP OF PIT, IL- INVERT LEVEL, EX-EXISTING LEVEL
+99.35	EXISTING SPOT LEVELS FROM SURVEY.
	NEW MASONRY PAVEMENT - LIGHT DUTY. REFER TO DETAIL.

REFER TO 200325-C200 FOR CIVIL NOTES.

Issue	Date	Details	Eng\Dft
B	03-05-21	ISSUED FOR COORDINATION	TK \ MNS
A	09-04-21	ISSUED FOR 60% COORDINATION	TK \ MNS

PRELIMINARY
03/05/2021

0 1000 2000 4000 6000
SCALE (mm) 1:100

COMBE PEARSON REYNOLDS
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Combe Pearson Reynolds Pty. Ltd. as Trustee for the CPR Trust
ACN 112 731 558 ABN 12 112 731 558

HOUGHTON MEMORIAL OVAL COMMUNITY HUB

1377 LOWER NORTH EAST ROAD
HOUGHTON SA 5131

HOUGHTON MEMORIAL

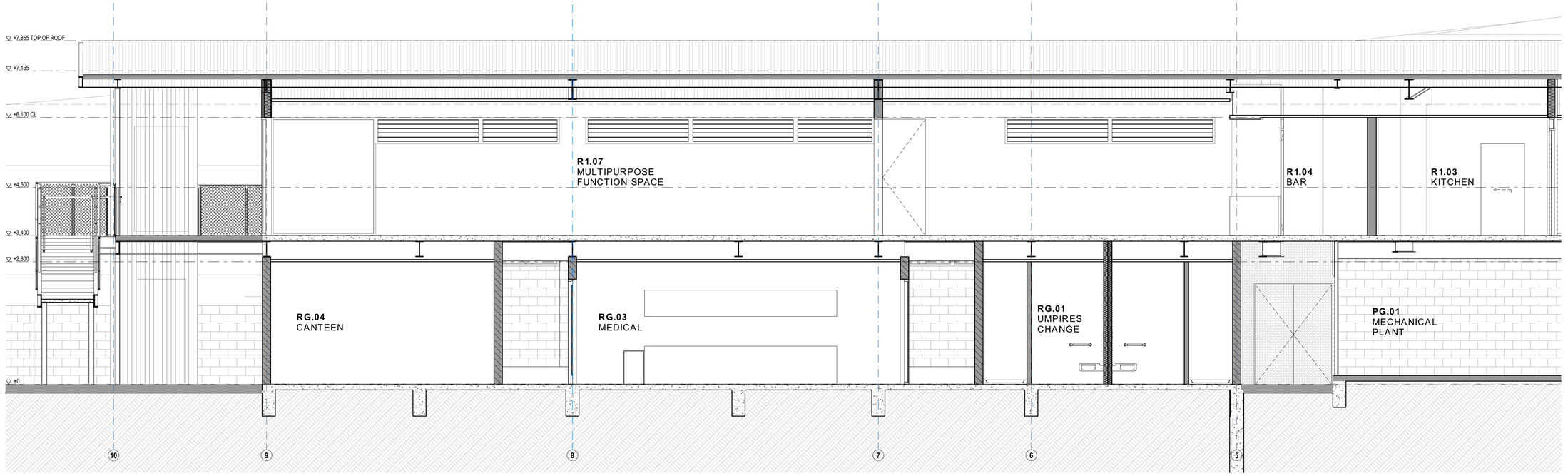
PHILLIPS PILKINGTON ARCHITECTS
165 MACKINNON PARADE, SA 5006.
Phone 8239 9000

SITEWORKS AND DRAINAGE PLAN - GROUND FLOOR LEVEL

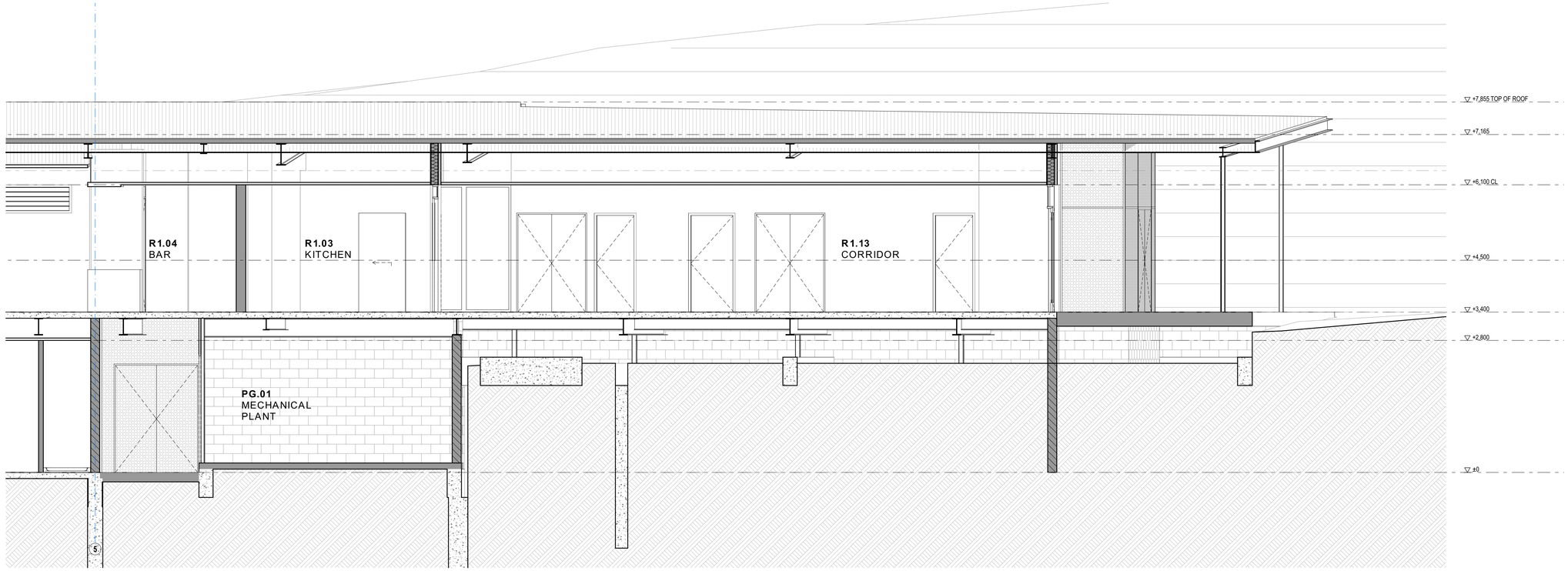
Designed	Drawn	Checked	Scale	Date
T.K.	M.N.S.	-	1:100	May-21

Drawing No. 200325-C100 Rev. B

Last Saved by: Mahesh PRINTED ON : 3/05/2021 4:23:12 PM ORIGINAL SHEET SIZE A1



S-03 / - SECTION 03 - PART 01
1:50



S-03 / - SECTION 03 - PART 02
1:50

10 20 Scale Bar Units in Millimetres 50 100 200 300 400 500 600 700

NOT FOR CONSTRUCTION

BIMcloud: admins-iMac.local - BIMcloud Basic for ARCHICAD 23/20602 Houghton Oval Community Hub - 2021-03-17

NOTES

BUILDER MUST VERIFY ALL DIMENSIONS AT JOB BEFORE COMMENCING ANY WORK OR SHOP DRAWINGS. ANY DISCREPANCIES TO BE REPORTED TO ARCHITECT IMMEDIATELY.

BUILDER TO ALLOW FOR ALL DEMOLITION NECESSARY TO COMPLETE NEW WORK. ITEMS REQUIRED TO BE DEMOLISHED OR REMOVED IN ORDER TO COMPLETE NEW WORK, BUT NOT NOTED, CANNOT BE CLAIMED AS A VARIATION.

Rev	Issue	Date
P1	Issued for Planning Consent	5/5/21

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PHILLIPS/PILKINGTON ARCHITECTS PTY LTD

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SERVICES ENGINEER: BESTEC PH: 8232 4442
CIVIL / STRUCTURAL: CPR ENGINEERS PH: 8332 1344

CLIENT
Houghton Memorial Oval Committee

PROJECT
HOUGHTON MEMORIAL OVAL COMMUNITY HUB
1377 Lower North East Rd
Houghton SA 5131

DRAWING TITLE:
BUILDING SECTIONS 02

SCALE:	**1:50**	SHEET SIZE	**A1**
DRAWING BY:	APR	CHECKED BY:	MP
DATE:	5/5/21	DATE:	5/5/21

PROJECT NO / DRAWING NO: **20602 - DA09**
REVISION: **P1**

20155781L004A_Houghton Memorial Oval Stormwater Management Plan

17 April 2018

PO Box 1
INGLEWOOD
SA 5133

Attention: Matt Thomas

Dear Matt

HOUGHTON MEMORIAL OVAL STORMWATER MANAGEMENT PLAN

Introduction

Construction of a new function centre and club rooms at the Houghton Memorial Community Oval is currently being planned by the committee. The proposed development will include a new building and carparks to the north and east of the proposed building.

A stormwater management plan is required to show drainage and water quality improvement measures for the proposed development. A schematic plan showing the recommended stormwater measures is enclosed.

Drainage

It is recommended that the building and carpark are drained via a combination of kerb and gutter or spoon drains and an underground drainage network towards the natural water course located at the north eastern side of the site, adjacent to Elizabeth Street. Prior to discharge to the creek the stormwater should be treated to improve the water quality, thereby protecting downstream ecosystems from pollutants generated within the carpark catchment.

Water Quality Targets

South Australia's state wide performance targets for stormwater runoff quality are as follows:

- 90% reduction in litter/gross pollutants
- 45% reduction in average annual total nitrogen
- 60% reduction in average annual total phosphorous, and
- 80% reduction in average annual total suspended solids.

(Department of Environment, Water and Natural Resources, 2013)

Modelling is required to show that these targets can be achieved through the implementation of the recommended stormwater treatment devices.

Treatment Train Selection

The primary pollutants of concern from the developed catchment are likely to be gross pollutants and sediments, along with small concentrations of hydrocarbons and nutrients.

A gross pollutant trap (GPT) is recommended as the upstream element in the treatment train. GPTs target the removal of gross pollutants and are recommended instead of trash racks due to ease of maintenance and the fact that they contain rubbish underground where it isn't visible to the public. GPTs can also contain hydrocarbons during an emergency spill event. A pond downstream of the GPT will assist with the removal of sediments and nutrients.

There are a number of proprietary products on the market that would be suitable for removing gross pollutants and sediments from the modelled catchment. The selected GPT will need to be sized to suit the inflow pipe size which is likely to be have a diameter of 375 mm.

Hydraulic Modelling

DRAINS, a hydraulic and hydrologic software program, was used to model the carpark and building catchments for the purpose of estimating peak design flow rates for the purpose of identifying an appropriate GPT. The following parameters were used:

- Catchment area 0.6 ha including carpark and roof areas
- Paved percentage 100%
- Time of concentration 8 minutes
- Initial loss 1 mm for paved areas
- Storm event 3 exceedances per year (EY) for 1 temporal pattern

The modelling estimates the peak 3EY flow rate to be 43 L/s.

MUSIC Modelling

MUSIC (Model for Urban Stormwater Improvement Conceptualisation) was used to model the stormwater runoff quality from the proposed development and to compare the modelled water quality improvement achieved by the recommended treatment train with the stated stormwater quality targets. The model adopted the following parameters:

- Daily rainfall data from the gauge station at Upper Hermitage
- Pan Evaporation for Adelaide
- Catchment area of 0.6 ha
- 100% impervious surface (sealed road)
- exfiltration rate of 0.4 mm/hr (which is typical of a clay material)

The following treatment nodes were included in the model:

- A Humes HumeGard GPT using the pollutant removal efficiencies provided by the manufacturer (accessed from www.holcim.com.au, 2018) and as summarised below:
  - Gross pollutants 90% removal annually
  - Total suspended solids (TSS) 49% removal annually
  - Hydrocarbons 90% in an emergency spill event
  - Total phosphorus (TP) 40% (particulate bound)
  - Total nitrogen (TN) 26% (particulate bound).

- A pond, to assist with settlement of suspended solids and nutrient uptake, with the following properties:
  - Surface Area 100 m^2
  - Extended detention depth 250 mm
  - Permanent pool volume 40 m^3
  - Outlet pipe diameter 50 mm

Modelling of the proposed treatment train indicates that the following percentage reductions in stormwater pollutants may be achieved:

- 100% reduction in litter/gross pollutants
- 46% reduction in average annual total nitrogen
- 80% reduction in average annual total phosphorous, and
- 92% reduction in average annual total suspended solids.

Based on these results, the proposed stormwater quality improvement measures for the development achieve the water quality targets.

The treatment train measures recommended in this report is the minimum requirement. Additional opportunities for small scale WSUD within the car park should be explored during design development.

A schematic stormwater management plan showing the proposed treatment measures is attached.

Water Affecting Activities

Some activities in a watercourse can have adverse impacts on the health and condition of water resources and ecosystems that depend on them. These are called water affecting activities and includes the discharge of stormwater into a watercourse.

It is likely that the works undertaken at this site will be considered a water effecting activity and therefore a water effecting activities permit may be required. An application will need to be submitted and approved prior to works commencing and will need to address:

- Erosion and sediment control measures during construction
- Treatment methods
- Vegetation removal
- Environmental risks

Yours faithfully
TONKIN CONSULTING



B. STANIFORD
Chartered Professional Engineer

Enc Stormwater Management Plan

From: Ben Staniford <Ben.Staniford@tonkin.com.au>
Sent: Wednesday, 14 July 2021 11:15 AM
To: Matt Thomas <Matt.Thomas@tafesa.edu.au>
Cc: warkyscorner@gmail.com; Barry <salembri@adam.com.au>; Helen K <kroepsch@bigpond.com>
Subject: RE: Houghton Memorial Oval - Stormwater Management Plan

Hi Matt,

Based on a 50mm orifice and extended detention depth of 250mm, the maximum discharge flow rate would be 2.5L/s (using the circular orifice equation - $Q = 0.61A\sqrt{2g(h-a)}$).

Where h is the headwater depth (225mm) and a is the area of the orifice.

Let me know if you need anything else.

Thanks.

Ben Staniford
Senior Engineer

Building exceptional outcomes together

Tonkin

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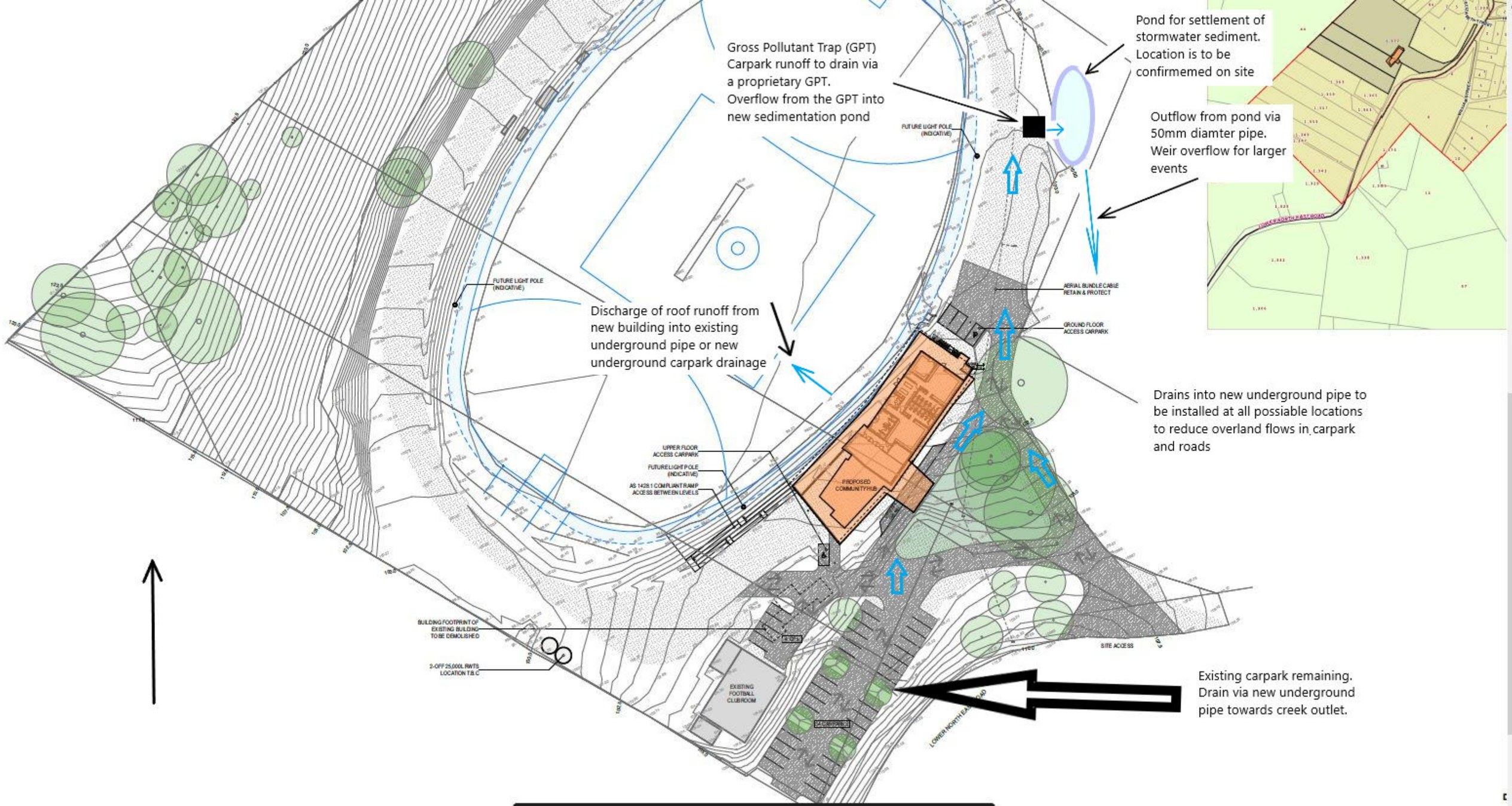
Gross Pollutant Trap (GPT)
Carpark runoff to drain via a proprietary GPT.
Overflow from the GPT into new sedimentation pond
Pond for settlement of stormwater sediment. Location is to be confirmemed on site
Outflow from pond via 50mm diamter pipe. Weir overflow for larger events
Discharge of roof runoff from new building into existing underground pipe or new underground carpark drainage
Drains into new underground pipe to be installed at all possiable locations to reduce overland flows in carpark and roads
Existing carpark remaining. Drain via new underground pipe towards creek outlet.
FUTURE LIGHT POLE (INDICATIVE)
AERIAL BUNDLE CABLE RETAIN & PROTECT
GROUND FLOOR ACCESS CARPARK
UPPER FLOOR ACCESS CARPARK
AS 1428.1 COMPLIANT RAMP ACCESS BETWEEN LEVELS
PROPOSED COMMUNITY HUB
BUILDING FOOTPRINT OF EXISTING BUILDING TO BE DEMOLISHED
2-OFF 25,000L RWTS LOCATION T.B.C
EXISTING FOOTBALL CLUBROOM
SITE ACCESS
LOWER NORTH EAST ROAD

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Phillips/Pilkington Architects

mp.apr

17th June 2021

Adelaide Hills Council
PO Box 44
WOODSIDE SA 5244

Attention: Doug Samardzija, Statutory Planner

Dear Doug,

Development ID	21008654
Subject Land	1377 Lower North East Road, Houghton SA 5131
Proposal	Two storey community centre, including hall (200 person capacity), verandahs, lift, associated car park, landscaping & earthworks

We acknowledge receipt of your request for further information regarding this proposal and we confirm the additional information that you have requested as follows:

1. Refer attached updated full site plan:
   i) Site boundary dimensions added to full site plan (location plan) and dimensions from proposed building to relevant boundaries, as requested.
   ii) All existing and new structures are located on full site plan noting that existing buildings/sheds are all single storey. Extent of new retaining walls relating to building and access ramp shown on elevations previously submitted. Existing perimeter fences vary in type and height but are predominantly post & wire - site survey attached for further information. Nominal dimensions of proposed 2-off rainwater tanks annotated on attached site plan.

2. A Traffic Engineer was engaged to assess and advise on the required vehicular access and turnarounds required by CFS - refer attached *Figure 3 - MRV's* and *Figure 5 - 2741*. This has been incorporated into the proposed siteworks accordingly to ensure that the fire hydrant located at each end of proposed community hub building can be accessed by the CFS.

3. The site currently utilises a domestic waste collection service with domestic bins located around site. For waste collection the bins are assembled adjacent existing clubrooms for pick up. The proposed community building will utilise the same waste collection service with bins stored in the screened store on the southern corner of building. Refer attached updated full site plan for the nominated waste collection point.

4. The Steering Committee has confirmed that there is no outdoor dining / beer garden forming part of this application. The licence will extend around the perimeter of the proposed building and on the S.E. walkway to enable circulation between levels.

5. Trees are to be retained and protected throughout works with particular care taken when undertaking earthworks in proximity of trees. If tree roots are exposed at any time, earthworks will be suspended until a qualified arborist can inspect and advise on how to proceed. There is no vegetation identified in the areas that will be affected by the proposed works.

Please don't hesitate to call if you have any further queries.

Regards,

Phillips/Pilkington Architects Pty Ltd



Michael Pilkington
Director



FIGURE 3 (11/03/21) MRV MOVEMENTS (CFS EQUIVALENT)


OVAL
RUN-OFF 3M FENCE
OVAL PARKING & CAR PARK OVERFLOW
DELIVERY
FUTURE LIFT
ALTERNATIVE ROADWAY ON EAST SIDE OF TREE 'A' -PURPLE'
STAIR
LIFT
3M WIDE VERANDAH OVER
TREE 'A' - IMPACT OF EITHER LOCATION SIMILAR?
BLUE ROADWAY PREFERRED AS MORE EFFICIENT
BUILDING
RIGHT TURN ENTRY ONLY FOR VEHICLES NO LARGER THAN SRV
30M OF KERB DROP-OFF (2M WIDE) 3.5M ONE-WAY ROAD
SQUARE UP PARKING SPACE 90-DEGREES TO AISLE
MAIN ENTRY PORCH
MAKE 3.6m WIDE ONE-WAY WITH 2.1m DROP-OFF
RAMP + LANDSCAPE
ACCESS TO SOUTHERN END OF OVAL
SITE ENTRY
WIDEN ENTRY
LOWER NORTH EAST ROAD
FOOTY CLUBHOUSE
20602·SK·100'B'
HOUGHTON SPORT/COMMUNITY BUILDING
DRAFT CARPARK/ROAD LAYOUT PLAN, 1:500
MP 11 MARCH 2021
REMOVE FIRST TWO SPACES
B AMENDED -42 CARS
A 9 CARS & FOOTY CLUBROOM
11/03/21
Phillips/Pilkington Architects Pty Ltd
ABN: 95 096 411 620
165 MacKinnon Parade, North Adelaide SA 5006
Telephone: (08) 8239 9000 Fax: (08) 8239 9099
Email: admin@phillipspilkington.com.au
Web: www.phillipspilkington.com.au
N
1:750 @ A4
0m
10m

project GREEN

Tree Development Report

3 August 2021 **S30519**

Prepared for:

Houghton, Inglewood & Hermitage Soldiers Memorial Park

Site Details:

Houghton Community Hub

1377 Lower North East Road
Houghton SA

Prepared by:

Project Green Pty Ltd

25-27 Ceafield Road
Para Hills West SA 5096

ABN: 78 088 402 706
ACN: 088 402 706

Tel: (08) 8283 1300
Fax: (08) 8258 1933

admin@projectgreen.net.au

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1 INTRODUCTION

Project Green was engaged by Matt Thomas to prepare a tree development report in relation to the construction of a new Community Hub building at Houghton, Inglewood & Hermitage Soldiers Memorial Park, 1377 Lower North East Road Houghton. A number of large trees are located on the site and Council requires a report on the potential impacts of the proposed development to the trees.



Photo 1: showing subject trees and current site works.

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1.1 Site Description

The site exists as a part of the grounds of the Memorial Park**.** The subject trees are shown on the attached aerial image **(refer Figure 1).** This shows the development site prior to works commencing. It was not possible to view the site prior to these works. It is understood that an unsealed access roadway to the oval was located between Trees 1 & 2. Development works are currently in progress including the recent excavation/cut to accommodate the proposed new building. Fill (of varying depths) has been installed in the area of the former driveway between Trees 1 & 2. A new access track to the oval has also been formed to the north-east of Tree 1.



Figure 1: Aerial view showing location of current/proposed works.

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Figure 2: Aerial view showing subject trees (image prior to current site works).

1.2 Background Information

1.2.1 Documents and Information Provided

The following documents and information were referred to in preparation of this report:

- *Site plan:* by Phillips Pilkington dated 13/05/21.

The site plan shows the location of Trees 1-4. Trees 5 & 6 are not shown. The approximate location of these trees was plotted on the site plan provided.

A detailed civil engineering drawing showing the extent of proposed cut and fill was not available at the time of the assessment.

It is also noted that the relocated access track to the oval is not shown on the site plan provided.

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2 METHOD

The following actions were undertaken to produce this report:

- Site inspection on 2 August 2021.
- Visual tree assessment of the subject trees.
- Identification of the status of the tree under the regulated tree provisions of the *SA Planning, Development & Infrastructure Act 2016*.
- Identification of a Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) for the tree in accordance with *AS4970-2009 Protection of trees on development sites*.
- Calculation of TPZ encroachments and potential development impacts.
- Recommendations regarding tree protection measures to be adopted to mitigate any development impacts.
- Guidance on potential strategies for site development which will minimize TPZ encroachments.
- Recommendations regarding tree retention or removal.

2.1 Limitations

- The trees were inspected visually from the ground only. No aerial, subsurface or invasive inspections were performed and no soil or plant samples were laboratory tested.
- Due to plant hybridisation some species can be difficult to accurately identify.
- Information contained in this report is based on observations taken on the day of inspection only. It is possible that changes in environmental conditions or subsequent information may affect these findings.
- This report has been prepared on behalf of and for the exclusive use of the Project Green client.

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3 RESULTS

3.1 Tree details

Six trees were assessed in proximity to the proposed works. Details of each tree are provided in **Table 1**. Species were all of the locally indigenous River Red Gum (*Eucalyptus camaldulensis).* Two trees have a trunk circumference greater than 3m measured 1m above ground level and qualify as significant trees under the *SA Planning, Development & Infrastructure Act 2016*. Four trees have a trunk circumference greater than 2m measured 1m above ground level and qualify as regulated trees under the Act.

It is noted that a number of other trees are located on the site and along the creek line which are not included in this assessment.

Table 1: Details of subject trees

Tree No.	Species	Circ. @ 1m	Status
1	*Eucalyptus camaldulensis*	4.30m	Regulated
2	*Eucalyptus camaldulensis*	3.30m	Significant
3	*Eucalyptus camaldulensis*	2.60m	Regulated
4	*Eucalyptus camaldulensis*	2.30m	Regulated
5	*Eucalyptus camaldulensis*	2.80m	Regulated
6	*Eucalyptus camaldulensis*	4.70m	Significant

The trees are a locally indigenous species growing in their preferred environment and display generally good health. While the trees are open grown, there have been some modifications to the tree surrounds such as soil compaction for unsealed access roadways. The trees display good to fair structure. Trees 1 and 6 are older trees with defects typical of more mature specimens of the species, including branch failures, stubs and hollowing.

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Photo 2: showing Tree 1



Photo 3: Tree 1 base.

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Photo 4: Trees 2, 3 & 4.

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Photo 5: Trees 5 & 6.

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Photo 6: Trees 5 & 6 base.

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3.2 Proposed Development

Based on the drawings provided, the proposed development includes the following.

- New two-level building.
- Cut for bench for lower level.
- Entry at upper level with fill.

A detailed civil engineering drawing showing the extent of proposed cut and fill was not available at the time of the assessment.

It is also noted that the relocated access track to the oval is not shown on the site plan provided.

3.3 Current site works

Current site works observed during the site visit include the following (refer to site photos below):

- Cut for excavated bench (depth varies) located approx. 10.5m from **Tree 1** and 12.5m from **Tree 2**.
- The exposed profile indicates areas of natural soil, rock substrate, buried surface of the former dolomite roadway and imported fill. Tree roots were not observed in the exposed cut face. (Note: Detailed investigations were not undertaken with relation to root distribution).
- Localized fill between **Trees 1 & 2**. Depth of fill varies from '0' to a maximum of approx. 1-1.5m at the cut face.
- Newly formed access track to the north-east of **Tree 1**.

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Photo 7: Showing oval entry prior to current siteworks (Google street view April 2019).



Photo 8: showing current site entry including fill between Trees 1 & 2 and new access track to oval north-east of Tree 1.

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Photo 9: Relocated access track adjacent to Tree 1.



Photo 10: Fill between trees 1 and 2

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Photo 9: Relocated access track adjacent to Tree 1.



Photo 10: Fill between Trees 1 & 2

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Photo 11: Recent cut and fill adjacent to Trees 1 & 2.



Photo 12: Detail of cut and fill adjacent to Tree 1.

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Photo 13: Detail of cut and fill adjacent to Tree 2.

3.4 Development Impacts

All parts of the tree, including its root system, trunk and crown, may be damaged by development and construction activities if tree protection measures are not implemented. Damage to any one part of the tree may affect its functioning and viability as a whole.

Under *AS4970-2009* the Tree Protection Zone (TPZ) is the principle means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance so that the tree remains viable. The radius of a tree's TPZ is calculated by multiplying its DBH (Diameter at Breast Height) by 12. The TPZ is to be observed in a symmetrical manner with the tree being in a central position.

The TPZ also incorporates the Structural Root Zone (SRZ) which comprises the area around the base of a tree required for the tree's stability and viability.

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Table 2 illustrates the TPZ and SRZ for the trees surveyed. This information is also presented in **the TPZ Plans** later in this document**.**

Table 2: TPZ data

Tree No.	Species	DBH (mm)	TPZ (radius m)	TPZ (area m^2)	Diam. at base (mm)	SRZ (radius m)
1	*Eucalyptus camaldulensis*	1340	15.0	707	1450	3.9
2	*Eucalyptus camaldulensis*	1020	12.24	471	1140	3.5
3	*Eucalyptus camaldulensis*	790	9.48	282	850	3.1
4	*Eucalyptus camaldulensis*	690	8.28	215	750	2.9
5	*Eucalyptus camaldulensis*	870	10.44	324	950	3.2
6	*Eucalyptus camaldulensis*	1470	15.0	707	1550	4.0

AS4970-2009 allows for a level of encroachment into the TPZ. Encroachments can be by earthworks, paving and trenching for services, as well as building works. The following assessment was made of the encroachments by the existing and proposed development on the trees **(refer to the included TPZ Plans).**

Existing TPZ occupancy

Consideration has also been given to the presence of any pre-existing structures within the TPZ. The area of the TPZs of all trees was of an open character with some compaction in relation to the former unsealed driveway between the trees.

New encroachments

Based on site observations the **existing cut** encroaches into the TPZs of the trees as follows.

- For **Tree 1** the encroachment is approx. 9% of TPZ area. This would comprise a 'minor encroachment' under *AS4970* (<10% of TPZ area and outside SRZ).
- For **Tree 2** the cut is on the edge of the TPZ with only a minor encroachment.
- There is no encroachment by the cut for the other trees.

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Fill also has the potential to impact on tree health as it can 'suffocate' tree roots by reducing soil oxygen levels. This effect is exacerbated where the fill comprises poor quality material and is compacted to levels which severely limit root growth.

Civil engineering drawings showing the extent and depth of fill were not available at the time of the assessment. Fill of a depth of 0-1.0/1.5m was observed in the TPZs of Trees 1 & 2.

Fill of varying depth is estimated to occupy approx. 15-20% of the TPZs of Trees 1 & 2. While not desirable, this may be acceptable given the following considerations.

- It is recognized by many arborists and scientists that *E. camaldulensis* is a tree species relatively tolerant of site disturbances including compaction, filling and root disturbance. This is due to the trees relatively deep root system, ability to draw on underground water sources, and natural adaptation to disturbed riverine sites.
- The trees are a locally indigenous species exhibiting good health and vigour.
- Part of the fill is located on the site of the former unsealed roadway, where soil compaction would have occurred.

Other works at the site, including formation of a new unsealed driveway, appear to being undertaken in a relatively uncontrolled manner in relation to the subject trees and other trees along the creek line. Additional tree protection measures should be implemented in relation to these trees **(refer to the included Tree Protection Plan)**.

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Figure 3: TPZ Plan - former site conditions.

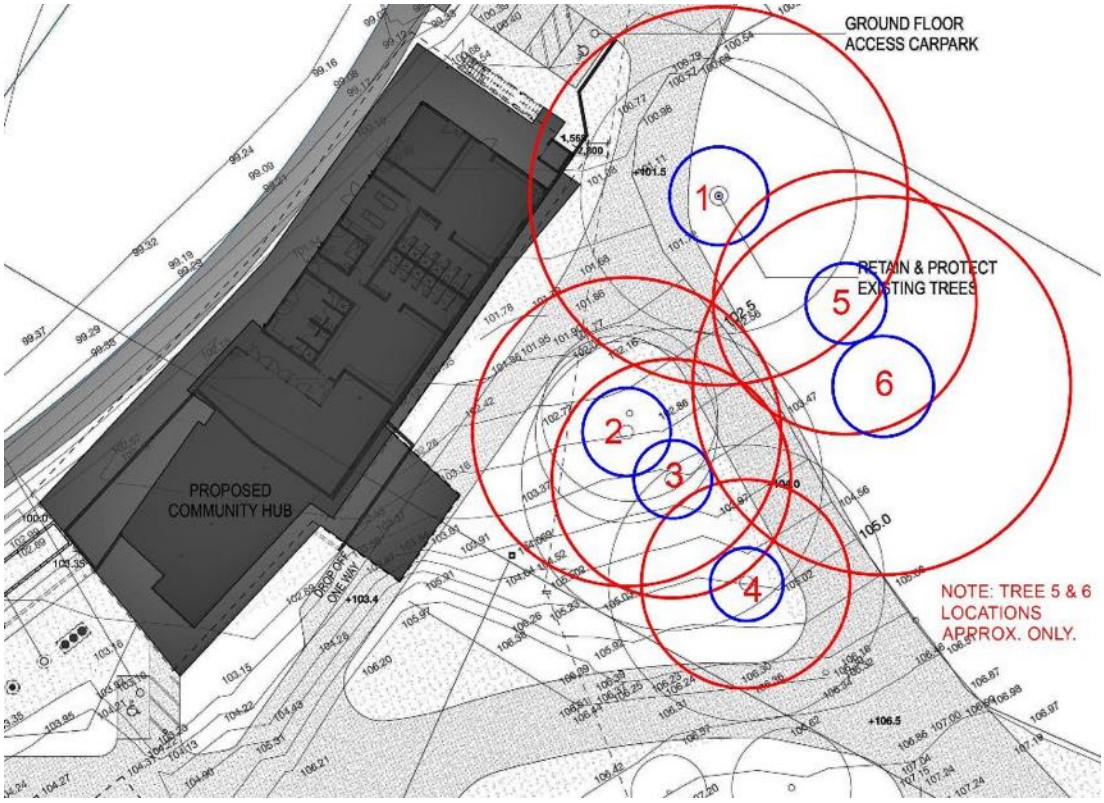

Figure 4: TPZ Plan proposed site.

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4 TREE PROTECTION PLAN

To protect the trees in relation to the proposed development protective fencing and other protective measures will be required during the entire development process. The following tree protection measures are required. Additional tree protection measures are to be adopted as outlined in **Appendix A (Tree Protection Zone).**

Protective fencing

Protective fencing is recommended around any trees in close proximity to any development activities.

Temporary protective fencing is to be installed around the trees prior to any work commencing and is to be maintained in place until all work is finalized.

Ideally the fence should be set up at the full TPZ radius. This is not practicable at this site, so the fencing should be set up to follow the drip line of the tree crown.

At this site bunting on star pickets may be an appropriate alternative.

Once erected, protective fencing must not be removed or altered without approval by the Project Arborist. The fencing should be secured to restrict access. Appropriate signage must be placed on the TPZ fence.

The fenced areas shall not be used for storage of machinery or construction materials or for parking or vehicle access.

Areas for parking, storage, waste disposal, mixing and wash out areas must be clearly defined, well away from the tree protection zone.

Apply mulch to a depth of 50-75mm within the protective fencing on the site.

Supplementary watering of the TPZ areas is to be undertaken during dry periods or as deemed necessary by the Project Arborist.

The TPZ fence may be reduced in extent in the final stages of construction to enable site works to be completed/ to facilitate final landscaping.

Site access

Site access should be directed around any tree protection zones. Vehicle access through a TPZ requires temporary ground protection.

Site preparation and excavation

Any approved earthworks within the TPZ must be carried out with caution under the supervision of the Project Arborist.

No grade changes (cut or fill) within any TPZ without approval.

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Installing fill over a trees root zone can impact on tree health and longevity. Where possible existing site levels should be retained. Fill depth should be minimized. Where possible fill should be protected from compaction and should comprise a soil with attributes of soil structure, oxygenation, water infiltration and nutrient availability favourable for root growth.

Fill is not to be placed in contact with tree trunks, which can lead to 'collar rot'.

Excavation machinery should stand in a position away from the TPZ to avoid soil compaction and conflict with the trunk and branches.

No stockpiling of soil within any TPZ.

Construction

Construction activities require a range of contractors accessing the site, storing materials and generating waste. These activities can have accumulative impact on the trees and surrounding soils.

The trees must be well protected with fencing and other suitable ground protection during all phases of the construction process.

Areas for parking, storage, waste disposal, mixing and wash out areas must be clearly defined, well

Any pruning of regulated/significant trees to be done by Level 3 qualified arborists with Council approval.

Underground services

Continuous trenching for underground services within a TPZ can sever tree roots.

No underground services to be installed within any TPZ without council approval and approval from Project Arborist.

Underground services are to be routed outside of the TPZ if possible.

If underground services cannot be routed outside of the TPZ, they must be installed in consultation with the Project Arborist. This may require installation using 'soft dig' methods such as hydro-excavation or direction boring.

Retaining walls

Excavation for footings for walls within a tree's TPZ can sever tree roots and impact on tree health and stability.

Any new retaining walls should be of 'pier and beam' construction rather than strip footings without continuous trenching.

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Paving

Installation of paving within a TPZ can impact on tree health by the installation of impervious surfaces, and by excavation works.

Paving works within any TPZ must be kept to a minimum. Preparation for paving works within the TPZ must not lower the grade.

Any paving within the TPZ to comprise open jointed pavers to maintain water infiltration into the soil.

Paving materials must use permeable base preparations and permeable paving materials.

Any paving within the TPZ should be installed without lowering of grade or with minimal excavation.

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5. GLOSSARY

Crown Density	The estimated percentage of density of foliage present in the crown compared to that idealised for the genus and species when in good condition of normal vigour and expressed as a percentage, considering vigour, predation, environmental condition, epicormic shoots and dormancy (Draper & Richards, 2009).
Crown Lifting	The removal of the lower branches (AS4373:2007).
Co-dominant Stems	Stems or trunks of about the same size originating from the same position from the main stem (AS4373:2007)
Dead wood	Dead branches within a tree's canopy can be categorised as small, medium or large in size based on diameter and length and volume within canopy
Health	Includes the tree's vigour exhibited by crown density, crown cover, leaf colour etc.
Live Crown Ratio	An estimate of the ratio of the length of live crown to the height of the tree, expressed as a percentage (Draper & Richards, 2009 p 90)
Structural Root Zone (SRZ)	Is the area required for tree stability and is incorporated in the Tree Protection Zone. (AS4970:2009).
Tree Protection Zone (TPZ)	Is the principal means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable (AS4970:2009).
Visual Tree Assessment	A visual inspection of a tree from the ground undertaken by a trained arborist competent in determining tree type, structural integrity, health, growing environment and environmental benefits or impacts the tree may present, and determining suitable methods for managing the tree and impact it may have on its immediate surrounds. The inspection is limited to those attributes observe on the day of inspection. No other investigation techniques are used unless stated otherwise.

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6. BIBLIOGRAPHY

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Matheny, N.P: & Clark, J.R (1994) Evaluation of Hazard Trees in Urban Areas. ISA Publications.

Shigo, A.L. (1999) A New Tree Biology (9th edition) Sherwin Dodge Printers, Littleton, New Hampshire.

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APPENDIX - TREE PROTECTION ZONE (TPZ)

Definition of TPZ

Tree Protection Zone (TPZ) has been identified for the subject tree. The TPZ is a restricted area usually delineated by protective fencing, which is installed prior to site establishment and retained intact until completion of the works. The intent of the TPZ is to protect the tree and to ensure that its health and stability are maintained.

Implementation

To protect trees during development *Australian Standard 4970-2009 Protection of Trees on Development Sites* (AS4970-2009) prescribes activities within the TPZ and Structural Root Zone (SRZ) as described in more detail below. Contractors and staff must be informed by the site supervisor to take precautions when working within the designated TPZs, to prevent tree damaging activity occurring. Any authorized works and activities within the TPZ must be supervised by the Project Arborist.

The project specifications must acknowledge the need to protect the subject tree and the role of the Project Arborist. Additional arboricultural assessment may be required if the design changes from that originally approved.

Activities restricted within the TPZ

Activities generally excluded from the TPZ include but are not limited to-

a) machine excavation including trenching;
b) excavation for silt fencing;
c) cultivation;
d) storage;
e) preparation of chemicals, including preparation of cement products;
f) parking of vehicles and plant;
g) refuelling;
h) dumping of waste;
i) wash down and cleaning of equipment;
j) placement of fill;
k) lighting of fires;
l) soil level changes;
m) temporary or permanent installation of utilities and signs, and
n) physical damage to the tree.

Tree protection zone fencing

Fencing should be erected before any machinery or materials are brought onto the site and before the commencement of works including demolition. Once erected, protective fencing must not be removed or altered without approval by the Project Arborist. The TPZ should be secured to restrict access.

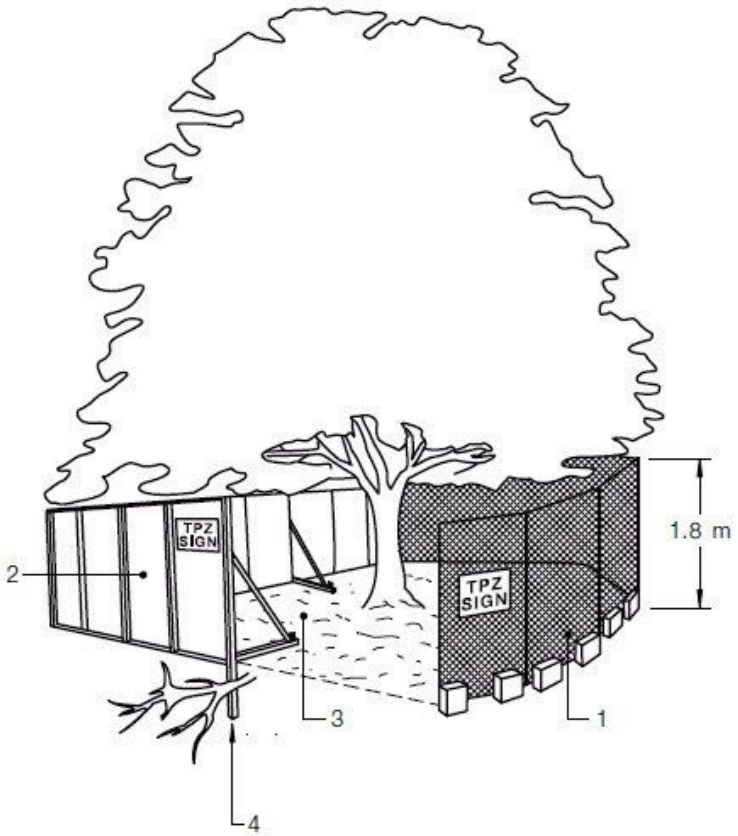
AS 4687 specifies applicable fencing requirements. Shade cloth or similar should be attached to reduce the transport of dust, other particulate matter and liquids into the protected area.

Fence posts and supports should have a diameter greater than 20 mm and be located clear of roots.

Existing perimeter fencing and other structures may be suitable as part of the protective fencing.

Signs identifying the TPZ should be placed around the edge of the TPZ and be visible from within the development site. The lettering on the sign should comply with AS 1319.

Figure 1 indicates an example of protective fencing.



LEGEND:

1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

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Figure 2: Example of protective fencing



Figure 3: Typical TPZ fencing



Figure 4: Example of TPZ signage

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Other tree protection measures

When tree protection fencing cannot be installed or requires temporary removal, other tree protection measures should be used, including those listed below.

Trunk and branch protection

Where necessary, install protection to the trunk and branches of trees as shown on Figure 4.

The materials and positioning of protection are to be specified by the Project Arborist. A minimum height of 2 m is recommended.

Do not attach temporary power lines, stays, guys and the like to the tree. Do not drive nails into the trunks or branches.

Ground protection

- If temporary access for machinery is required within the TPZ ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Measures may include a permeable membrane such as geotextile fabric beneath a layer of mulch or crushed rock below rumble boards as illustrated in Figure 4.
- These measures may be applied to root zones beyond the TPZ.

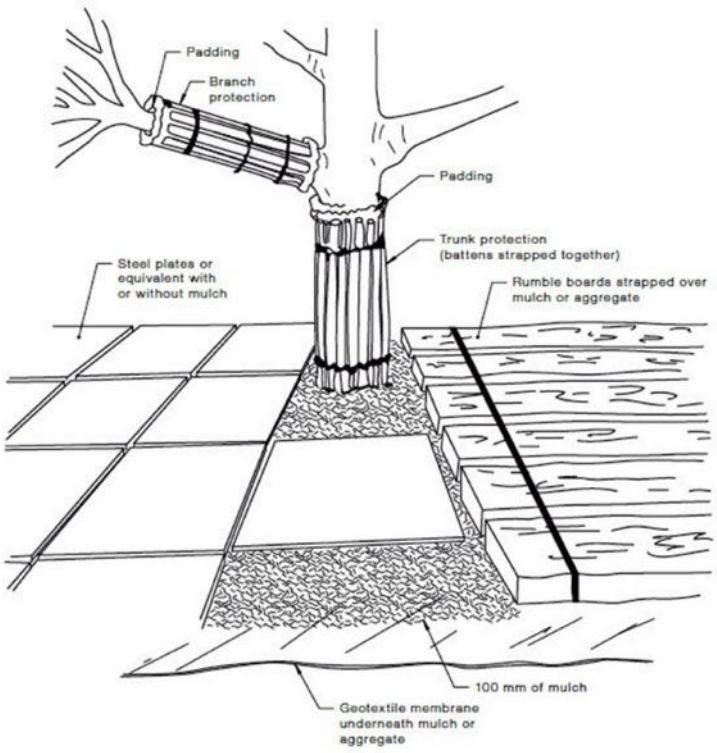

Figure 5: Examples of trunk, branch and ground protection.

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Root protection during works within the TPZ

Some approved works within the TPZ, such as regrading, installation of piers or landscaping may have the potential to damage roots.

If the grade is to be raised the material should be coarser or more porous than the underlying material. Depth and compaction should be minimized.

Manual excavation should be carried out under the supervision of the Project Arborist to identify roots critical to tree stability. Relocation or redesign of works may be required.

Where the Project Arborist identifies roots to be pruned within or at the outer edge of the TPZ, they should be pruned with a final cut to undamaged wood. Pruning cuts should be made with sharp tools such as secateurs, pruners, handsaws or chainsaws. Pruning wounds should not be treated with dressings or paints. It is not acceptable for roots within the TPZ to be 'pruned' with machinery such as backhoes or excavators.

Where roots within the TPZ are exposed by excavation, temporary root protection should be installed to prevent them drying out. This may include jute mesh or hessian sheeting as multiple layers over exposed roots and excavated soil profile, extending to the full depth of the root zone. Root protection sheeting should be pegged in place and kept moist during the period that the root zone is exposed.

Other excavation works in proximity to trees, including landscape works such as paving, irrigation and planting can adversely affect root systems. Seek advice from the Project Arborist.

Installing underground services within TPZ

All services should be routed outside the TPZ. If underground services must be routed within the TPZ, they should be installed by directional drilling or in manually excavated trenches.

The directional drilling bore should be at least 600 mm deep. The Project Arborist should assess the likely impacts of boring and bore pits on retained trees.

For manual excavation of trenches the Project Arborist should advise on roots to be retained and should monitor the works. Manual excavation may include the use of pneumatic and hydraulic tools.

Scaffolding

Where scaffolding is required it should be erected outside the TPZ. Where it is essential for scaffolding to be erected within the TPZ, branch removal should be minimized. This can be achieved by designing scaffolding to avoid branches or tying back branches. Where pruning is unavoidable it must be specified by the Project Arborist in accordance with AS 4373.

NOTE: Pruning works may require approval by determining authority.

Ground below the scaffolding should be protected by boarding (e.g. scaffold board or plywood sheeting) as shown in Figure 5. Where access is required, a board walk or other surface material should be installed to minimize soil compaction. Boarding should be placed over a layer of mulch and impervious sheeting to prevent soil contamination. The boarding should be left in place until the scaffolding is removed.

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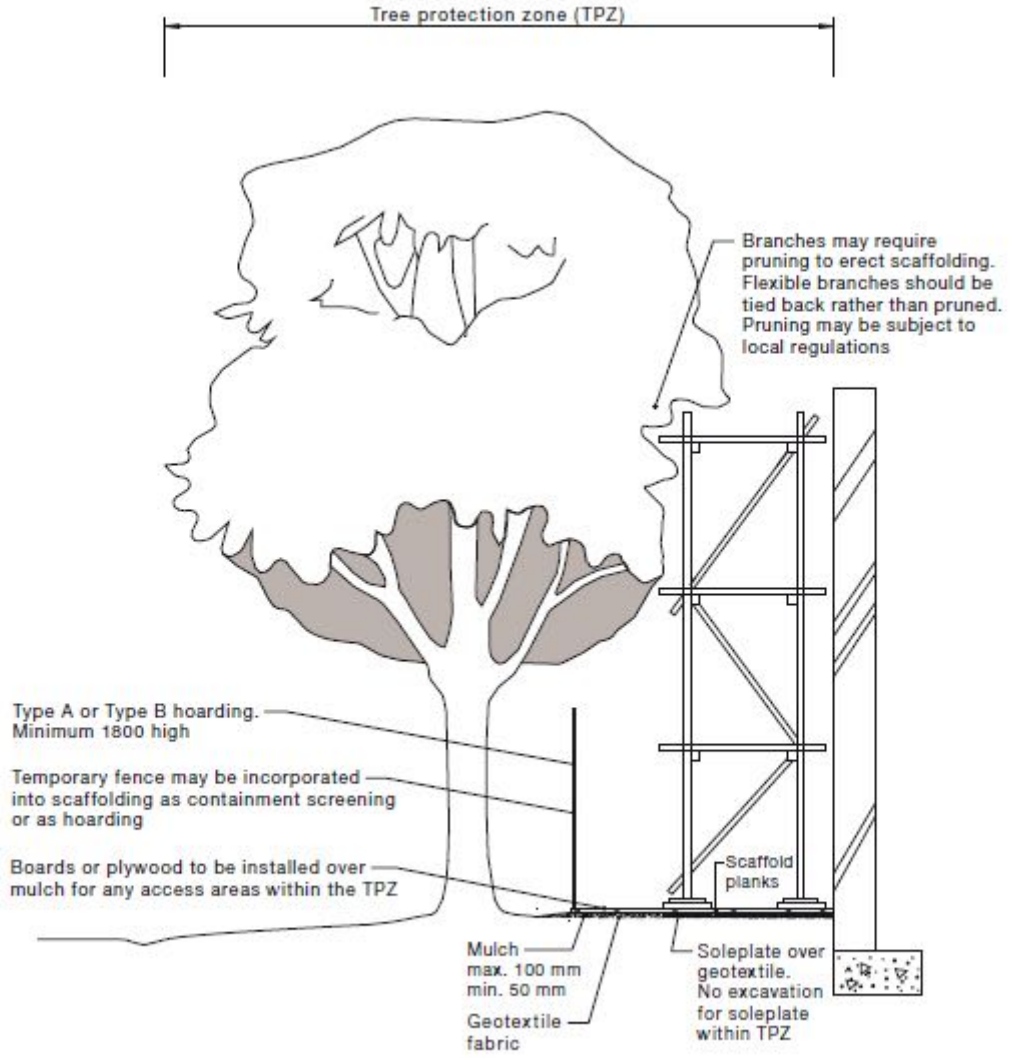

Figure 6: Indicative scaffolding within a TPZ

Maintaining the TPZ

Mulching

The area within the TPZ should be mulched. The mulch must be maintained to a depth of 50–100 mm using material that complies with AS 4454. Where the existing landscape within the TPZ is to remain unaltered (e.g. garden beds or turf) mulch may not be required.

Watering

Soil moisture levels should be regularly monitored by the Project Arborist. Temporary irrigation or watering may be required within the TPZ. An above-ground irrigation system should be installed and

Weed removal

All weeds should be removed by hand without soil disturbance or should be controlled with appropriate use of herbicide.

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Monitoring and certification

There are many stages in the development process from site acquisition to completion where the Project Arborist is required to monitor or certify tree protection. Table 1 summarizes the process and indicates the stages that normally require certification (a written statement of compliance).

Table 3: Stages In Development And The Tree Management Process

Stage in development	Tree management process	
	Matters for consideration	**Actions and certification**
Pre-construction		
Initial site preparation	State based OHS requirements for tree work	Compliance with conditions of consent
	Approved retention/removal	Tree removal/tree retention/transplanting
	Refer to AS 4373 for the requirements on the pruning of amenity trees	Tree pruning Certification of tree removal and pruning
	Specifications for tree protection measures	Establish/delineate TPZ Install protective measures Certification of tree protection measures
Construction		
Site establishment	Temporary infrastructure Demolition, bulk earthworks, hydrology	Locate temporary infrastructure to minimize impact on retained trees Maintain protective measures Certification of tree protection measures
Construction work	Liaison with site manager, compliance Deviation from approved plan	Maintain or amend protective measures Supervision and monitoring
Implement hard and soft landscape works	Installation of irrigation services Control of compaction work Installation of pavement and retaining walls	Remove selected protective measures as necessary Remedial tree works Supervision and monitoring
Practical completion	Tree vigour and structure	Remove all remaining tree protection measures Certification of tree protection
Post construction		
Defects liability/ maintenance period	Tree vigour and structure	Maintenance and monitoring Final remedial tree works Final certification of tree condition

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Tree Protection Plan

The approved tree protection plan must be available onsite prior to the commencement of and during works. The tree protection plan will identify key stages where monitoring and certification will be required.

A pre-construction meeting should be attended by the site manager, the Project Arborist and contractors to introduce the tree protection plan and its requirements.

PRE-CONSTRUCTION

Tree removal and pruning

Trees for removal or transplanting should be marked onsite as per the approved tree protection plan. Before removal, the Project Arborist should confirm that all marked trees correspond with those shown on the schedule or plan. Other tree work may be specified in the tree protection plan.

Tree removal should be carried out prior to erection of protection fencing. Contractors should be instructed to avoid damage to trees within protection areas when removing or pruning trees. This may include restrictions of vehicle movements.

Any approved pruning required to allow for works should be done at this stage. AS 4373 specifies requirements for pruning.

Stumps to be removed from within a TPZ must be removed in a manner that avoids damaging or disturbing roots of trees to be retained.

The Project Arborist should supervise tree removal, transplanting and pruning and certify the works on completion.

Installing tree protection fencing and other protection measures

Fencing and other protection measures are to be installed in compliance with Section 4 and as detailed in the tree protection plan.

Protection measures are to be certified by the Project Arborist.

CONSTRUCTION STAGE

General

In order to ensure that protection measures are being adhered to during the pre-construction and construction stages, there should be a predetermined number of site inspections carried out by the Project Arborist. Matters to be monitored and reported should include tree condition, tree protection measures and impact of site works which may arise from changes to the approved plans.

If there is non-compliance with tree protection measures or if trees have been damaged, a timeframe for compliance and remedial works should be specified by the Project Arborist.

The determining authority may need to be notified of non-compliance issues. Monitoring, reporting and certification should be carried out at the following critical stages of construction.

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Site establishment

The Project Arborist will monitor the impacts of demolition, bulk earth works, installation of temporary infrastructure including bunding, sediment control works and drainage works.

The construction management plan (site establishment plan) should be checked for compliance with the tree protection plan. The construction management plan normally includes location of site sheds, stockpile areas, temporary access roads and sediment control devices.

At completion of site establishment, the Project Arborist should certify that tree protection measures comply with the tree protection plan.

Construction work

The Project Arborist will monitor the impacts of general construction works on retained trees. Monitoring should be done at regular intervals or in consultation with the site manager. Monitoring is to be recorded for inclusion in certification at practical completion.

Critical stages typically include installation of services, footings and slabs, scaffolding, works within the TPZ and at completion of building works.

Landscape works

The landscape plan should be checked for compliance with the tree protection plan. The Project Arborist may need to approve the staged removal of protection measures required to allow for landscape works.

The Project Arborist should supervise any works within TPZs, including retaining walls, irrigation and lighting installation, topdressing, planting and paving.

The Project Arborist should specify any remedial works above and below ground.

Monitoring is to be recorded for inclusion in certification at practical completion.

Practical completion

Practical completion assumes that all construction and landscaping works are finished. At practical completion all remaining tree protection measures should be removed. The Project Arborist should assess tree condition and provide certification of tree protection.

POST-CONSTRUCTION

Defects liability period

Completion of outstanding building or landscaping works following the construction period must not injure trees.

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Final certification

The Project Arborist should assess the condition of trees and their growing environment and make recommendations for any necessary remedial actions.

Following the final inspection and the completion of any remedial works, the Project Arborist should certify (as appropriate) that the completed works have been carried out in compliance with the approved plans and specifications for tree protection. Certification should include a statement on the condition of the retained trees, details of any deviations from the approved tree protection measures and their impacts on trees. Copies of monitoring documentation may be required.

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1344 Lower North East Road Houghton 5131



Adelaide Hills COUNCIL

N

Annotations

- Representors Land
- Representors Land
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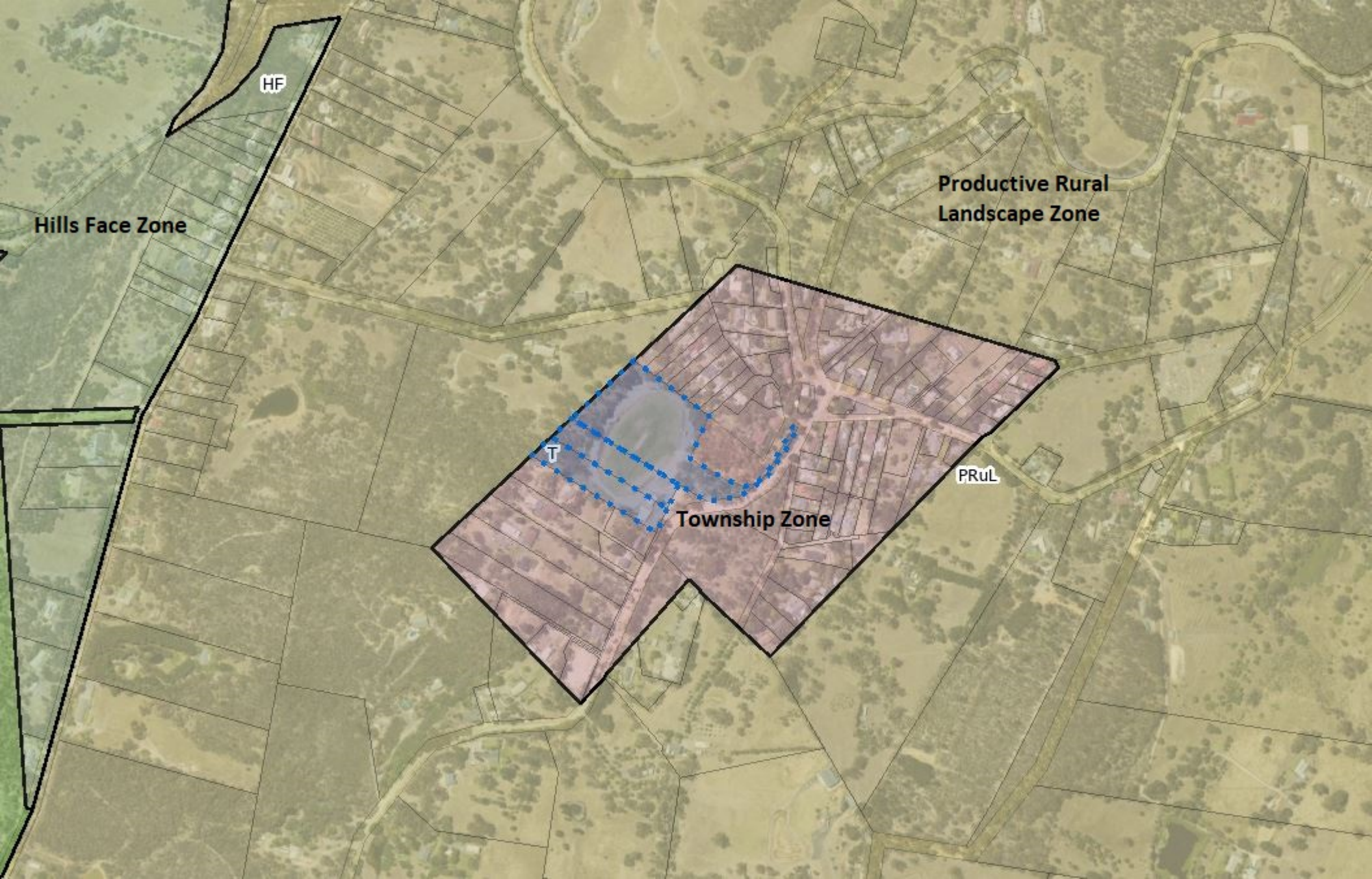
- Representors Land
- Representors Land
- Representors Land
- Representors Land
- Representors Land
- Representor Land
- Subject Land


HF
Hills Face Zone
Productive Rural
Landscape Zone
T
Township Zone
PRuL

Details of submitter No: 1 - Paul Franks

Submitter:	Paul Franks
Submitter Address:	P.O. Box 19, Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Paul

Last name:

Franks

Daytime Phone:

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ○ I support the development
- ○ I support the development with some concerns (detail below)
- ◉ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

I believe the size of the development is too large and the increased evening traffic will increase traffic and noise pollution, negatively affecting the things that make the town special.

I believe this development is too large for the town and will be a "white elephant" within a short amount of time. I would support a smaller initial development with scope to expand proportionally with demand.

Attached Documents

File
No records to display.

Details of submitter No: 4 - Felicity Young

Submitter:	Felicity Young
Submitter Address:	1344 Lower North East Road, Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Felicity

Last name:

Young

Daytime Phone:

0418695632

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

houghton and surrounding suburbs desperately need a community centre for community activities. Organisation's such as SA CWA and locals need somewhere to meet to connect. In times of discasters such as bushfires, the community needs a local place to come together, network and heal. The sporting activities will increase exercise and activities and will allow a place for other activities such as yoga to occur. This community building has been in the planning for 20 years - I am very excited to see it happening.

Attached Documents

File
No records to display.

Details of submitter No: 5 - Jo-Ann Aay

Submitter:	Jo-Ann Aay
Submitter Address:	270 Warner Rd upper hermitage, Upper Hermitage , Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Jo-Ann

Last name:

Aay

Daytime Phone:

0417874507

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

the local community needs this for many reasons- bushfires safe place community events mental health support the hub will need to support this building by hiring it out for functions such a great needed hub for the community thank you to all involved 🙏

Attached Documents

File
No records to display.

Details of submitter No: 6 - Han Robat

Submitter:	Han Robat
Submitter Address:	P.o. box 118, Houghton , Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Han

Last name:

Robat

Daytime Phone:

0404044752

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

this will supply a meeting rendezvous for a myriad of community groups.

Attached Documents

File
No records to display.

Details of submitter No: 7 - Roger Aay

Submitter:	Roger Aay
Submitter Address:	270 Warner road upper heritage , Upper hermitage , Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Roger

Last name:

Aay

Daytime Phone:

0419815439

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

much needed for the community for events and support after disasters

Attached Documents

File
No records to display.

Details of submitter No: 8 - Jura-May MacLean

Submitter:	Jura-May MacLean
Submitter Address:	82 Amberdale Rd , Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Jura-May

Last name:

MacLean

Daytime Phone:

0470524398

Would you like to present your submission in person at a hearing?

- (•) I wish to be heard in support of my representation
- ( ) I do not wish to be heard in support of my representation

Nominated Speaker:

Colin MacLean

My position is:

- ( ) I support the development
- ( ) I support the development with some concerns (detail below)
- (•) I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Noise pollution, it's a natural amphitheater. Security, Bringing people to the area. Holding it as a function center brings noise and rubbish. Having volunteered staff won't go out of their way to clean up. We don't need a function center. We have the Inglewood Hotel, Golf Course, the Gully, and the fox, all within 5 mins drive from the oval. If you need a community hub for anything else but functions is fine. 200 patrons with a liquor license till 12am is not good for anyone in the community!!!! People live in Houghton to live in tranquility, peace, harmony with nature, host to animals. They did not choose to live near a function center. I can imagine people thinking they can do whatever they like there because it gives the illusion of being far away from everything. They will do burnouts on leaving at 12am, they will throw bottles, I can imagine the different crowds it will bring. People in the community come there to walk their dogs and run in peace and enjoy the serenity. I am completely against it.

Attached Documents

File
No records to display.

Details of submitter No: 9 - Sally Caston

Submitter:	Sally Caston
Submitter Address:	PO Box 123, Houghton, Australia, Unknown

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Sally

Last name:

Caston

Daytime Phone:

0412441162

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Attached Documents

File
No records to display.

Details of submitter No: 10 - Julie Sharp

Submitter:	Julie Sharp
Submitter Address:	9 Houghton Hollow Road, Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Julie

Last name:

Sharp

Daytime Phone:

0411 845 334

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

this community needs a centre to congregate for all kinds of reasons!
ie: sport facility for our youth, social support for our aged, disabled & lonely residents, a function centre for for all our social needs, an information sharing hub during times of community stress like fires & service shutdowns! ECT

Attached Documents

File
No records to display.

Details of submitter No: 11 - Carol Ferencz

Submitter:	Carol Ferencz
Submitter Address:	3 Blackhill Road, Houghton, Australia, 5098

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Carol

Last name:

Ferencz

Daytime Phone:

0415616494

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Our local community needs a facility like this for local groups to meet. We have sports clubs who need club rooms. The CWA need meeting rooms to gather and it would be great for future groups such as men's shed, Mother's groups etc. We also need a centre like this to support the community in times of need such as bushfires.

Attached Documents

File
No records to display.

Details of submitter No: 12 - Simone Jones

Submitter:	Simone Jones
Submitter Address:	1419 lower north east road , Houghton , Australia, 5141

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Simone

Last name:

Jones

Daytime Phone:

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Attached Documents

File
No records to display.

Details of submitter No: 13 - Dennise Micklem

Submitter:	Dennise Micklem
Submitter Address:	7 Lofty's Lane , Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Dennise

Last name:

Micklem

Daytime Phone:

0422738726

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Houghton is a great little community and my hope is that this proposal will help to build an even greater sense of community. At the moment it connects the community with local sports and even a dog exercising group (which would be great to develop even further eg fencing). maybe bringing back a play ground area to indeed incorporate a family environment. that's for the outside as for the indoors environment, I have used the footy club facilities for local events eg fundraising quiz night (at exceptional affordable hire costs) and have attended other functions. certainly the club rooms are indeed in need of renovation. I am of the opinion that as long as things remains with a "Local " heart it will be great - eg pricing and availability. The way I see it (my opinion)is that the Inglewood Pub isn't really interested in the locals and the Gully Pub is "down the hill" - surely this can only be good for Houghton - ps we live just off the square and haven't had any issues with the venue

Attached Documents

File
No records to display.

Details of submitter No: 14 - Sarah Nobes

Submitter:	Sarah Nobes
Submitter Address:	86 Amberdale Road, Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Sarah

Last name:

Nobes

Daytime Phone:

+61400074808

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ○ I support the development
- ◉ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Concerns of the community should be heard and responded to prior to this going ahead

Attached Documents

File
No records to display.

Details of submitter No: 15 - Kathy Russell

Submitter:	Kathy Russell
Submitter Address:	45 Milbanca Road, Houghton , Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Kathy

Last name:

Russell

Daytime Phone:

0417 877 838

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Excellent community sports and entertainment hub. It's take the whole time I've lived in the area to get to this point and should be approved

Attached Documents

File
No records to display.

Details of submitter No: 16 - William and Rosalie Caire

Submitter:	William and Rosalie Caire
Submitter Address:	67 Amberdale Road, Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

William and Rosalie

Last name:

Caire

Daytime Phone:

83805491

Would you like to present your submission in person at a hearing?

- (•) I wish to be heard in support of my representation
- ( ) I do not wish to be heard in support of my representation

Nominated Speaker:

Rosalie Caire

My position is:

- ( ) I support the development
- ( ) I support the development with some concerns (detail below)
- (•) I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

The function centre will be having live music that will easily travel up the hill and be heard and be disruptive to many Amberdale Rd residents. This increase in noise pollution will also impact upon the wildlife in the area.

The increased traffic poses a concern for locals especially those with young families. Better carparking and traffic control needs attention.

Also there's an increase security risk for houses that back onto the oval (many of which have access gates)

Attached Documents

File
No records to display.

Details of submitter No: 17 - robert garrett

Submitter:	robert garrett
Submitter Address:	79 Amberdale Rd, houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

robert

Last name:

garrett

Daytime Phone:

+61409079935

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ○ I support the development
- ◉ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

My concerns are the noise levels from use of the function center balcony which will no doubt be amplified into local residents homes.

This concern is already evident with current sporting events etc.

Further consultation with acoustic engineers and local residence is a must to move forward.

Attached Documents

File
No records to display.

Details of submitter No: 18 - Andrew Rogers

Submitter:	Andrew Rogers
Submitter Address:	2 Rhona Court, Surrey Downs, Australia, 5126

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Andrew

Last name:

Rogers

Daytime Phone:

0405063900

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ○ I support the development
- ◉ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

As a 10 year member of the Houghton Football Club and someone who has had numerous direct dealings with the local community group, I have serious concerns over numerous parts of this development including;

1. The support that SANFL and State Government have given the project in the way of funding (via the Houghton Football Club) despite the fact that the preferred intention is for the building to operate as a commercial venue including meals, functions (such as weddings) and other community based initiatives rather than being for Sporting Clubs first and foremost. It is a football oval and the only genuine community club that exists in Houghton is the football club which has recently expanded (off their own backs) into a booming junior football club that has numerous junior, senior, male and female teams. The build should reflect this.

2. The clear lack of project management skills and the ability for the local community group to actually execute the project. The local football club has been forced to relocate for matches for nearly 12 months now and no progress has actually been made with the project. There are still no approvals via council and the project has not gone out to tender for qualified organisations to

manage the project. The intention of local members of the community to firstly manage the project and secondly provide their own services and expertise does not mean that the project will be completed in a timely and professional manner. The football club has genuine concerns that this will not be completed for years to come, despite state government funding stating that the project should be completed by November 2021.

3. The local football club, as previously stated is growing in numbers at a rapid rate. We need a facility that reflects this growth, but this will NOT be completed in a timely or appropriate manner via a community build. This needs to be addressed as a matter of urgency.

I am more than happy to be contacted to discuss any of the above concerns further.

Attached Documents

File
No records to display.

Details of submitter No: 19 - Travis Stringer

Submitter:	Travis Stringer
Submitter Address:	74 Amberdale Road , Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Travis

Last name:

Stringer

Daytime Phone:

0430 127 339

Would you like to present your submission in person at a hearing?

- (•) I wish to be heard in support of my representation
- ( ) I do not wish to be heard in support of my representation

Nominated Speaker:

Kirsty Stringer

My position is:

- ( ) I support the development
- ( ) I support the development with some concerns (detail below)
- (•) I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Travis and Kirsty Stringer
74 Amberdale Road
Houghton SA 5131

Application ID 21008654.

As residents whose property backs onto the Houghton Oval within metres of this proposed development we are refusing consent to planning for this development for the following reasons:

We would like a written response please to the following:

Noise Related Concerns:

The Acoustic Structure of the Houghton Oval and surrounding area creates an Amphitheatre effect the noise from the oval is amplified due to its structure and therefore a very small amount of noise is heard clearly at a great distance. This noise is clearly audible from our home. We are refusing consent due to the noise that will be generated from this development.
Certification by an Acoustic Engineer providing a report internal and external attesting that the music venue is designed to achieve the music noise criterion as noted in the Environment Protection Authority Music Noise from Indoor Venues and the South Australian Planning System Guidelines EPA 279/15. This has not been provided.
For the development and surrounding area, the development is required to adhere to all acoustic guidelines that are set out in the Environment Protection Authority Music Noise from Indoor Venues and the South Australian Planning System Guidelines EPA 279/15 updated July 2015.
We are objecting to the structure as having a balcony that is directly facing our property and a staircase and lift that are also on the side of the structure facing our home this will create extreme noise from all of these 3 elements due to the materials used and positioning.
The sliding doors that are in the design opening up the indoor space to the outdoor balcony between grid 7-9 and grid f-h again this will mean all internal noise will be outside travelling towards our home this is why we are refusing consent. This totally contradicts Point 3.5 entertainment on the letter from Matt Thomas to Doug Samardzija at the Adelaide Hills Council that states all entertainment will be indoors why are there large sliding doors and a balcony area if this is the case?
Eating and Drinking on the balcony will project large amounts of noise to our home by increasing function floor space. This will not then be noise contained indoors and is another reason why we are refusing consent to this application.
The noise generated from this venue will impact us as local residents from engaging in conversation in our outdoor areas (e.g., our backyards) recreation in our living room and resting or sleeping in a bedroom we must be protected and this development (amenity)must not have an adverse effect on the surrounding areas. (As per the EPA Music Noise form Indoor Venues and South Australian Planning System Guidelines EPA 279/15 updated July 2015 the current plans do not protect us as residents from this.
This development would need to reduce the potential environmental nuisance caused by noise after having the assessment undertaken by the planning authority and Consumer and Business Services If the issues raised in the EPA Guideline Music Noise from Indoor Venues and the South Australian Planning System Guidelines EPA 279/15 are properly considered at the planning stage the facility/venue should be able to operate without adverse impact to the local residents. The current plans do not protect us as residents from this.

The noise will also impact the local wildlife and birds as will the lighting associated with this development.
Another very important reason we are refusing consent to this application.

Traffic Noise
We live within meters of this facility and therefore the associated noise with the cars going to and from this development is also a big concern for us and another reason we are rejecting this development application. With a capacity of up to 200 people this is going to generate a great deal of traffic noise and people going to their cars entering and leaving the premises late at night potentially intoxicated resulting in more noise.
Where are they going to park there is not enough car parking space in the plans only allowing for 34 cars this falls well short of the capacity of the facility, we do not want people parking around the oval and parking at the base of our property where there is an area that would be used as a turning space. This has not been considered in the plans.
Please refer to car park noise in the EPA Guideline 279/15

The design of this development is extremely large noise from this development and the proposed use of this facility will mean that we will have constant noise in our homes and backyard which will cause anxiety and stress to us.

Safety Concerns/ Required Council Upgrades
There is a 7 metre drop off directly outside the facility where guard rails would need to be installed
There is not enough lighting at all on North East Road the roads in the Houghton area are dark and hard to navigate so all main roads leading to the oval would need to be upgraded with lighting, line marking, signage speed humps and general upgrading. This has not been considered in the plans.
Houghton Hollow Road is extremely narrow with a hillside one side and a creek to the other meaning traffic traveling in both directions is difficult on this road and this would become the main entrance to this facility and be potentially very dangerous.

Bushfire Safety/Concerns
The Houghton Oval is also our Last Refuge Space in the event of a Bushfire how would this work if there was a function there when we require it for an emergency situation? This is not outlined anywhere in the plans.

Water
A settlement pond designated to the right-hand side of the development is of concern as a haven for vermin, snakes, rats, mosquitos and possible smell associated with this pond this is not something that we want in such close proximity to our home.

Liquor Licensing
Licensing for this venue what is the Liquor Licensing Application for this development?
It states on the letter from Matt Thomas to Doug Samardzija at the Adelaide Hills Council that it is a new liquor license what type of license is this? This is not stated.
We have no understanding of what will govern this venue until we are made aware of the Liquor License it has been issued or is applying for? This leaves us very vulnerable and is a reason we are opposed to this development.
We would like to know if there is an intent to seek a Gaming License for this development in the future? We would be opposed to this as this would then increase again the volume of people and traffic therefore creating more noise.

Plans
A full set of plans and specifications was not made available on the Plan SA portal
Items of concern: Linings within the facility walls ceilings, eaves not nominated, insulation not nominated.
Glass not nominated, floor coverings not nominated, structural design first floor material not nominated example concrete all of this is important for acoustic planning.

There are numerous other venues within our local Houghton area in which functions/ events could be held e.g., Inglewood Inn, Glen Ewin Winery and the Highercombe Golf Club we do not need a new function centre we have other businesses in our local area that we should be supporting that already provide this to the community.
This proposed development could seriously impact these businesses we feel that that is not in the best interests of the community we need to look after the current local businesses in our community particularly in recent times with the negative impact of the pandemic.

We moved to Houghton for its beautiful surround’s peace and quiet, wildlife and to enjoy living in

the Adelaide Hills to raise our family. We did so with the Houghton District Football Club as a part of the Community Owned Oval to the rear of our property we did not buy our home with a 200-person capacity Function Hall in our backyard/ Pub with a balcony area to encourage people from outside of our local community to come and drink and hold their functions. We as the members of this community that stand to be the most effected oppose this development and feel that every member of the community would be responding exactly as we are if this was at the rear of their property.

We want to continue to live in our home with the peace and quiet that we have always had.

Kind Regards
Travis and Kirsty Stringer

Attached Documents

File
No records to display.

Details of submitter No: 20 - Brett and Caroline Saltmarsh

Submitter:	Brett and Caroline Saltmarsh
Submitter Address:	PO BOX 35 , Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Brett and Caroline

Last name:

Saltmarsh

Daytime Phone:

0417864165

Would you like to present your submission in person at a hearing?

- (•) I wish to be heard in support of my representation
- ( ) I do not wish to be heard in support of my representation

Nominated Speaker:

Caroline Saltmarsh

My position is:

- ( ) I support the development
- ( ) I support the development with some concerns (detail below)
- (•) I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Brett and Caroline Saltmarsh
88 Amberdale Road
Houghton SA 5131

Application ID 21008654

We wish to oppose the building of the 2 story function centre on Houghton oval. As residents whose property backs on to the oval we are deeply concerned about the noise levels that will greatly impact our quality of life. We have lived at Houghton since 2001 and enjoy the tranquility of living that the Adelaide Hills brings.

The proposed 200 capacity function centre for the Houghton Oval will be open until 10pm on

weekdays and until 12am on Fridays and Saturdays which will cause significant noise that we believe will exceed the Certification of a Acoustic Engineer.

Thus far a report from has not been provided from an Acoustic Engineer as
per the South Australian Planning System EPA guidelines 279/15, certifying that the venue is designed within guidelines of internal and external environmental noise.

We oppose the building design that has a wrap around balcony with sliding doors allowing access for people to eat, congregate and create amplified noise from conversation and entertainment inside the building. The building faces directly out onto all neighboring properties.

We oppose the building design with stairs leading from the balcony to ground level and an external lift. This will create continual noise day and night from people moving up and down the stairs. Noise that will be amplified to not only our home but every dwelling that borders the oval.

The acoustic structure of the oval creates an amplified effect from any noise on the oval. Our home sits above the banks of the oval with neighboring properties and the noise that will be generated from people attending functions in the building will create undue stress to us as homeowners.

This will impact our ability to spend time in our own backyards and the noise will also travel to inside our homes.

The Houghton area has an abundance of native wildlife around the Community oval which will also be greatly impacted by the increased noise, traffic and lighting around the oval.

Safety Concerns

The Houghton Oval is a Last Refuge Space in the event of a bushfire, which would be totally inaccessible in an emergency if there were a function on. There is only one entry and exit to the oval.

The plans do not state clearly where the parking will be for up to 200 people it only details parking for 34 cars. If there is the allowance for people to park around the oval this will also create noise from cars and people leaving at the end of the night.

Water/Waste

We have concerns for the proposed settlement pond designed to sit on the right hand side of the development, which is below our property. This could cause the increase in vermin, rats, mosquitos and an odour. Will the pond be fenced off and is there a storm water management plan that meets all the requirements?

Liquor Licensing

It is unclear on the submitted plans what the Liquor Licensing application is and if there is intent to apply for a gaming license in the future.

Building plans

There has not been adequate consultation with community members with regard to the planning of the proposed function centre on the oval.

We moved to the Hills area for the tranquility and to enjoy the native flora and fauna. The impact of building a 200 capacity function centre on our back door will have very negative impact on our lifestyle and wellbeing due to the noise and environmental pollution.

The Raiders Football club has always had a base at the Houghton Community Oval but the noise generated from football games and the clubrooms is not on every day or every weekend. There has always been a balance of activity on the oval and the community being able to enjoy the quiet ambience of the surrounds.

We ask that you consider carefully our opposition to the current building plans for the 200 capacity function center on Houghton Oval and how the impact of such a build would affect not only us as homeowners but also the community.

We appose the building plans.

Kind regards
Brett and Caroline Saltmarsh

Attached Documents

File
No records to display.

Details of submitter No: 21 - ISLA MACLEAN

Submitter:	ISLA MACLEAN
Submitter Address:	82 AMBERDALE ROAD, HOUGHTON, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

ISLA

Last name:

MACLEAN

Daytime Phone:

0468391725

Would you like to present your submission in person at a hearing?

- (•) I wish to be heard in support of my representation
- ( ) I do not wish to be heard in support of my representation

Nominated Speaker:

COLIN MACLEAN

My position is:

- ( ) I support the development
- ( ) I support the development with some concerns (detail below)
- (•) I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

I wish to retract my previous submission as I did not realise the full extent of the proposed building plans.

This proposed building structure and its close proximity and purpose will inadvertently greatly disadvantage all the surrounding properties. The acoustic structure and the surrounding escarpment of the Houghton Oval acts like an amphitheatre, any noise is carried into our homes similar to the effect of The Whispering Wall. The proposed building structure with a capacity of 200 patrons has in its plans an outdoor metal staircase, external lift and a second storey wrap around external balcony with large sliding doors to accommodate maximum floor space, these factors will produce an unacceptable amount of noise. This will greatly disturb the relished tranquil environment of the residents who chose to live here along with the native fauna and wildlife.

Attached Documents

File
MacLean

Application ID 21008654

Isla & Colin MacLean

82 AMBERDALE ROAD

HOUGHTON SA 5131

Colin and Isla MacLean of 82 Amberdale Road, Houghton, oppose the proposed Houghton Oval Building Development for the following reasons: -

1. This proposed building structure and its close proximity and purpose will inadvertently greatly disadvantage all the surrounding properties.

2. The acoustic structure and the surrounding escarpment of the Houghton Oval acts like an amphitheatre, any noise is carried into our homes similar to the effect of Whispering Wall. We object to the second floor part of this development, as it will create excessive noise due to its design.

3. There is a proposed outdoor metal staircase, which will be a noise nuisance as patrons move up and down the stairs. The proposed lift will also emit noise. These proposed elements face our property.

4. There is a proposed external wrap around 2nd storey balcony with large sliding doors, again this design is facing directly in line of sight of our 2nd storey bedroom and balcony, with no natural or man made obstacles for privacy or to absorb or deflect sound waves. The large sliding doors of the proposed function centre will invariably be open to allow maximum floor space for the function, thus allowing patrons to be on the balcony and the subsequent noise created by live music and patrons within and out of the structure will be emitted, this will greatly disturb the tranquil environment that the residing residents have relished for many years.

5. As this proposed function centre has a capacity of up to 200 patrons, the plans show only 34 car parking spaces. This seems to be an inadequate amount of spaces proportional to patrons. So therefore it is obvious when a function is held such as a wedding, the inadequate amount of park spaces will result in patrons parking their cars all around the oval boundary road which is even closer to our homes and this will create even more excessive noise as they return to their cars in the early hours of the morning, especially if intoxicated. We can hear two people talking on the oval 400 metres from our house due to the acoustic nature of the oval, multiply this by 100!!! This would make living here intolerable.

6. We oppose the plan to have septic settlement ponds adjacent to the base of our property, as it will attract mice, rats, snakes and mosquitoes and ongoing sewerage odours.

Regards

Colin & Isla MacLean

Details of submitter No: 22 - COLIN MACLEAN

Submitter:	COLIN MACLEAN
Submitter Address:	82 AMBERDALE ROAD, HOUGHTON, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

COLIN

Last name:

MACLEAN

Daytime Phone:

0431849396

Would you like to present your submission in person at a hearing?

- (●) I wish to be heard in support of my representation
- ( ) I do not wish to be heard in support of my representation

Nominated Speaker:

COLIN MACLEAN

My position is:

- ( ) I support the development
- ( ) I support the development with some concerns (detail below)
- (●) I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

I wish to retract my previous submission as I did not realise the full extent of the proposed development.

This proposed building structure and its close proximity and purpose will inadvertently greatly disadvantage all the surrounding properties. The acoustic structure and the surrounding escarpment of the Houghton Oval acts like an amphitheatre, any noise is carried into our homes similar to the effect of The Whispering Wall. The proposed building structure with a capacity of 200 patrons has in its plans an outdoor metal staircase, external lift and a second storey wrap around external balcony with large sliding doors to accommodate maximum floor space, these factors will produce an unacceptable amount of noise. This will greatly disturb the relished tranquil environment of the residents who chose to live here along with the native fauna and wildlife.

Attached Documents

File
Maclean

Application ID 21008654

Isla & Colin MacLean

82 AMBERDALE ROAD

HOUGHTON SA 5131

Colin and Isla MacLean of 82 Amberdale Road, Houghton, oppose the proposed Houghton Oval Building Development for the following reasons: -

1. This proposed building structure and its close proximity and purpose will inadvertently greatly disadvantage all the surrounding properties.

2. The acoustic structure and the surrounding escarpment of the Houghton Oval acts like an amphitheatre, any noise is carried into our homes similar to the effect of Whispering Wall. We object to the second floor part of this development, as it will create excessive noise due to its design.

3. There is a proposed outdoor metal staircase, which will be a noise nuisance as patrons move up and down the stairs. The proposed lift will also emit noise. These proposed elements face our property.

4. There is a proposed external wrap around 2nd storey balcony with large sliding doors, again this design is facing directly in line of sight of our 2nd storey bedroom and balcony, with no natural or man made obstacles for privacy or to absorb or deflect sound waves. The large sliding doors of the proposed function centre will invariably be open to allow maximum floor space for the function, thus allowing patrons to be on the balcony and the subsequent noise created by live music and patrons within and out of the structure will be emitted, this will greatly disturb the tranquil environment that the residing residents have relished for many years.

5. As this proposed function centre has a capacity of up to 200 patrons, the plans show only 34 car parking spaces. This seems to be an inadequate amount of spaces proportional to patrons. So therefore it is obvious when a function is held such as a wedding, the inadequate amount of park spaces will result in patrons parking their cars all around the oval boundary road which is even closer to our homes and this will create even more excessive noise as they return to their cars in the early hours of the morning, especially if intoxicated. We can hear two people talking on the oval 400 metres from our house due to the acoustic nature of the oval, multiply this by 100!!! This would make living here intolerable.

6. We oppose the plan to have septic settlement ponds adjacent to the base of our property, as it will attract mice, rats, snakes and mosquitoes and ongoing sewerage odours.

Regards

Colin & Isla MacLean

Details of submitter No: 23 - James and Sharon Freeman

Submitter:	James and Sharon Freeman
Submitter Address:	78 Amberdale Rd, Houghton, Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

James and Sharon

Last name:

Freeman

Daytime Phone:

0477201718

Would you like to present your submission in person at a hearing?

- (●) I wish to be heard in support of my representation
- ( ) I do not wish to be heard in support of my representation

Nominated Speaker:

James Freeman

My position is:

- ( ) I support the development
- ( ) I support the development with some concerns (detail below)
- (●) I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Please see attached PDF Document

Attached Documents

File
No records to display.

Details of submitter No: 24 - Carolyn Laslett

Submitter:	Carolyn Laslett
Submitter Address:	PO Box 214, , St Agnes, Australia, 5097

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Carolyn

Last name:

Laslett

Daytime Phone:

0422626981

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ○ I support the development
- ○ I support the development with some concerns (detail below)
- ◉ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Main concerns are related to noise, safety and environment and these are elaborated in the attached document.

Attached Documents

File
No records to display.

Details of submitter No: 25 - Robert Craig

Submitter:	Robert Craig
Submitter Address:	1446 Lower North East Rd , Houghton , Australia, 5131

South Australia
Planning, Development and Infrastructure ACT 2016

Representation on Application

First name:

Robert

Last name:

Craig

Daytime Phone:

0412718263

Would you like to present your submission in person at a hearing?

- ○ I wish to be heard in support of my representation
- ◉ I do not wish to be heard in support of my representation

My position is:

- ◉ I support the development
- ○ I support the development with some concerns (detail below)
- ○ I oppose the development

The specific reasons I believe that planning consent should be granted/refused are:

Great spot for all local people and a place to develop more interaction in the area among young and old. in my opinion a win win for us all.

Attached Documents

File
No records to display.

Multi-use Houghton Community Hub and Uni-Sex Changerooms

This community led project is part of a master plan developed in 2003. Many aspects of the master plan have been completed prior to the commencement of the Houghton Community Hub Project. See presentation at end of this document.

The master plan and building design has been shared with the community over the past 15 years as the management committee has been enacting the 2003 master Plan.

With the original AHC Planning approved design, 4 years of work went into achieving the approval including using Tonkin consulting to develop the Stormwater management plan and Wastewater Management plan that was then approved by SA Health.

The community space of the New development will primarily be used for a range of sporting engagement activities and community engagement activities. Sarah Hunt from the Torrens Valley Community Centre has been engaged with and is eager to utilise the new facility.

The primary sporting body, the Houghton District Football club has a rapidly expanding Juniors and Girls football program that will significantly benefit from the new facilities. It will be possiable to expand other minor sporting activites that are being developed for the Memorial Park.

The respondents have been individually addressed below.

1. The new facility is not significantly bigger than the combined area of the 3 existing old buildings and temporary buildings. The new facility is also of a similar size to the developments at other Adelaide hills locations like Kersbrook, Birdwood, Gumeracha, Lobethal, Balhannah, Uraidla, Heathfield etc
   The Houghton Districts Football club uses the current facility 5 – days a week. The capacity to have additional evening events is limited. The committee expects there may be an additional 12 function style events per year.

   Building a smaller building that doesn't meet the needs of the current users.
   The meeting area has been designed to create a facility that enables local gatherings which is not currently possible in the local region.

8. The Memorial Park will still be available for walking dogs and running in a peaceful tranquil location. This will not change with the construction of the new facility.

   The new Facility has been acoustically designed to meet SA Planning System Guidelines EPA279/15 and will reduce the amount of noise compared to what would be coming from the existing clubrooms.

   The Memorial Park has been a meeting place since its inception in the 1950's. The focus for the Memorial Park is to provide opportunities for the community to come together and build resilience and community spirit.

Volunteers have been looking after the Memorial park for almost 70 years. The new facility will enable better engagement with volunteers in the local area and will make it easier to maintain the Park.

The Inglewood Inn and Fox and Firkin are commercial enterprises and are not fit for community engagement activities. The Highercombe golf club is not big enough and its location doesn't meet the needs of the stake holders and users of the Memorial Park.

16. The existing facility has the ability to hold live music. The new Community Space has been acoustically designed to meet SA Planning System Guidelines EPA279/15standard and will reduce the amount of noise compared to what would be coming from the existing clubrooms.

Traffic management consultants have been use in the design to meet the standards required for access around the new facility.

Security risk already exist with access gates on boundary fences.

17. The new Community Space has been acoustically designed to meet SA Planning System Guidelines EPA279/15 standards and will reduce the amount of noise compared to what would be coming from the existing clubrooms.

18. The primary intention for the new Community Hub and Sports Facility is to provide community engagement opportunities and to provide the community with a multi-use Sports Facility.

The Sports Minister Corey Wingard is using the Houghton Community Hub Project as a Case study on how community projects should be developed.

The site could not be used for Games for safety reasons and when no training facilities could be located the management committee adjusted the access to the Memorial Park so the site can be used for training. It has been agreed by the committee that the Memorial Park will be made available for matches in 2022 now that the risks are better understood.

The Management committee understands the project is significant and is working under the guidance of a high level project manager. The completion of the community project will be possible by the generous support of local sponsors.

The president of the HDFC has confirmed this submission has been submitted as an individual and not as a member of the HDFC executive committee.

19. The new Facility has been acoustically designed to meet SA Planning System Guidelines EPA279/15 standards and will reduce the amount of noise compared to what would be coming from the existing clubrooms.

Traffic management consultants have been use in the design to meet the standards required for access around the new facility.

The last resort refuge status of the Memorial Park is the Oval and has no bearing on the new Community Hub.

A permanent stormwater pond already exists in the natural flow of the water way and the additional pond designed to allow settlement of solids before entering the main water way will be the same as the existing pond.

As a Community Facility there will be no gaming licence. The new Community hub will need to comply with liquor licence requirements. The HDFC currently has a Sports Club Liquor licence for the existing facility and the transfer of this Liquor licence will be addressed in due course.

The Inglewood Inn and Fox and Firkin are commercial enterprises and are not fit for community engagement activities. The Highercombe golf club is not big enough and its location doesn't meet the needs of the stake holders and users of the Memorial Park.

20. The new Community Space has been acoustically designed to meet SA Planning System Guidelines EPA279/15standard and will reduce the amount of noise compared to what would be coming from the existing clubrooms.The last resort refuge status of the Memorial Park is the Oval and has no bearing on the new Community Hub. The oval has multiple access gates and the new development will increase the main road access.

Traffic management consultants have been use in the design to meet the standards required for access around the new facility.

A permanent stormwater pond already exists in the natural flow of the water way and the additional pond designed to allow settlement of solids before entering the main water way will be the same as the existing pond.

As a Community Facility there will be no gaming licence. The new Community hub will need to comply with liquor licence requirements. The HDFC currently has a Sports Club Liquor licence for the existing facility and the transfer of this Liquor licence will be addressed in due course.

21+22 The new Facility has been acoustically designed to meet standards….. and will reduce the amount of noise compared to what would be coming from the existing clubrooms.

Traffic management consultants have been use in the design to meet the standards required for access around the new facility.

NO SEPTIC PONDS????? A permanent stormwater pond already exists in the natural flow of the water way and the additional pond designed to allow settlement of solids before entering the main water way will be the same as the existing pond.

23 No File

24 The new Community Space has been acoustically designed to meet SA Planning System Guidelines EPA279/15standard and will reduce the amount of noise compared to what would be coming from the existing clubrooms.



HOUGHTON, INGLEWOOD & HERMITAGE MEMORIAL PARK INC.

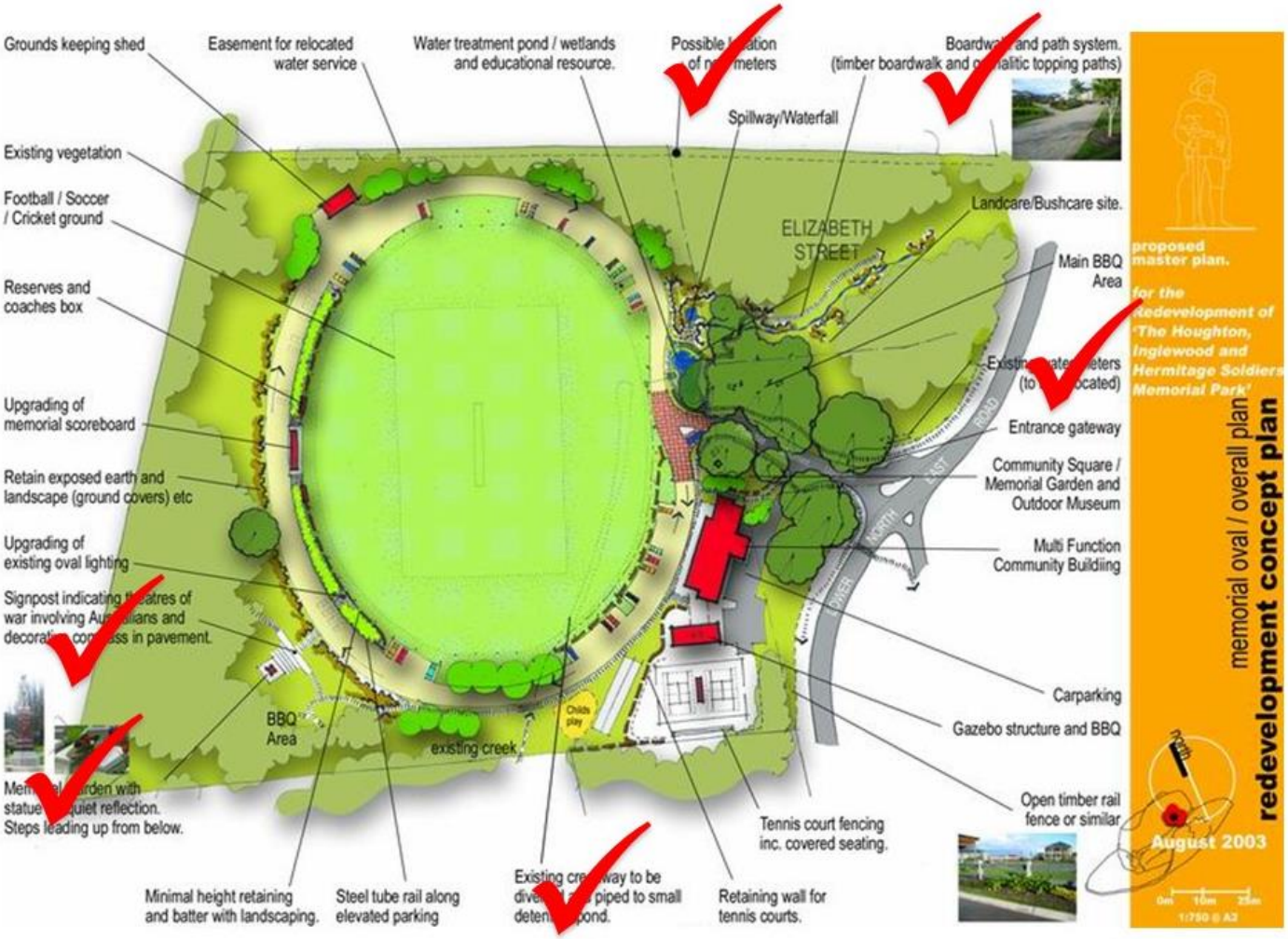


Adelaide Hills Council Presentation

Matt Thomas
President

History of Oval

- Land Purchased in 1951 – 1300 Pounds
- Oval Constructed 1953 – 1200 Pounds
- Fundraising – Rodeos, Show jumping, Auctions, Fairs and Festivals
- Driven by a voluntary community management committee


Grounds keeping shed
Easement for relocated water service
Water treatment pond / wetlands and educational resource.
Spillway/Waterfall
Existing vegetation
Football / Soccer / Cricket ground
Reserves and coaches box
Upgrading of memorial scoreboard
Retain exposed earth and landscape (ground covers) etc
Upgrading of existing oval lighting
Signpost indicating theatres of war involving Australians and decorative compass in pavement.
Memorial garden with statue for quiet reflection. Steps leading up from below.
BBQ Area
existing creek
Child's play
ELIZABETH STREET
Landcare/Bushcare site.
Main BBQ Area
Entrance gateway
Community Square / Memorial Garden and Outdoor Museum
Multi Function Community Buildiing
Carparking
Gazebo structure and BBQ
Open timber rail fence or similar
Tennis court fencing inc. covered seating.
Retaining wall for tennis courts.
Minimal height retaining and batter with landscaping.
Steel tube rail along elevated parking
proposed master plan.
for the redevelopment of 'The Houghton, Inglewood and Hermitage Soldiers Memorial Park'
memorial oval / overall plan
redevelopment concept plan
August 2003


We Will Remember Them








YPRES
CORAL SEA
TRANSVAAL
EL ALAMEIN
KOKODA
TOBRUK
VILLERS
BRETONNEUX





Houghton Village Common

Est 1841

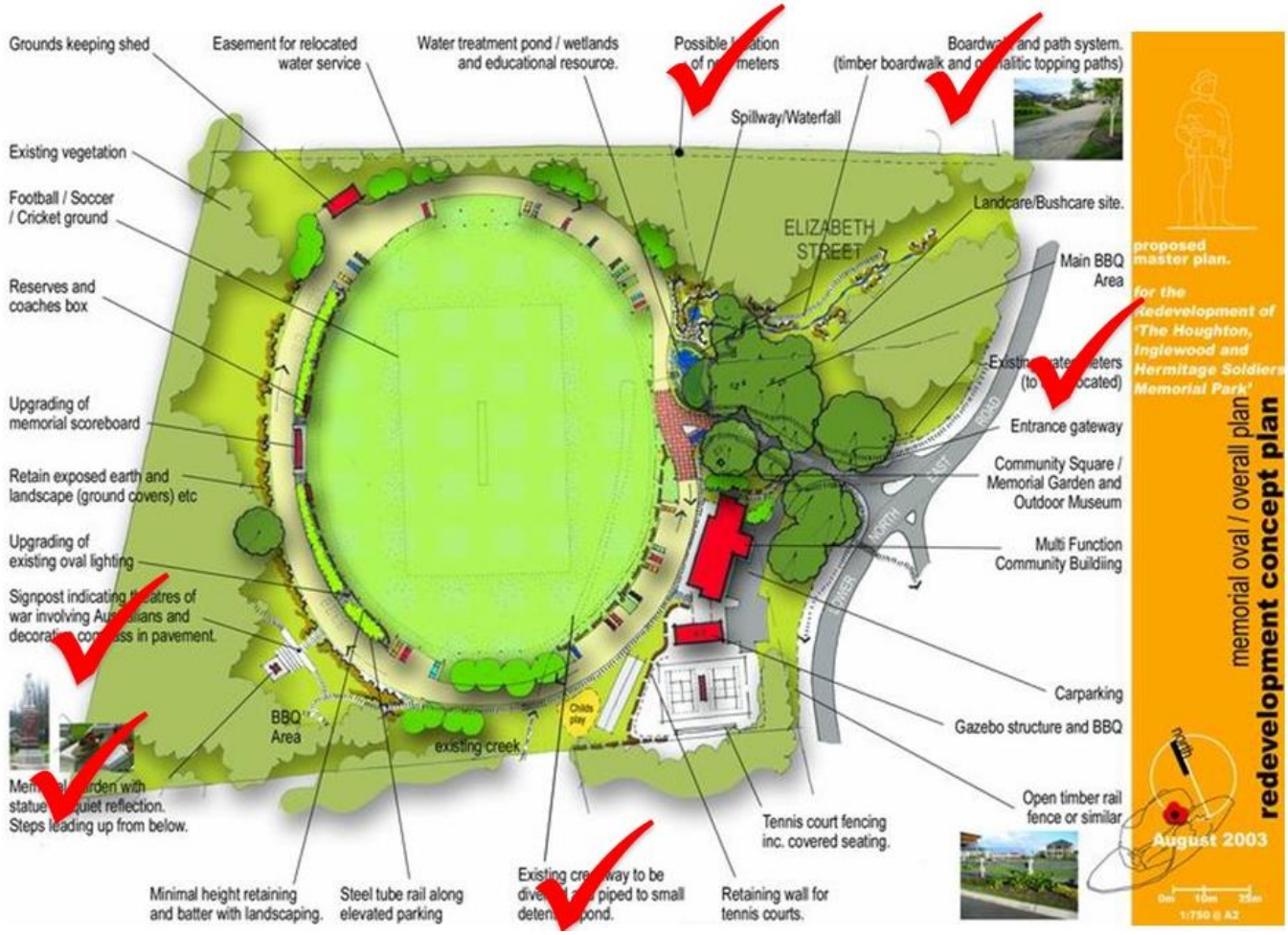









Houghton
Soldiers Memorial Walk &
Remembrance Wall
Anzac Day, 2005
SOLDIERS
MEMORIAL WALK
We Will Remember Them


Grounds keeping shed
Easement for relocated water service
Water treatment pond / wetlands and educational resource.
Spillway/Waterfall
Boardwalk and path system. (timber boardwalk and asphaltic topping paths)
Existing vegetation
Football / Soccer / Cricket ground
Reserves and coaches box
Upgrading of memorial scoreboard
Retain exposed earth and landscape (ground covers) etc
Upgrading of existing oval lighting
Signpost indicating theatres of war involving Australians and decorative concrete in pavement.
Memorial garden with statue for quiet reflection. Steps leading up from below.
BBQ Area
existing creek
Childs play
Minimal height retaining and batter with landscaping.
Steel tube rail along elevated parking
Retaining wall for tennis courts.
Tennis court fencing inc. covered seating.
Landcare/Bushcare site.
ELIZABETH STREET
Main BBQ Area
Entrance gateway
Community Square / Memorial Garden and Outdoor Museum
Multi Function Community Building
Carparking
Gazebo structure and BBQ
Open timber rail fence or similar
proposed master plan.
for the redevelopment of 'The Houghton, Inglewood and Hermitage Soldiers Memorial Park'
memorial oval / overall plan
redevelopment concept plan
August 2003
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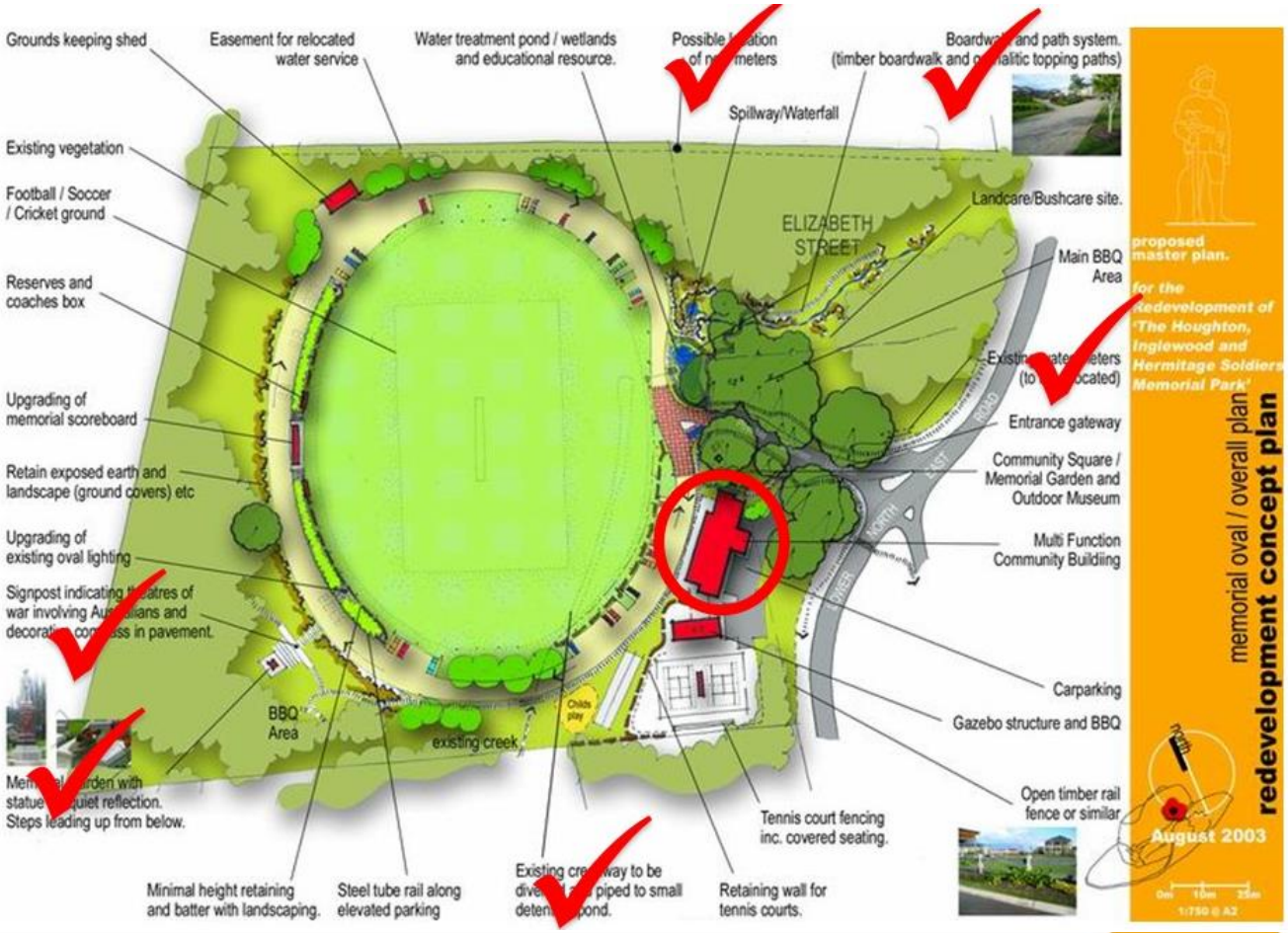
Grounds keeping shed
Easement for relocated water service
Water treatment pond / wetlands and educational resource.
Spillway/Waterfall
Existing vegetation
Football / Soccer / Cricket ground
Reserves and coaches box
Upgrading of memorial scoreboard
Retain exposed earth and landscape (ground covers) etc
Upgrading of existing oval lighting
BBQ Area
existing creek
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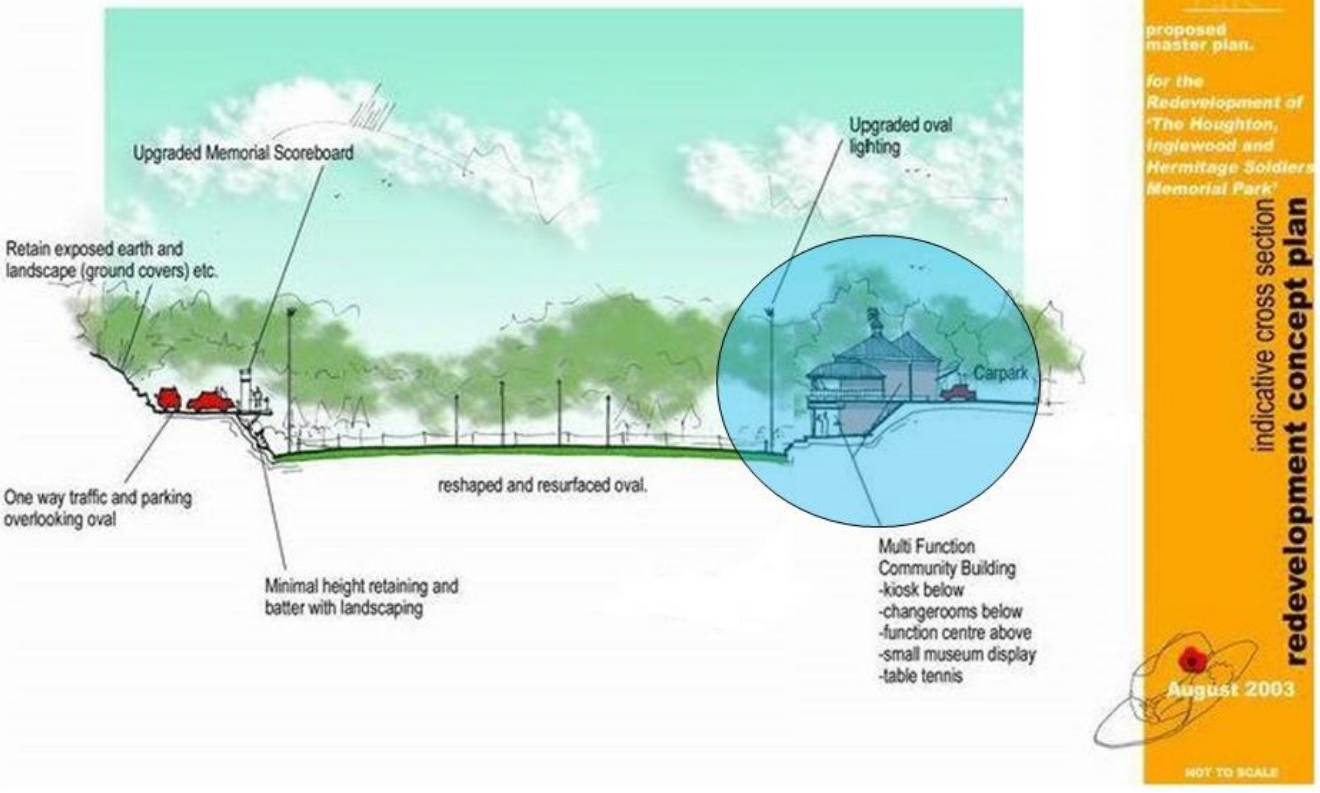
ELIZABETH STREET
Landcare/Bushcare site.
Main BBQ Area
Entrance gateway
Community Square / Memorial Garden and Outdoor Museum
Multi Function Community Buildiing
Carparking
Gazebo structure and BBQ
Open timber rail fence or similar
Tennis court fencing inc. covered seating.
Retaining wall for tennis courts.
Minimal height retaining and batter with landscaping.
Steel tube rail along elevated parking
proposed master plan.
for the Redevelopment of 'The Houghton, Inglewood and Hermitage Soldiers Memorial Park'
memorial oval / overall plan
redevelopment concept plan
August 2003
1:750 @ A2


Upgraded Memorial Scoreboard
Upgraded oval lighting
Retain exposed earth and landscape (ground covers) etc.
Carpark
One way traffic and parking overlooking oval
reshaped and resurfaced oval.
Minimal height retaining and batter with landscaping
Multi Function Community Building
-kiosk below
-changerooms below
-function centre above
-small museum display
-table tennis
proposed master plan.
for the Redevelopment of 'The Houghton, Inglewood and Hermitage Soldiers Memorial Park'
indicative cross section
redevelopment concept plan
August 2003
NOT TO SCALE



EXTERNAL COLOUR GUIDE

ROOF	COLORBOND	PALE EXHAUST
FRAME	COLORBOND	PALE EXHAUST
GUTTERS	COLORBOND	PALE EXHAUST
BRICK	BRICK VENEER	LIGHT BROWN
VENEER		
WINDOWS	POWDERCOATED ALUMINIUM	MANTRIC SILVER GRID
FRONT DOOR		
GRIDE DOOR	PANEL / ROLLER	
SUNRAY & FRAMING		
FENCING		

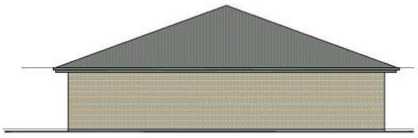




Houghton Community Hub

Original Planning approved design



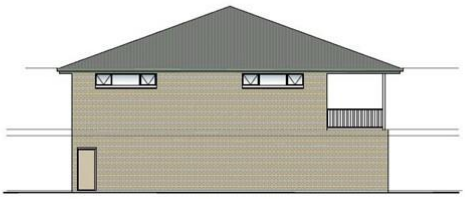


EXTERNAL COLOUR GUIDE

ROOF	COLORBOND	PALE EUCALYPT
FASCIA	COLORBOND	PALE EUCALYPT
GUTTERS	COLORBOND	PALE EUCALYPT
BRICK	BRICK VENEER	LIGHT BROWN
RENDER		
WINDOWS	POWDERCOATED ALUMINIUM	MONUMENT
FRONT DOOR		
GARAGE DOOR	PANEL / ROLLER	
DRIVEWAY & PAVING		
FENCING		

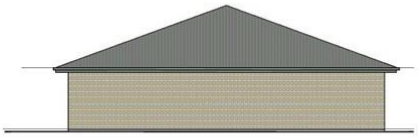


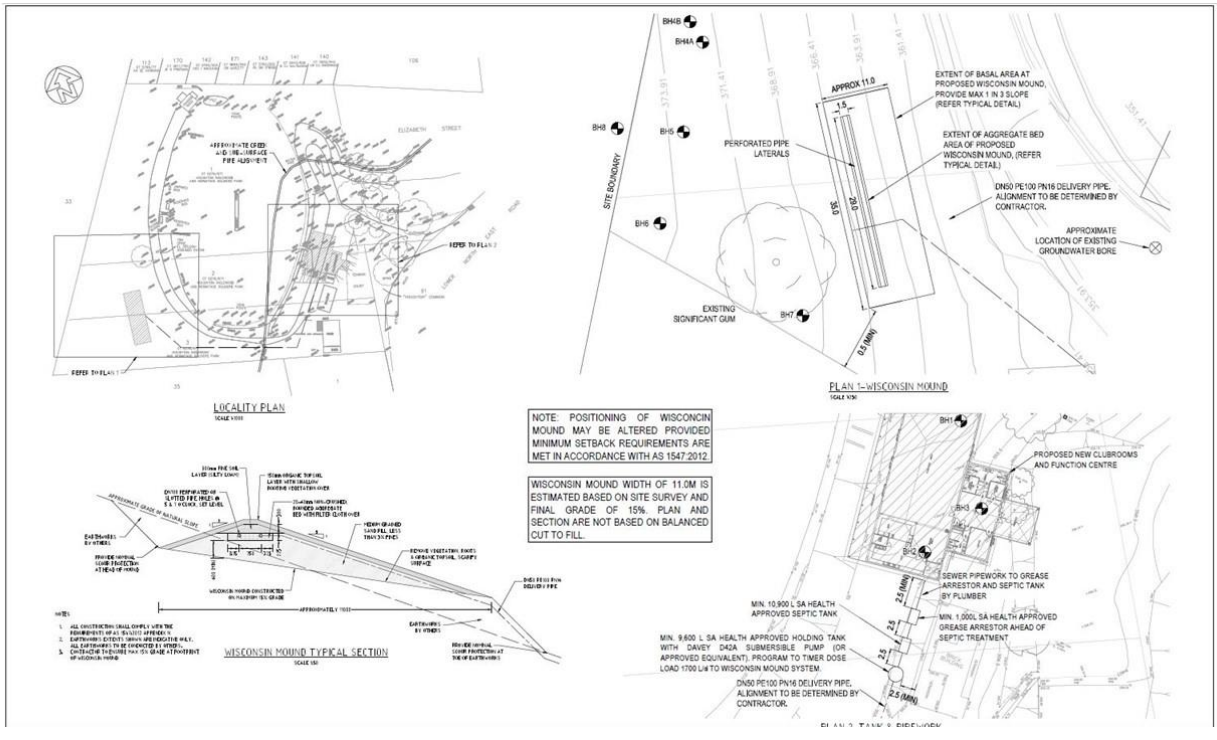
EASTERN ELEVATION





WESTERN ELEVATION





LOCALITY PLAN

PLAN 1- WISCONSIN MOUND

WISCONSIN MOUND TYPICAL SECTION

PLAN 2- TANK & PIPEWORK

SUBMISSION FOR

HOUGHTON, INGLEWOOD & HERMITAGE SOLDIERS MEMORIAL PARK INC.

MULTI-USE COMMUNITY HUB

HI&HSMP INC. | AUGUST 2020 | 20 PROS W





Phillips/Pilkington Architects

Phillips / Pilkington Architects

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North Adelaide 5006
South Australia

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Project Photography by David Sievers
Aerial Cover Photo from NearMap



Plans for new Community Hub?

- We will have junior sports participating in all age groups.
- Weekly AHC Community Development outreach activities
- Increased sport offerings inc. Indoor Bowls, Table tennis etc
- Monthly Fire Group activities
- Goal to engage with every member of our community at lease once / Year

Partnership with Local CWA Branch

- Local CWA Houghton Branch has sold their meeting building and contributed sale funds into the development of the new Houghton Community Hub
- Dedicated CWA space has been designed into the new design that has a multiuse capacity for other community engagement activities conducted by the management committee or Adelaide Hills Council

Multi Use Community Hub and Uni-sex Sports change rooms facility

- Place for community to come together
- Mixed use
- Sport
- Arts
- Reduction in sense of isolation
- Community Hub
- Fire Refuge

Houghton SA CWA

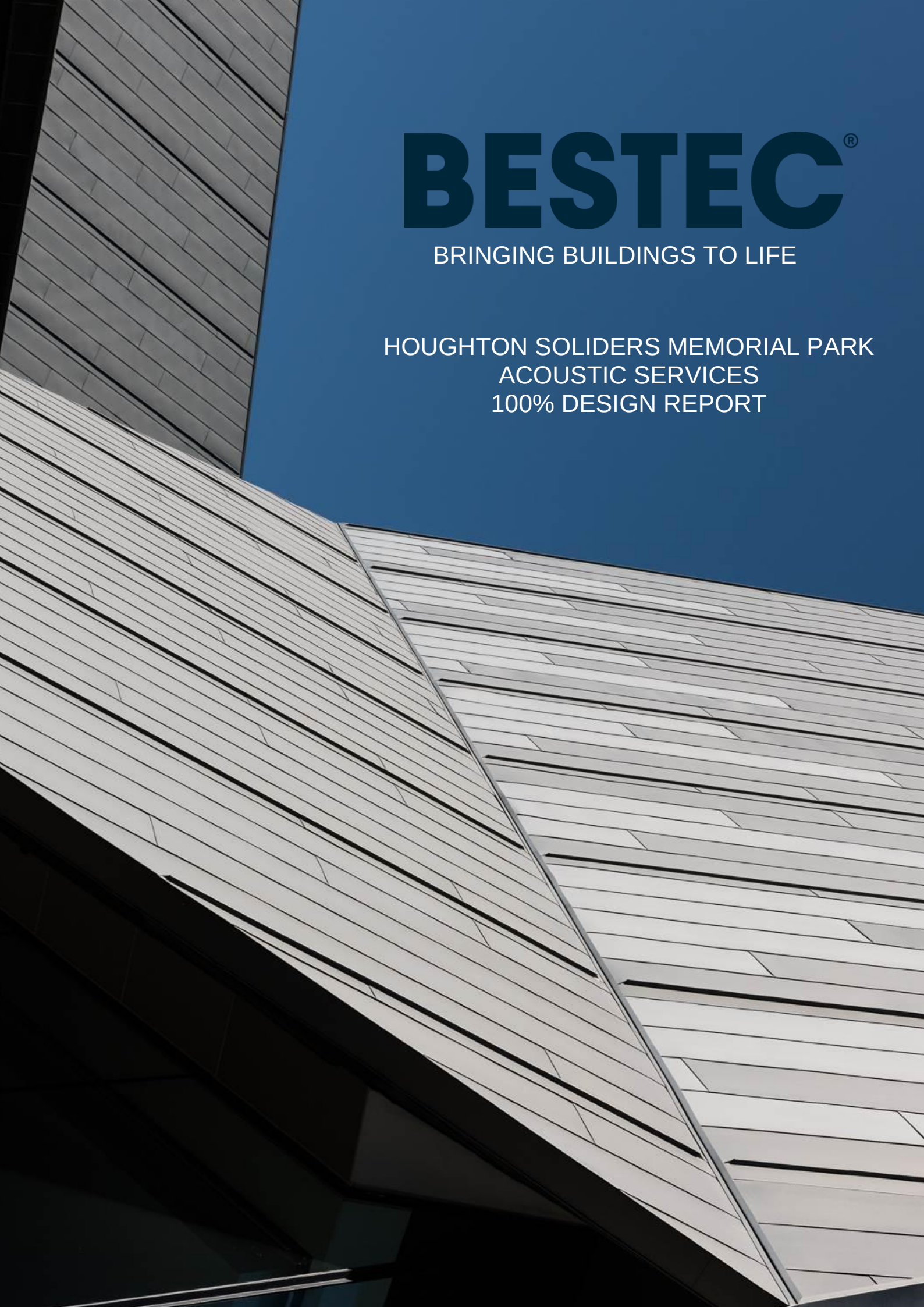
- A part of the community for 70 years
- Friendship and action
  - "Sharing and caring through action"
- 2 meetings per month – both day and night ladies
- Will have access to the multi use community hub

Community Needs

- Very strong community identity
- A need to foster identity and reduce isolation
- An opportunity to encourage involvement for women and our youth
- A place to come together.

Adelaide Hills Council Strategic Plan





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ACOUSTIC SERVICES
100% DESIGN REPORT

BESTEC

ABN 43 909 272 047

Building Engineering
Services Technologies
Consulting Engineers

A. 144 Gawler Place
Adelaide SA 5000

GPO Box 818
Adelaide SA 5000

T. (08) 8232 4442
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E. consulting@bestec.com.au
W. bestec.com.au

ABA: ABA
56785/6/1
14th May 2021

Phillips/Pilkington Architects
165 MacKinnon Parade
NORTH ADELAIDE SA 5006

Attention: Mr M Pilkington

Dear Sir

HOUGHTON SOLIDERS MEMORIAL PARK
90% DESIGN REPORT
ACOUSTIC SERVICES

As requested, we enclose a revised copy of the report on the Acoustic Services for the above project.

We trust that the enclosed report is satisfactory, please contact the undersigned should you require further information.

Yours faithfully
BESTEC PTY LTD



ABEER AHMED
ACOUSTIC SERVICES ENGINEER

REPORT ISSUE REGISTER

REVISION	DATE	REVISION DESCRIPTION
01	14.05.2021	Initial Issue

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Introduction

BESTEC Pty Ltd has been engaged to provide acoustic engineering services for the development of Houghton Soldiers Memorial Park on 1377 Lower North East Road, Houghton SA 5131. This document presents the proposed acoustic design criteria and acoustic design recommendations to achieve the selected design criteria.

Executive Summary

In summary:

- An attended survey was conducted on 16 March 2021 to determine the background noise level.
- A continuous noise survey was conducted at the sites between 16 March 2021 and 17 March 2021. The detailed survey results are presented in Appendix A
- The latest architectural drawings of the proposed development were reviewed,
- Appropriate acoustic design criteria were nominated for the development
- Acoustic design recommendations were provided in order to comply with the selected acoustic design criteria, including:
  - Recommendations for the acoustic separation to each space,
  - Recommendations for the building envelope,
  - Recommendations for room acoustics,
  - Recommendations on environmental acoustics based on current mechanical selections.

Subject to implementations of the design recommendations, the proposed development will be fully compliant with Environmental Protection (Noise) Policy 2007.

References

The following documents have been referenced within the preparation of this report:

[1] Architectural drawings, provided by Phillips/Pilkington Architects, dated 13 May 2021.

[2] AS ISO 140.4–2006 “Acoustics – Measurement of sound insulation in buildings and of building elements. Part 4: Field measurements of airborne sound insulation between rooms”.

[3] Australian/New Zealand Standard 2107:2016 “Acoustics – Recommended design sound levels and reverberation times for building interiors”.

[4] Environment Protection (Noise) Policy 2007.

[5] South Australian Property and Planning Atlas (SAPPA) report generated for 1377 Lower North East Road, Houghton

[6] World Health Organisation (1999) “Guidelines for Community Noise”.

[7] Development Plan Consent – Development Plan Conditions Relating to Development Application No.16/808/473 – Adelaide Hills Council dated 10 October 2019

[8] Mechanical Services Specifications provided by BESTEC dated 14 May 2021.

Proposed Development

Houghton Soldiers Memorial Park is currently in operation and serving the immediate community, with the intention of building a new multi-use community hub at 1377 Lower North East Road.

The new Houghton Soldiers Memorial Park is a two-storey building compromising of:

- The ground level which includes amenities, canteen, change rooms, medical room and a mechanical/services plant room.
- The first floor consists of multiple purpose space, office, kitchen and additional amenities.

SA Planning and Design Code [5] policy applicable to the premise sets the desired outcome for developments, which might the sensitive receivers in adjacent areas as follows.

> *DO 1 Development is located and designed to mitigate adverse effects on or from neighbouring and proximate uses.*

The following requirements (performance outcomes) of the SA Planning and Design Code are relevant to the design and siting of the proposed developments (Section Interface Between Land Uses):

> *PO 1.1 Sensitive receivers are designed and sited to protect residents and occupants from adverse impacts generated by lawfully existing land uses (or lawfully approved land uses) and land uses desired in the zone.*
>
> *PO 1.2 Development adjacent to a site containing a sensitive receiver (or lawfully approved sensitive receiver) or primarily intended to accommodate sensitive receivers is designed to minimise adverse impacts*
>
> *PO 4.1 Development that emits noise (other than music) does not unreasonably impact the amenity of sensitive receivers (or lawfully approved) sensitive receivers.*

A non-residential development is deemed to satisfy the above requirement if the noise emissions that affect the noise sensitive receivers achieves the relevant Environment Protection (Noise) Policy criteria (DTS/DPF 4.1).

> *PO 4.2 Areas for the on-site manoeuvring of service and delivery vehicles, plant and equipment, outdoor work spaces (and the like) are designed and sited to not unreasonably impact the amenity of adjacent sensitive receivers (or lawfully approved sensitive receivers) and zones primarily intended to accommodate sensitive receivers due to noise and vibration by adopting techniques including:*

(a) locating openings of buildings and associated services away from the interface with the adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers

(b) when sited outdoors, locating such areas as far as practicable from adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers

(c) housing plant and equipment within an enclosed structure or acoustic enclosure

(d) providing a suitable acoustic barrier between the plant and / or equipment and the adjacent sensitive receiver boundary or zone.

PO 4.3 Fixed plant and equipment in the form of pumps and/or filtration systems for a swimming pool or spa are positioned and/or housed to not cause unreasonable noise nuisance to adjacent sensitive receivers (or lawfully approved sensitive receivers).

PO 4.5 Outdoor areas associated with licensed premises (such as beer gardens or dining areas) are designed and/or sited to not cause unreasonable noise impact on existing adjacent sensitive receivers (or lawfully approved sensitive receivers).

PO 4.6 Development incorporating music achieves suitable acoustic amenity when measured at the boundary of an adjacent sensitive receiver (or lawfully approved sensitive receiver) or zone primarily intended to accommodate sensitive receivers.

Compliance with the above PO is achieved if the pump and/or filtration system is enclosed in a solid acoustic enclosure located at least 5m from the nearest habitable room located on an adjoining allotment or is located at least 12m from the nearest habitable room located on an adjoining allotment.

Existing Acoustic Environment

An unattended noise survey was conducted at the marked “L1” position shown in Figure 1 between 16 March 2021 and 17 March 2021 in order to establish the existing ambient and background noise levels in the vicinity of the proposed development. The survey was conducted using the automatic noise loggers SVAN 953, SN8951(due for calibration 16th April 2021) was installed with the microphone 1.5m above ground level. The loggers were set to continuously measure and average A-weighted equivalent continuous noise levels (LAeq,15min), A-weighted maximum noise levels (LAmax) and statistical noise descriptors (LA01, LA10, LA90) using 1/3-octave bands (31.5Hz – 10,000Hz) over 15-minute intervals using Fast time weighting. The calibration of the units was checked before and after the survey and no drift was detected. Copies of the calibration certificates are available on request. The measured average noise levels are summarised in below in Table 1 with the detailed survey results presented in Appendix A

Day	Average Day Time (7:00 to 22:00)				Average Night Time (22:00 to 07:00)			
	L_{Aeq}	L_{Amax}	L_{A10}	L_{A90}	L_{Aeq}	L_{Amax}	L_{A10}	L_{A90}
16/03/2021	52	72	55	39	36	54	35	27

Table 1 : Summary of existing acoustic environment



Figure 1: Location of measurements for survey

Attended Noise Survey

An attended noise survey was conducted between 11:00 and 12:00 on 16 March 2021 and between 17:25 and 17:45 on 17 March 2021, in order to determine the existing noise environment in the vicinity of the development site. Attended measurements were undertaken using a Brüel and Kjær Hand-held Analyser Type 2270 Sound Level Meter (Serial Number: 3006966, last calibrated on 20 October 2020, due for calibration 20 October 2021), with an approved windshield fitted at all times. The calibration of the analyser was spot checked before and after the measurements and no drift was detected. Figure 1 shows the attended survey location with respect to the proposed development site with the survey results presented within Table 2 below.

Location	Time	L_{Aeq}, dB(A)	L_{Amax}, dB(A)	L_{A10}, dB(A)	L_{A90}, dB(A)	Observations
L1	16 March 2021, 11:38	45	70	48	35	Empty parking lot with no activity at the venue. Location adjacent to the nearest sensitive receiver, residents at Lower northeast road.
L2	16 March 2021, 11:58	39	60	41	32	Measurement taken at the gate of oval, adjacent to residents on Amberdale road with no activity at the venue.
L1	17 March 2021, 17:25	49	71	52	42	Measurement taken before game with a crowded parking lot and high pedestrian activity. Pedestrian noise (people talking, laughing etc), noise resulting from vehicles in the parking lot.

Table 2: Result summary of the attended noise survey

Design Criteria

Environmental Noise

Continuous Noise

This criterion will be relevant to noise emitted from the proposed development resulting from operation of engineering services, operational noise from the commercial component, car park etc.

The Environment Protection (Noise) Policy 2007 (EPP 2007) [4] sets out the maximum allowable noise levels in terms of A-weighted Equivalent Continuous Noise Levels over 15-minute intervals (LAeq,15min) based on the time of day and land use, applicable at the most noise sensitive premises. Based on the site location and the land zoning stipulated in the South Australian Property and Planning Atlas[5], the development site is located within the zone designated as “T” (Township) zone which consists of commercial and residential development, with the immediate surrounding developments located within the same zone. Based on the indicative noise levels for different land categories apply. The indicative noise factors based on time of day for the Residential and Commercial land zoning as stipulated in Table 2 of the EPP 2007 [4] are as follows

- Residential zone: -
  - Day-time (07:00 to 20:00): 52 dB(A)
  - Night-time (20:00 to 07:00): 45 dB(A)
- Commercial zone: -
  - Day-time (07:00 to 20:00): 62 dB(A)
  - Night-time (20:00 to 07:00): 55 dB(A)

In order to assess the noise impact of the proposed development to the adjacent areas, and taking into account the fact that the proposed development site and the adjacent residential developments fall within different land use categories, the EPP 2007 states that the indicative noise level (for purposes of environmental noise impact) is the average of the indicative noise factors, rounded to the nearest whole number. Based on condition 9 of Development Plan Consent, the opening hours are limited to:

- Monday to Thursday – 11:00AM to 10:00PM
- Friday to Saturday – 10:00AM to 12:00AM
- Sunday – 09:00AM to 03:00PM

Therefore, the indicative noise levels for assessment of the noise impact from the development to the adjacent areas are as follows:

- Day-time (07:00 to 20:00): 57dB(A)
- Night-time (20:00 to 07:00): 50dB(A)

These criteria were also provided in Development Plan Consent under condition 11 [7].

Note that if noise emitted by the proposed development contains any tones, modulation, impulsiveness or low frequency characteristics, the continuous noise level of the noise source must be adjusted as follows:

- Noise containing 1 characteristic - 5 dB(A) penalty added to source continuous noise level;
- Noise containing 2 characteristics - 8 dB(A) penalty added to source continuous noise level;
- Noise containing 3 or 4 characteristics - 10 dB(A) penalty added to source continuous noise level

Intermittent Noise

This criterion will be relevant to noise emitted from the proposed development resulting from short term noise events – rubbish collection, car door slams, etc.

The criteria provided in the above sections relate to continuous noise sources, and do not cater for intermittent noise events, such as slamming of car doors, car horns sounding, etc. We recommend the use of the World Health Organisation (WHO) Guidelines [6], which recommends a maximum A-weighted noise level LAmax, of 45dBA in a bedroom, which is equivalent to approximately 55dBA to 60dBA at the façade of the residential building with windows partially open.

In addition, the EPP 2007 provides assessment criterion of LAmax of 60dBA for night-time for the proposed development (for application for development authorisation), which agrees with the criterion stipulated by the WHO [6].

We note, however, that the WHO internal criteria of LAmax 45dBA as referenced in Adelaide City Council Development Plan Principle 95, is widely accepted as overly conservative. A report published in May 1999 by the NSW EPA entitled “Environmental Criteria for Road Traffic Noise” has compared the results of a number of studies on sleep disturbance criteria and concluded the following:

- Maximum internal noise levels below 50 – 55dBA are unlikely to cause awakening reactions;
- One or two noise events per night with maximum internal noise levels of 65 – 70dBA are not likely to affect health and wellbeing significantly.

We also note that the above approach has been used by the NSW Environment Protection Agency and the Victorian Civil and Administrative Tribunal. Therefore, we recommend criterion for intermittent noise of maximum A-weighted noise level LAmax, of 50dBA in a bedroom within the nearest noise sensitive development.

Music Noise

The multifunction space may be used to accommodate functions with pre-recorded music such convention events, birthday parties etc. Therefore, an assessment against the EPA Guidelines for Music Noise [4] and SA Planning and Design Code [5]requirements is warranted.

EPA provides guidelines for assessment of music emissions from entertainment venues [4], which is used for acoustic assessment for development approval purposes as well as for acoustic design of residential developments in the vicinity of existing entertainment venues. The criterion is set as follows:

> *“The music noise ($L_{10,15min}$) from an entertainment venue when assessed externally at the nearest existing noise sensitive location should be:*
>
> - *less than 8 dB above the level of background noise ($L_{90,15min}$) in any octave band of the sound spectrum”*

In addition, SA Planning and Design Code Performance Outcome 4.6 (Refer Proposed Development) which stipulates Designated Performance Feature 4.6 as follows

> *“Development incorporating music includes noise attenuation measures that will achieve the following noise levels:*
>
> - *less than 8 dB above the level of background noise ($L_{90,15min}$) in any octave band of the sound spectrum”*

Please note: The background noise will be recorded through an unattended continuous noise survey which be used to calculate the relevant music noise criteria.

Based on the above EPA SA Guideline and Principle of Development Control 10, to control music noise emissions from the proposed entertainment areas (Multi-purpose Function Room), we derived the music noise criteria based on the background noise levels (L90) measured during the attended noise survey (refer Table 1 above), also given below. Therefore, the calculated music noise criteria relevant to the neighbouring residential noise sensitive receivers will be as detailed below.

	Octave band sound pressure level dB re 20µPa							
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**	**8k**
Background noise level $L_{90,\ 15min}$	39	39	32	29	28	27	23	19
Maximum allowable exceedance	8	8	8	8	8	8	8	8
Maximum allowable music noise level, $L_{10,15min}$ at the nearest noise sensitive boundary	47	47	40	37	36	35	31	27

Table 3: Criteria for music noise at the nearest sensitive receiver

Building Acoustics

The level of background and transient/intermittent noise, the speech privacy rating and the intelligibility of speech define the quality of the acoustics within a building. The recommended criteria for each space is shown in Table 4 below. Refer to each individual section below for an interpretation of these criteria. Each space identified below is in accordance with the floor plans provided by Phillips/ Pilkington Architects [1].

Type of occupancy/activity	Background Noise dBA	Reverberation Time Secs	Speech Privacy D_w
Amenities	50 – 55	N/A	40 – 45
Multipurpose Function Space	40 – 45	0.6 – 0.8	35 – 40
Office	35 – 40	0.4 – 0.6	35 – 40
Change rooms	< 50	N/A	35 – 40
Corridors	< 50	Minimise as practical	N/A
Stores	N/A	N/A	N/A
Medical Room	40 – 45	0.6 – 0.8	35 – 40
Canteen	45 – 50	Minimise as practical	35 – 40
Kitchen	45 – 50	Minimise as practical	40 – 45
Foyer	45 – 50	N/A	N/A
C.W.A.	40 – 45	0.6 – 0.8	40 – 45
Mechanical / Services Plant	N/A	N/A	45 – 50

Table 4: Recommended Acoustic Design Criteria**.**

Room Acoustics

AS 2107-2016 [1] sets out the design criteria for reverberation times within occupied spaces. The reverberation time defines the time taken for sound to decay within a space and thus the degree of intelligibility of both unassisted speech and sound reinforcement systems. The criterion for a given space depends on the volume of the space, with Table 5 outlining the subjective impression for spaces with varying volume. Criteria considered appropriate for the various spaces involved with the project scope are listed in Table 4.

Reverberation Time (sec)			Subjective Rating
Small (100m3)	**Medium (1,000 m3)**	**Large (10,000m3)**	
< 0.3	0.3 - 0.5	0.6 - 0.8	Dead

Reverberation Time (sec)			Subjective Rating
Small (100m3)	Medium (1,000 m3)	Large (10,000m3)	
0.3 - 0.5	0.5 - 0.7	0.8 - 1.0	Medium dead
0.5 - 0.7	0.7 - 1.0	1.0 - 1.5	Average
0.7 - 1.0	1.0 - 1.5	1.5 - 2.5	Medium live
1.0 - 2.0	1.5 - 2.5	2.5 - 4.5	Live

Table 5: Subjective response to various reverberation times and room volumes

Speech Privacy

For enclosed spaces, the noise from activities in the adjacent rooms transmitted through walls, floors, ceilings etc. increases the background noise level similarly to the noise intrusion from any outside sources. The level of noise transmitted from the adjacent rooms and the level of sound insulation/speech privacy is controlled by the design of building elements and providing adequate level of sound attenuation through specifying appropriate construction types for walls, floors, doors, ceilings etc.

There are no Australian or International Standards giving recommendations for sound insulation ratings for adjoining spaces. Instead, recommendations are based on experience from previous projects, with these recommendations reflecting user expectations. The privacy rating is dependent on the sound absorption and background noise level in the adjoining space as well as the area and acoustic performance of the dividing partition.

The proposed criteria for speech privacy between the spaces separated by partitions (extending either to the ceiling level or to the roof structure above are presented in terms of Weighted Sound Level Difference (DW) as defined by AS ISO 140.4–2006 [2], which is related to the sound level difference between two spaces and are detailed in Table 4. The criteria are based on our experience in the acoustic design of similar facilities. Table 6 details the subjective response of individuals to the proposed privacy ratings for interpretation of the recommendations.

D_W Rating	Subjective Rating
50 - 55	Confidential privacy
45 - 50	Very good privacy. Speech inaudible unless raised
40 - 45	Good privacy. Speech audible but unintelligible
35 - 40	Normal privacy. Neighbouring conversations are audible and may be understood
< 35	Privacy not required

Table 6: Subjective perceptions for various privacy ratings

Background Noise

AS 2107-2016 [2] sets out the design criteria for steady state noise such as from air-conditioning systems and road traffic depending on the type/use of the different rooms. Recommendations for each space are provided in Table 3 in terms of averaged A-weighted sound pressure level (LAeq).Table 7 details the subjective response of individuals to the proposed sound levels for interpretation of the recommendations.

Average Sound Pressure Levels (dBA)	Subjective Rating
35 - 40	Audible but unobtrusive
40 - 45	Moderate but unobtrusive
45 - 50	Unobtrusive with low levels of surrounding activities
50 - 55	Unobtrusive with high levels of surrounding activities

Table 7: Subjective ratings for various average sound pressure levels.

Assessment and Recommendations

Building Envelope

Based on the architectural drawings[1] review and the results of the function noise assessment, the following recommendations for construction of the building envelope are provided.

- Solid façade – the following constructions are acceptable from acoustic point of view:
  - Composite light weight façade constructed of 9mm fibre cement to the external side of minimum 64mm steel studs and 1 layer of 13mm plasterboard to the internal side with cavity infill as specified above; or
  - 150mm precast concrete; or
  - 150mm aerated autoclaved concrete block with 1 layer of 13mm plasterboard on 25mm furring channels and cavity infill of 25mm, 11kg/m3 glasswool or equivalent; or
  - 75mm Hebel Powerpanel to the external side of minimum 64mm steel studs and 1 layer of 13mm plasterboard to the internal side and cavity infill as specified.
- Roof – conventional roof cladding over minimum R2.0 reflective thermal insulation blanket and 1 layer of 9mm fibre cement to the underside of the roof.
- Glazing – the following constructions are acceptable from acoustic point of view.
  - Multipurpose function space – 10.38mm laminated glass
  - Other Spaces – 6.38mm laminated glass.

The assessment is based on the understanding that music will be played in the multipurpose function space only. As stipulated in condition 10 of development consent [7], outdoor entertainment would be limited to sporting events only.

Any operable glazing should be fitted with appropriate compressible acoustic seals (Raven or Schlegel ranges). Please note that the above glazing construction is sufficient from acoustic point of view, however it may be subject to change to satisfy structural and thermal requirements.

Function Noise

The noise impact to the nearest sensitive receivers associated with functions against the EPA guidelines [4] has been assessed, the recommendations and comments regarding music noise during a function and patron noise are outlined below.

Music Noise

The function areas will be used for parties, weddings, corporate events etc, which may include pre-recorded music. Based on BESTEC's experience with similar projects, the following sound pressure levels for the music noise assessment have been used.

	Octave band sound pressure level dB re 20µPa								Overall level, dBA
	63	125	250	500	1k	2k	4k	8k	
Expected sound pressure levels for Pre-recorded music within the function space	86	91	91	91	85	79	77	72	91

The assessment revealed that the music noise at the nearest noise sensitive receivers will be within the day and night time criterion. Therefore, we recommend the sound pressure level from the sound system (we assumed that the sound system will comprise two speakers) be limited to not more than 90dBA at 1m from combined speakers. We recommend before each function; the Operator or Duty Manager duty measures the sound pressure level from both speakers at 1m and ensures it does not exceed 90dBA during the function in accordance with the requirements set in the EPA Guidelines for Music Noise.

Please note that when the music is to be played in the multi-function space, ensure that all the operable glazing is closed during the function.

Patron Noise

We have assessed noise from a typical full capacity event of 180 people at the function space of the proposed development.

- We assumed 90 people on the terrace, 46 of them talking as follow:

- 12 Male and 12 Females patrons talking at a raised voice level:
- 11 Male and 11 Females patrons talking at a normal voice level

The assessed noise impact from patrons to the nearest residential receiver will be within day and night criterion set by EPA for a development located in a mixed-use vicinity.(Refer Design Criteria)

Sound Insulation/Speech Privacy

Recommendations and comments to achieve the nominated speech privacy criterion (refer Table 4) for the acoustic separation between spaces are outlined below. Please refer to Appendix for partition mark ups.

Partitions

- Normal Privacy, D_W 35-40 – 1 layer of 13mm plasterboard to each side of 92mm steel studs extending to ceiling level with ceiling overlay and cavity infill as specified. Please note that the ceiling overlay shall extend minimum 1,200mm each side of the partition. For partition detail, please refer to Detail 1.
- Good Privacy, D_W 40-45 – 1 layer of 13mm plasterboard to one side of 92mm steel studs and 2 layers of 13mm plasterboard to the other side with 1 layer of plasterboard extending to the structure above and cavity infill as specified. For partition detail, please refer to Detail 2
- Mechanical/ Services Plant, D_W 45-50 – We note that the following partitions between services plant and visitor change room are acceptable from an acoustic point of view based on the current mechanical selections.
  - Composite light weight façade constructed of 9mm fibre cement to the external side of minimum 64mm steel studs and 1 layer of 13mm plasterboard to the internal side with cavity infill as specified above;
  - 150mm precast concrete;
  - 150mm aerated autoclaved concrete block with 1 layer of 13mm plasterboard on 25mm furring channels and cavity infill of 25mm, 11kg/m3 glasswool or equivalent; or
  - 75mm Hebel Powerpanel to the external side of minimum 64mm steel studs and 1 layer of 13mm plasterboard to the internal side and cavity infill as specified.
- Operable wall separating office and C.W.A (highlighted in blue) – We recommend operable wall with minimum Weighted Sound Reduction Index of R_w 45 be used to ensure that the speech privacy criterion is achieved. An acoustic baffle consisting of 1 layer of 13mm plasterboard to both sides of 92mm steel studs, with cavity infill as specified above will be required above the operable wall. For construction detail, please refer to Detail 3**.**

Door

- Normal Privacy, D_W 35-40 – 40 mm thick solid core doors or hinged aluminium framed glass doors with 10.38mm laminated glass.
- Good Privacy, D_W 40-45 – 45 mm thick solid core doors or hinged aluminium framed doors with 10.38mm laminated glass. We recommend medium duty acoustic seals (Raven RP8, RP10 or equivalent). We note that the glass door would not strictly achieve Good speech privacy as the Weighted Sound Reduction of 10.38mm laminated glass is R_W 35, however, it would be acceptable between the sensitive spaces and adjacent trafficable areas.

Internal Glazing

- Normal Privacy, D_W 35-40 – 10.38mm laminated glass or as required structurally. We recommend ceiling overlay, as specified above, be installed, extending 1200 mm each side of the partition.
- Good Privacy, D_W 40-45 – We recommend a single glass pane minimum 10.38 mm laminated glass be used between rooms with good speech privacy and adjacent trafficable areas. An acoustic baffle consisting of 1 layer of 13 mm plasterboard will be required above the ceiling extending to the structure above with all interfaces and junction blocked off and sealed.

General Recommendations

Acoustic Sealants

We note that for the acoustic integrity of building elements to be maintained, all gaps and interfaces along the junctions and joints of linings must be sealed with an appropriate acoustic grade sealant. Penetrations for mechanical or electrical services must be properly caulked and sealed around the ductwork and cabling to ensure the intended acoustic rating of the partition is retained.

Appropriate acoustic caulking products include:

- Bostik Firemastic.
- Bostik Seal-n-flex 2637.
- Pyropanel Multiflex.
- Boral Fyreflex.
- Dow-Corning 790 Silicone.
- Dow-Corning 795 Silicone.
- Sika Sikaflex-11 FC.
- Fosroc Flamex 3.

Cavity Infill

Where a cavity infill is recommended, equivalent alternatives are:

- Fibreglass – 50mm, 12kg/m^3.
- Rockwool – 50mm, 38kg/m^3.
- Polyester – 900gsm.

Ceiling Overlay

Where a ceiling overlay is recommended, equivalent alternatives are:

- Glasswool – 100mm, 12kg/m^3.
- Rockwool – 100mm, 38kg/m^3.
- Polyester – 100mm, 32kg/m^3.

Where higher durability and/or water resistance is required, 6mm compressed fibre cement sheeting could be used in lieu of the 13mm fire-rated plasterboard and 9mm compressed fibre cement in-lieu of 16mm fire-rated plasterboard.

Room Acoustics

The preliminary architectural drawings were reviewed and the room acoustics conditions assessed based on the following assumed architectural finishes:

- Floor – The following floor finishes have been assumed
  - short pile carpet on concrete in the multi-function space, offices and C.W.A
  - concrete flooring in the medical room
- Walls – Plasterboard
- Ceiling – Plasterboard

We making the following recommendations for specific rooms.

- Multipurpose function space – Based on the assessment, it is recommended 125m^2 of ceiling treatment be applied evenly across the space (NRC 0.80 or above)
- Office and C.W.A – Based on the assessment, it is recommended that 25 m^2 of acoustic treatment is applied to the ceiling. (NRC 0.80 or above)
- Medical room – Based on the assessment, it is recommended that 10 m^2 of acoustic treatment is applied to the ceiling. (NRC 0.80 or above)

Where sufficient area is not available for ceiling treatment, acoustic treatment can be applied evenly across the walls in lieu.

Please note, we are in position to make additional recommendations based on updated architectural drawings and room schedules.

Noise Associated with Mechanical Services

Specifications and Assumptions

The assessment on environmental noise to resident receivers and background noise inside the premise was based on the preliminary mechanical services selections and noise data presented in mechanical services specifications [8] as summarised below.

- Noise emissions anticipated from the condensers presented in Table 8;

Unit Designation	Mode	Octave Band Centre Frequencies Sound Pressure Level, dB re 20μPa.								Overall SPL, dB(A) @ 1m
		63	125	250	500	1K	2K	4K	8K	
ACC-1	Cooling	61	63	60	58	55	50	47	45	60

Table 8: Condenser - Sound Pressure Levels (dB re 20μPa) used in the assessment

- Noise emissions anticipated from Evaporative coolers (EVCs) as presented within Table 9;

Evaporative Cooler Designation	Mode	Octave Band Centre Frequencies Sound Power Level, dB re 1 pW.								Overall SPL, dB(A) @1.5m
		63	125	250	500	1K	2K	4K	8K	
EVC-1	Inlet	75	73	72	72	70	70	65	59	-
	Outlet	79	76	75	73	71	71	66	58	-

Table 9: Evaporative cooler - Sound Power Levels dB re 20□Pa used in the assessment

- Noise emissions anticipated from the exhaust fans presented in Table 10;

Fan Designation	Mode	Octave Band Centre Frequencies Sound Power Level, dB re 1 pW.								Overall SWL
		63	125	250	500	1K	2K	4K	8K	
KEF-1	Inlet	91	92	87	77	75	73	73	73	95
TEF R-1	Inlet	75	69	63	59	57	56	56	56	76
TEF R-2	Inlet	74	73	69	60	60	55	55	55	78
OAF 1-1 to 1-8	Outlet	54	42	52	43	34	11	21	20	57

Table 10 : Exhaust fans with its indictive sound data

- Air Handling Unit as presented within Table 11:

Unit Designation	Mode	Octave Band Centre Frequencies Sound Power Level, dB re 1 pW.								Overall SWL
		63	125	250	500	1K	2K	4K	8K	
AHU-1	Inlet	70	67	81	76	70	70	67	69	83
	Outlet	70	70	81	77	80	77	73	72	86

Table 11: Air Handling unit with its indictive sound data

Assessment and Recommendation

Airborne Noise

- EVCs – the results of our assessment of the noise emissions associated with the EVC's operation are summarised in Table 12 below.

Unit Designation	Supply Air	Return Air	Casing Radiated
EVC 01	(1)	(1)	(1)

Table 12: Evaporative cooler assessment

- Packaged units – the results of our assessment of the noise emissions associated with the rooftop packaged unit's operation are summarised in Table 13 below.

Unit Designation	Supply Air	Return Air	Casing Radiated
AHU-1	(1)	(1)	(1)

Table 13: Packaged unit assessment

- Fans – the results of our assessment of the noise emissions associated with the rooftop packaged unit's operation are summarised in Table 13 below.

Unit Designation	Supply Air	Return Air	Casing Radiated
KEF-1	(1)	(3)	(1)
TEF R-1	(1)	(1)	(1)
TEF R-2	(1)	(1)	(1)
OAFs	(2)	(2)	(1)

Table 14: Fan assessment

(1) No further treatment required

(2) We recommend that a minimum 1m flexible duct.

(3) Attenuator required, refer to Table 15.

Unit	Description	Air Vol. (m^3/s)	Max. Press. Drop (Pa)	Dimensions W x H x L (mm)	Minimum Static Insertion Loss (dB re 20μPa) Frequency (Hz)							
					63	125	250	500	1k	2k	4k	8k
KEF-1	INLET	2.5	53	Q-Seal 2D Pod	6	8	11	21	27	24	19	15

Table 15: Attenuator Specifications

Vibration and Structure Borne Noise Control

To control vibration and structure borne noise, appropriate vibration isolators should be installed for the condensers and Fans. Based on the operational speed, we make the following recommendations:

- Air conditioning condensers should be installed on double deflection neoprene rubber mounts with minimum 7mm static deflection.
- Air Handling unit and EVC unit should be installed on double deflection neoprene rubber mounts with minimum 25mm static deflection.
- Fans should be installed on neoprene spring hangers with minimum static deflection of 25mm with flexible connection on both sides.

Services Penetration Treatment

For services penetrations such as ductwork, pipes and cables penetrate acoustically rated walls, care should be taken to ensure all gaps and interfaces are acoustically treated as follows:

- Sheet metal ducts, pipes and cables:
  - Gaps up to 5mm – continuously caulk with flexible acoustic sealant as specified below.
  - Gaps between 5mm and 30mm – pack densely with 50mm, 48kg/m^3 glasswool, apply backing rod and caulk with flexible acoustic sealant (as specified below).
  - Gaps larger than 30mm – pack densely with 50mm, 48kg/m^3 glasswool, apply patches to each side of the partition ensuring about 5mm gap between the edge of the patch and the penetrating duct. Seal the penetration gap with acoustic sealant, see Figure 2 below. The patches should be constructed of the same material and number of layers as the penetrated partition. Ensure minimum 100mm overlap between the patches and the partition being patched. Seal the perimeter of the patches.

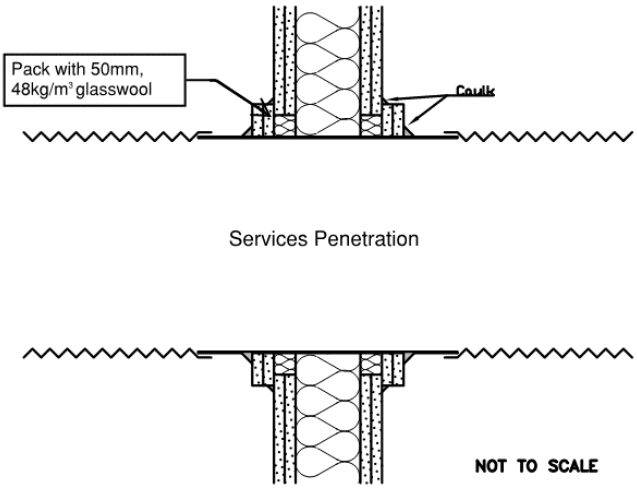


Figure 2: Detail drawings for services penetrations treatments with gaps larger than 30mm

We understand that mechanical selections may change as the project progress and note that we are in position to make additional recommendations based on the updated architectural drawings and updated mechanical selections.

Environmental Noise

Plant Noise to adjacent rooms

An additional assessment on noise intrusion from plant room to adjacent areas notes that with the Plant room partition recommended (Refer Partitions), the noise levels within the closest rooms will meet the background criterion (Refer Table 4).

Mechanical Services noise to the resident receivers

The noise level at the nearest noise sensitive receiver, residences on Lower North East Road assuming all plant units and fans are operating simultaneously was calculated to be 45dBA. This is within the required

criterion stipulated by EPA and development plant consent. We note that no additional treatment is required for mechanical units.

Noise Associated with Rubbish Collection

Currently no rubbish collection area is indicated on the concept architectural drawings and we assumed that the rubbish will be collected from the entrance at Lower North East Road at the front. The waste collection vehicles will access and exit the refuse area via Lower North East Road. Based on this, we assessed the noise impact on the surrounding noise sensitive receivers resulting from noise emissions from typical rubbish collection vehicle activities.

We calculated the A-weighted Equivalent Continuous Noise Level over a typical 15-minute interval (LAeq,15min) assuming the following activity durations and measured noise levels from similar activities on a previous project:

- Rubbish collection vehicle accessing the waste loading zone (including reverse alarm) – 30 seconds, 70dBA at 5m.
- Rubbish collection – 10 minutes, 65dBA at 5m.
- Rubbish collection vehicle departing – 30 seconds, 73dBA at 5m.
- The balance of a 15-minute interval – 4 minutes, 54dBA (ambient noise level).

The calculated A-weighted Equivalent Continuous Noise Level over a typical 15-minute interval (LAeq, 15min) resulting from loading / unloading activities, which we used in the assessment was 65dBA at 5m.

Based on the above, we calculated incident noise levels to be within the 49dB limit suggested by the EPA at the façade of the nearest noise sensitive receiver (residents on Lower North East Road). Therefore, we note that this achieves the selected criteria for environmental noise (for criteria refer above).

Noise Associated with Delivery Trucks

We note that there would be a loading bay located on the ground floor on the south east end of the building and calculated the A-weighted Equivalent Continuous Noise Level over a typical 15-minute interval (LAeq,15min) assuming the following activity durations and measured noise levels from similar activities on a previous project:

- Delivery vehicle accessing the loading dock (including reverse alarm) – 30 seconds, 70dBA at 5m.
- Loading/unloading activities including noise from refrigeration unit on the delivery vehicle – 10 minutes, 76dBA at 5m.
- Delivery vehicle departing – 30 seconds, 73dBA at 5m.
- The balance of a 15-minute interval – 4 minutes, 54dBA (ambient noise level).

The calculated A-weighted Equivalent Continuous Noise Level over a typical 15-minute interval (LAeq, 15min) resulting from delivery vehicle activities, which we used in the assessment was 74dBA at 5m.

Based on the above we predicted incident noise levels of 52 dBA at the nearest residential noise sensitive receiver (residents on Lower North East Road). We note that the noise emissions due to the delivery vehicle activities achieves the day-time environmental noise criteria and would not affect the amenity of the adjacent residential area. However, it is recommended that delivery be restricted to the EPA stipulated day time only (i.e., after 7:00 am and before 10:00pm) Monday to Friday and after 9:00 am on Saturday and Sunday (if applicable).

Noise Associated with Car Park

We have performed a noise impact assessment to the nearest residential receiver of the development associated with the use of the adjacent carpark, considering the following:

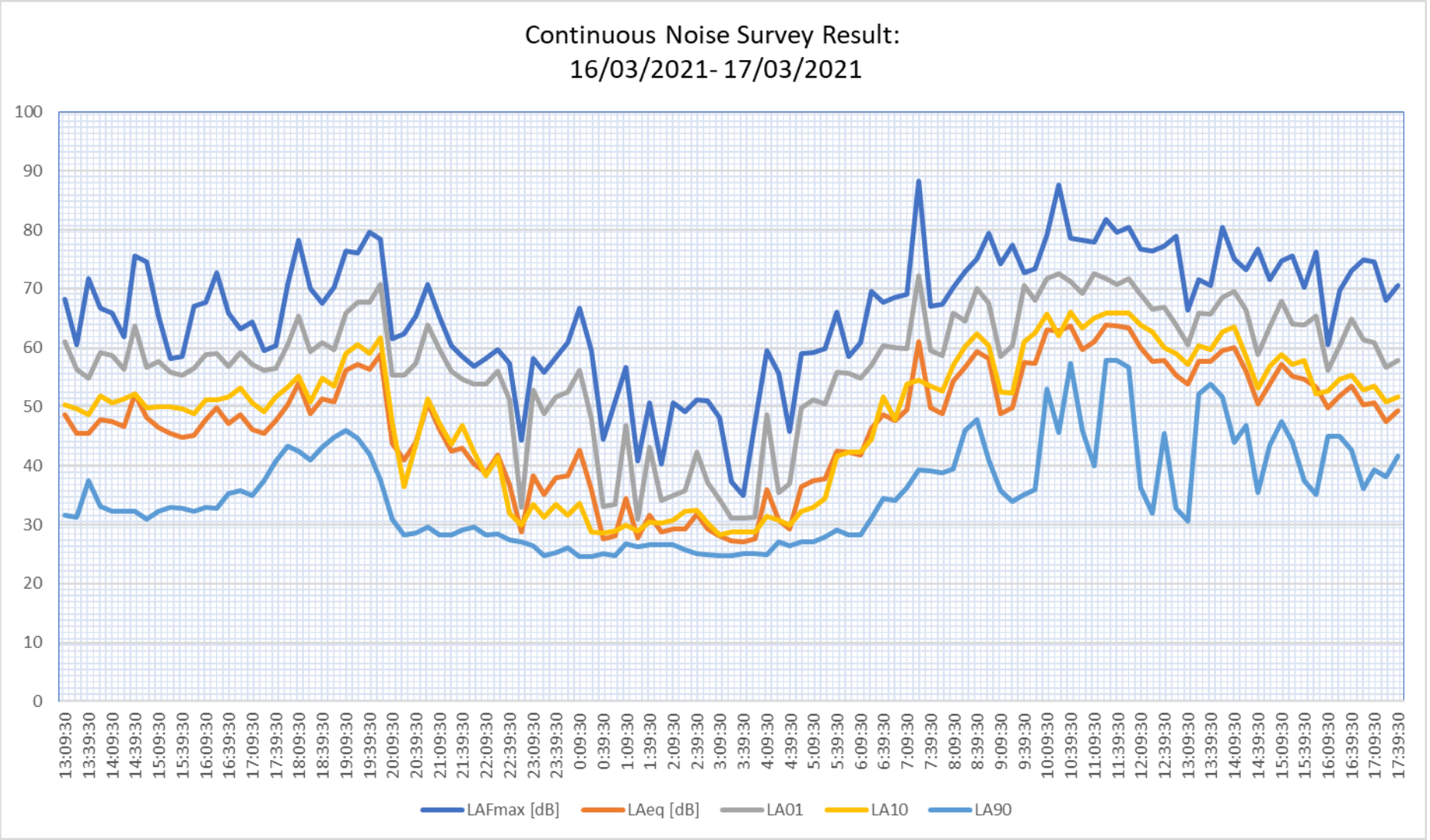
- Vehicle movement through car parking spaces
- Vehicle Ignition
- Vehicle door slamming
- Vehicle idle and take off from car parking and drop off zones

A time weighted averaged approach was implemented, based on the above breakdown of noise generating activities.

To calculate the noise levels from the carpark operation over a typical 15 minutes period, we assumed 20 vehicles either entering or exiting the carpark during the period. We note that the impact noise level at the nearest receiver is 43dBA which readily meets the day and night criteria for the development.

Appendix A

Environmental survey result


Continuous Noise Survey Result:
16/03/2021- 17/03/2021
100
90
80
70
60
50
40
30
20
10
0
13:09:30
13:39:30
14:09:30
14:39:30
15:09:30
15:39:30
16:09:30
16:39:30
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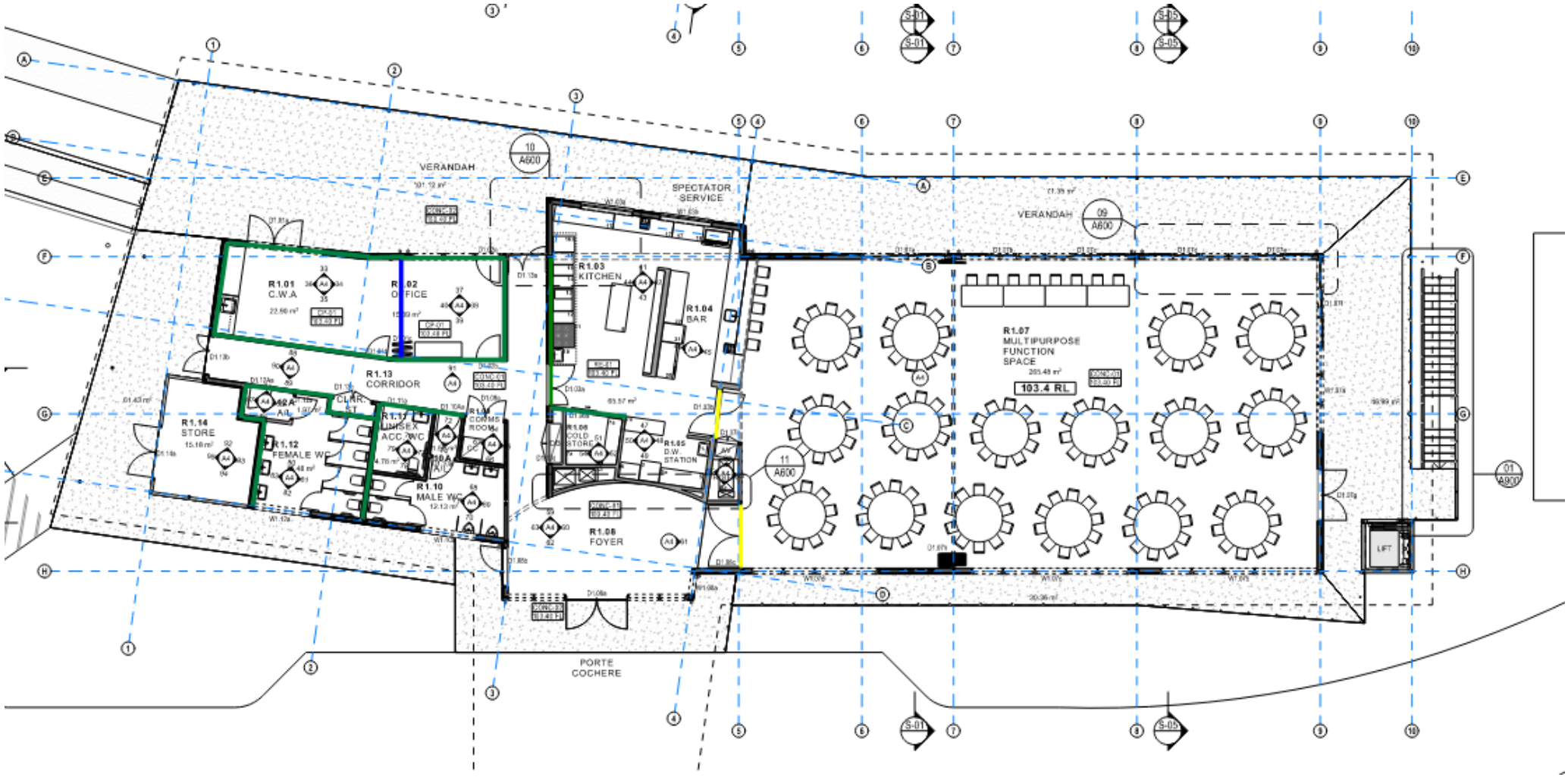
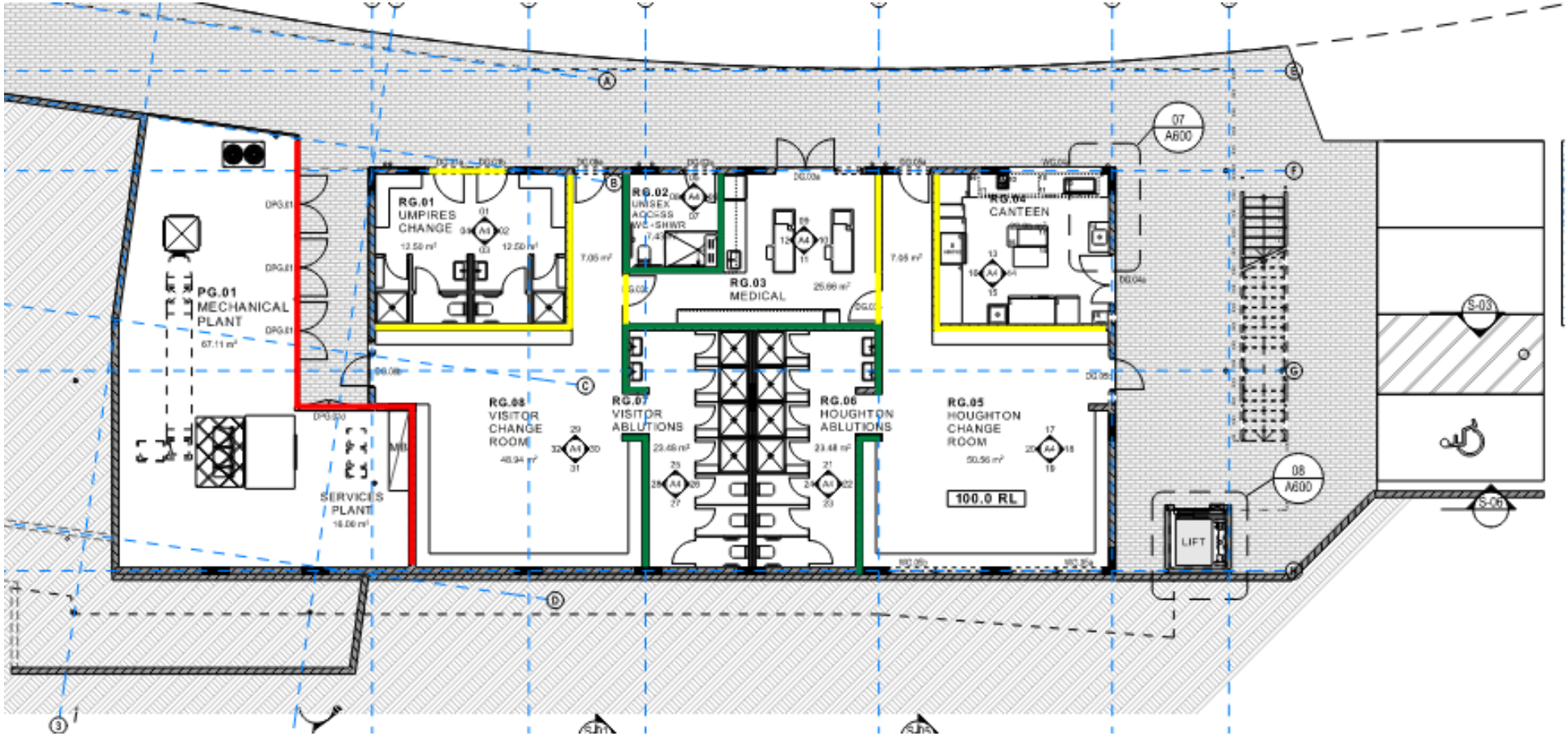
14:09:30
14:39:30
15:09:30
15:39:30
16:09:30
16:39:30
17:09:30
17:39:30
LAFmax [dB]
LAeq [dB]
LA01
LA10
LA90

Appendix B

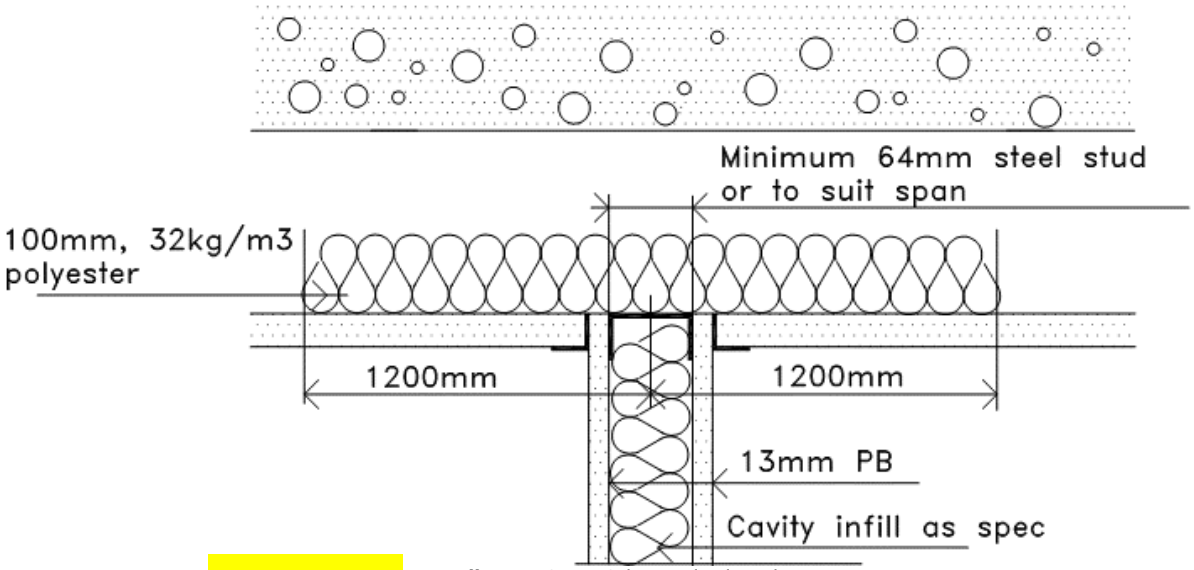
Partition Mark-Up

Speech Privacy	D_W	Mark-up Colour
Normal Privacy	D_W 35-40	
Good Privacy	D_W 40-45	
Good Privacy: Operable Wall Office and C.W. A	D_W 40-45	
Mechanical and Services Plant Partition	D_W 45-50	

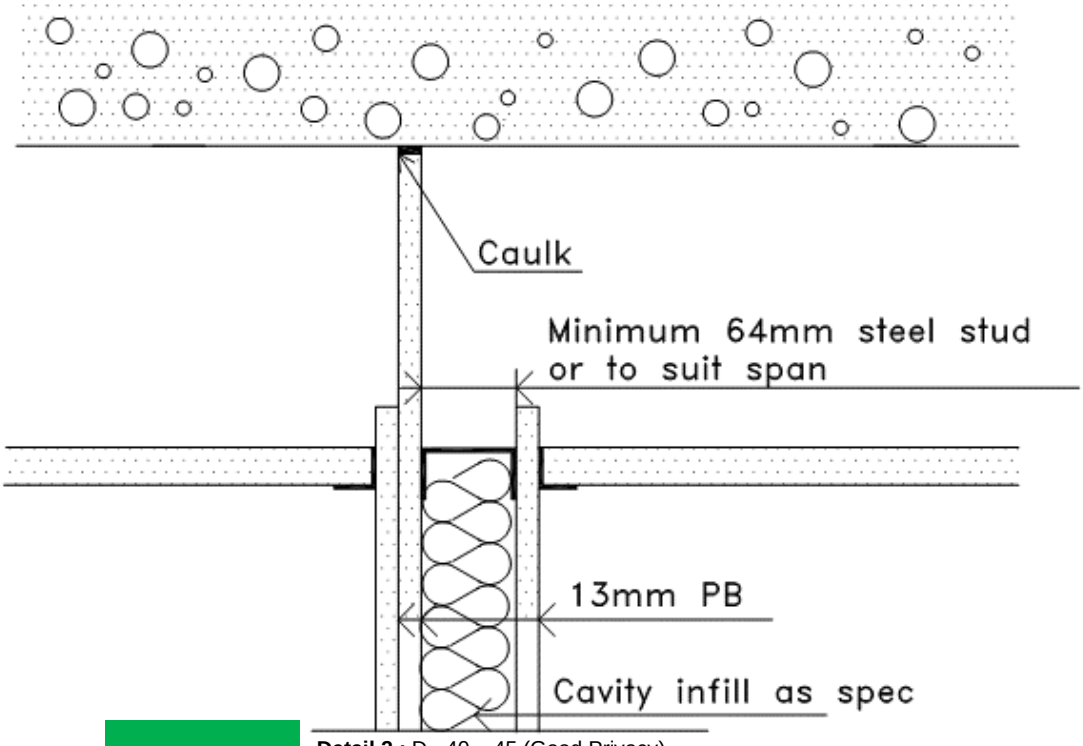

VERANDAH
SPECTATOR SERVICE
VERANDAH
R1.01 C.W.A
R1.02 OFFICE
R1.03 KITCHEN
R1.04 BAR
R1.07 MULTIPURPOSE FUNCTION SPACE
103.4 RL
R1.13 CORRIDOR
R1.14 STORE
R1.12 FEMALE WC
R1.10 MALE WC
R1.08 FOYER
R1.05 D.W. STATION
PORTE COCHERE
LIFT


RG.01
UMPIRES
CHANGE
RG.02
UNISEX
ACCESS
WC-SHWR
RG.03
MEDICAL
RG.04
CANTEEN
PG.01
MECHANICAL
PLANT
RG.08
VISITOR
CHANGE
ROOM
RG.07
VISITOR
ABLUTIONS
RG.06
HOUGHTON
ABLUTIONS
RG.05
HOUGHTON
CHANGE
ROOM
SERVICES
PLANT
100.0 RL
LIFT
07
A600
08
A600
S-03
S-05

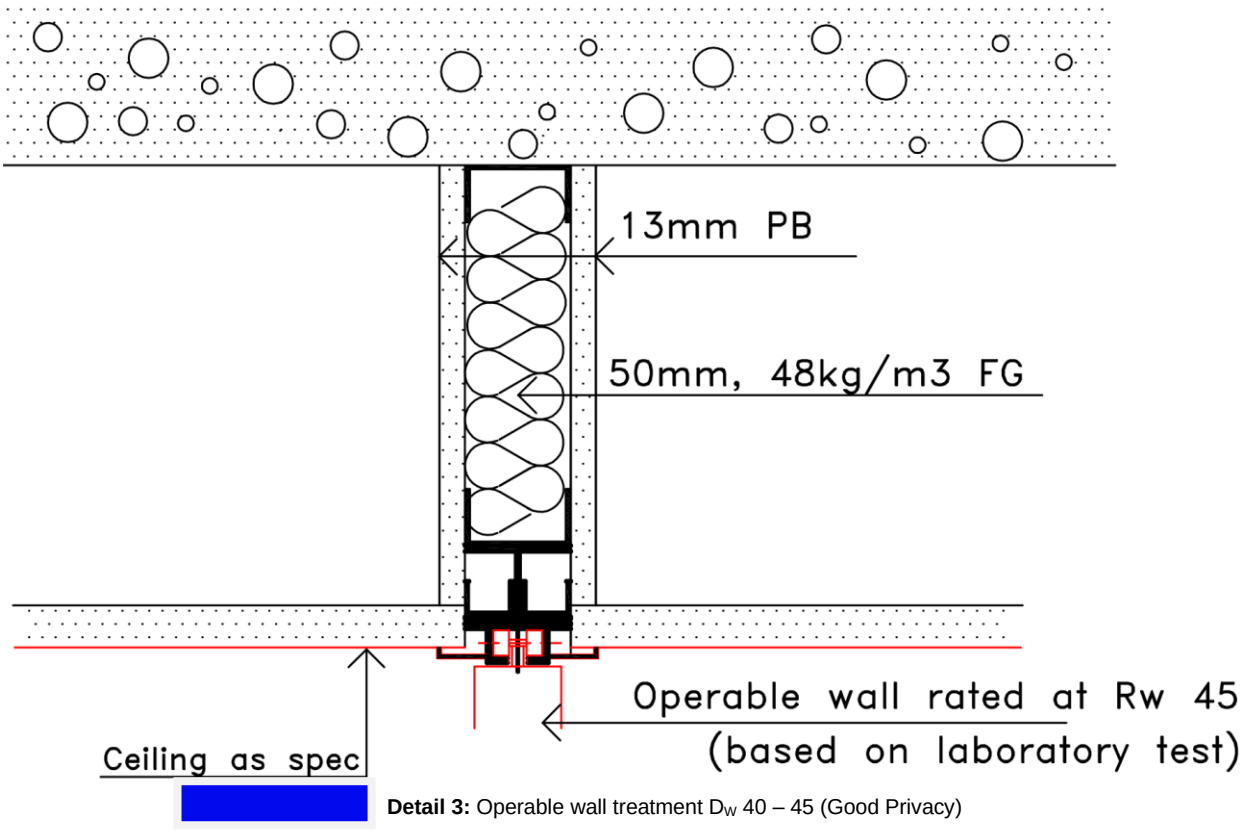
Appendix C
Internal Partition Standard Designs



Detail 1: D_w 35 – 40 (Normal Privacy)



Detail 2 : D_w 40 – 45 (Good Privacy)



Detail 3: Operable wall treatment D_w 40 – 45 (Good Privacy)

Appendix D
Glossary of Acoustic Terminology

dB(A) Also referred to as dBA. A unit of measurement, decibels (A), of sound pressure level which has its frequency characteristics modified by a filter ("A-weighted") so as to more closely approximate human ear response at a loudness level of 40 phons. The table below outlines the subjective rating of different sound pressure levels.

Noise Level (dBA)	Subjective Rating
25-30	Barely audible and very unobtrusive.
30-35	Audible but very unobtrusive.
35-40	Audible but unobtrusive.
40-45	Moderate but unobtrusive.
45-50	Unobtrusive with low levels of surrounding activity.
50-55	Unobtrusive with high levels of surrounding activity.

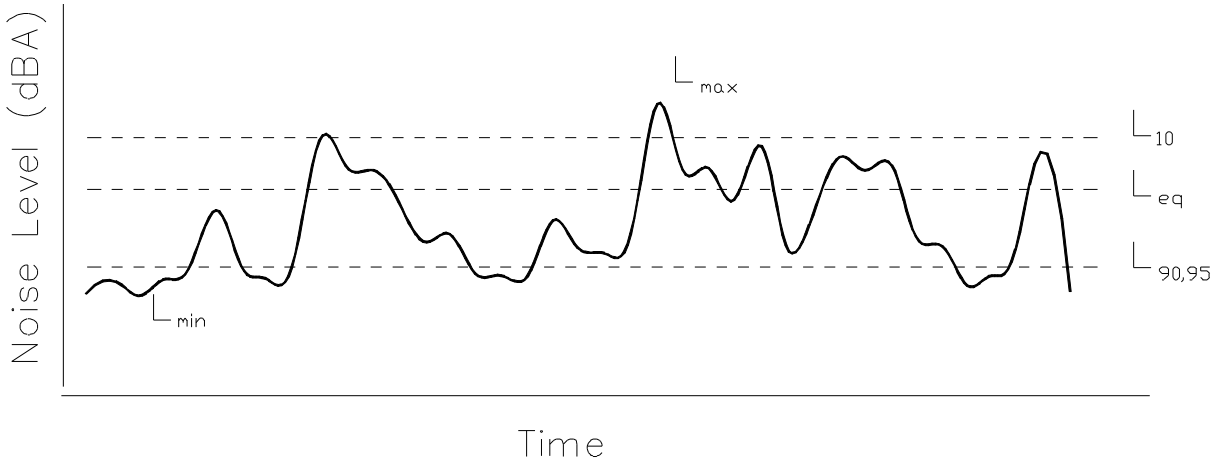
L_1 The noise level which is equalled or exceeded for 1% of the measurement period. L_1 is an indicator of the impulse noise level, and is used in Australia as the descriptor for intrusive noise (usually in dBA).

L_{10} The noise level which is equalled or exceeded for 10% of the measurement period. L_{10} is an indicator of the mean maximum noise level, and is used in Australia as the descriptor for intrusive noise (usually in dBA).

L_{90}, L_{95} The noise level which is equalled or exceeded for 90% of the measurement period. L_{90} or L95 is an indicator of the mean minimum noise level, and is used in Australia as the descriptor for background or ambient noise (usually in dBA).

L_{eq} The equivalent continuous noise level for the measurement period. L_{eq} is an indicator of the average noise level (usually in dBA).

L_{max} The maximum noise level for the measurement period (usually in dBA).



Note: The subjective reaction or response to changes in noise levels can be summarised as follows: A 3dBA increase in sound pressure level is required for the average human ear to notice a change; a 5dBA increase is quite noticeable and a 10dBA increase is typically perceived as a doubling in loudness.

STC/R_W Sound Transmission Class or Weighted Sound Reduction Index. Provides a single number rating (from the sound transmission loss or sound reduction index for each frequency band) of the sound insulation performance of a partition. The higher the value, the better the performance of the partition. The subjective impression of different ratings is shown in the table below.

Type of noise source	STC/Rw Rating				
	40	45	50	55	60
Normal Speech	Audible	Just Audible	Not Audible		
Raised speech	Clearly Audible	Audible	Just Audible	Not Audible	
Shouting	Clearly Audible	Clearly Audible	Audible	Just Audible	Not Audible
Small television/small entertainment system	Clearly Audible	Clearly Audible	Audible	Just Audible	Not Audible
Large television/large hi-fi music system	Clearly Audible	Clearly Audible	Clearly Audible	Audible	Just Audible
DVD with surround sound	Clearly Audible	Clearly Audible	Clearly Audible	Audible	Audible
Digital television with surround sound	Clearly Audible	Clearly Audible	Clearly Audible	Audible	Audible

FSTC/R_W' The equivalent of STC/R_W, unit for sound insulation performance of a building element measured in the field.

C_I, C_{tr} The ratings (R_W, D_{nTw}, L_{nTw}) are weighted in accordance to a spectrum suited to speech. This term modifies the overall rating to account for noise with different spectra, such as traffic (C_{tr}) or footfalls (C_I). The ratings may be written as R_W+C_{tr}, or $D_{nTw}/L_{nTw}+C_I$.

NNIC/D_{nTw} Normalised Noise Isolation Class, or Weighted Standardised Sound Level Difference. Provides a single number rating of the sound level difference between two spaces, and incorporates the effects of flanking noise between two spaces. This rating is generally accepted to be about 5 points less than the STC/R_W rating.

IIC/L_{nw} Impact Insulation Class, or Weighted Normalised Impact Sound Level. L_{nw} = 110 - IIC. The higher the IIC rating, or the lower the L_{nw} rating the better the performance of the building element at insulating impact noise. The table below gives the subjective impression of different ratings:

IIC	Lnw	Subjective Rating
40	70	Clearly Audible
45	65	Clearly Audible
50	60	Audible
55	55	Audible
60	50	Just Audible
65	45	Inaudible

FIIC/L_{nTw}' The equivalent of IIC/L_{nw}, but the performance is for the building element measured in the field.

Environment Protection Authority
GPO Box 2607 Adelaide SA 5001
211 Victoria Square Adelaide SA 5000
T (08) 8204 2004
Country areas 1800 623 445

OFFICIAL

EPA Reference: PDI 102

20 July 2022

Doug Samardzija
Adelaide Hills Council
PO Box 44
Woodside

Email: dsmardzija@ahc.sa.gov.au

Dear Doug,

EPA Development Application Referral Response

Development Application Number	**21008654**
Applicant	**Phillips/Pilkington Architects**
Location	**1377 Lower North East Road, Houghton**
Proposal	**Two storey community facility, including function hall (200 person capacity), verandah, associated carparking, landscaping & earthworks**

This application was referred to the Environment Protection Authority (EPA) by the Assessment Manager at Adelaide Hills Council in accordance with section 122 of the *Planning, Development and Infrastructure Act 2016* ('PDI Act'). The following response is provided in accordance with section 122(5)(b)(ii) of the PDI Act.

The EPA assessment criteria are outlined in section 57 of the *Environment Protection Act 1993* and include the objects of the Environment Protection Act, the general environmental duty, relevant environment protection policies and the waste strategy for the State.

Advice in this letter includes consideration of the location with respect to existing land uses and is aimed at protecting the environment and avoiding potential adverse impacts upon the locality.

PROPOSAL

The proposal includes facilities for the football club change rooms, canteen, toilets and a function centre. There would be a maximum of 12 non-community/football functions per year. Two football games would occur on match day every two weeks with training an additional two nights per week.

SITE

The proposal is in the Mount Lofty Ranges Water Supply Catchment (Area 1), a significant water supply catchment for Adelaide. Development of any type may impact adversely on water quality and must be very carefully managed. In the watershed, a risk-based planning hierarchy is used whereby land use and development is matched to the risk posed to the drinking water supply; 'Area 1' means the development is in the immediate hydrological catchments of the primary reservoirs and streams that are directly harvested for drinking water supply.

The *Planning and Design Code* requires that the proposal demonstrates that there would be a neutral or beneficial impact on the quality of water as a result of the development. Impacts from both wastewater (sewerage) and stormwater runoff must be considered.

ENVIRONMENTAL ASSESSMENT

Wastewater

For applications proposing an onsite wastewater management system with an accompanying irrigation/disposal area, the EPA requires demonstration that the treatment system would reduce nutrient level sufficiently prior to application to the disposal area and that the disposal area is of sufficient size to achieve a nutrient balance, where the total amount of nitrogen present in the effluent from the wastewater system (i.e., post treatment) can be used by the vegetation planted in the area. Both the treatment system and the crop/disposal area require active system management to ensure wastewater is adequately treated and the development is considered to have a neutral impact on water quality.

This proposal is to utilise onsite preliminary treatment of wastewater and then disposal via a Wisconsin mound. The following is noted from the information provided:

- Wastewater will pass through a grease arrestor before passing to a septic tank, holding tank and then to an *Ozzikleen* secondary treatment system before being disposed via the Wisconsin mound.
- The maximum flow of wastewater is calculated at 1.7 Kilolitres (kl) per day.
- The Wisconsin mound area is 385m2 and will have a network of pipes to ensure even distribution.
- The holding tank in the system is to ensure a consistent daily flow over the two-week cycle of operation.
- The Wisconsin mound would be planted with a winter active Lucerne crop. The crop would be managed by a contractor and is to be cut and baled and removed offsite.
- The nutrient balance provided indicates that the nitrogen applied in the wastewater would be adequately removed by the crop of lucerne.
- The Ozzikleen system and septic would be desludged periodically and this would be undertaken by

an EPA licensed contractor.
- The system would include an audible and visual alarm to alert personnel of a fault. Measures would be in place to ensure all wastewater is tinkered from the site by a licensed operator for alternative disposal until such time as the system is functional again.
- Should the Wisconsin mound become saturated, it can be disconnected from receiving flows and wastewater tankered from the holding tank until he site has sufficiently died.
- No irrigation of the oval is to occur.
- There is a bore on the boundary which is to be decommissioned.

Based on the treatment system proposed – septic tank, holding tank, *Ozzikleen* secondary treatment system and the provided nutrient balance, it is anticipated that the nitrogen will be sufficiently reduced so that when applied to the Wisconsin mound it would be adequately removed by the crop of lucerne. The Wisconsin mound disposal area is of sufficient size for the wastewater volume and nutrient application provided the wastewater treatment system is maintained to achieve optimal water quality results.

The proposal has indicated that the wastewater treatment system would be desludged as required and be suitably alarmed to alert the operators of any system failure. Information provided indicates that wastewater will be tankered from site should there be a system fault, or the Wisconsin mound disposal area becomes saturated. Furthermore, documentation outlines that the lucerne crop will be managed by a contractor and the lucerne harvested and removed from the site. Hence, the nutrients applied in the wastewater post treatment should be removed from the site when the crop is harvested.

It is recommended that management processes for both the wastewater treatment system and the disposal area are documented in an operational management plan. A note is included to this effect below.

Due to the proximity of a creek line which is piped under the oval the applicant has committed to ensuring no irrigation of wastewater would occur on the oval. The Wisconsin mound is to be on the opposite side of the oval as far as practical from the creek line.

Stormwater

A stormwater management plan prepared by Tonkin Consulting and dated 17 April 2018 outlines a treatment train approach for stormwater quality improvement including a gross pollutant trap followed by a detention pond. The report indicates that stormwater quality improvement criteria can be met. The report is based on a concept design and states that 'the treatment train measures recommended in this report is the minimum requirement'. This is acceptable to the EPA and a condition is directed below in this regard.

Construction Activities

During site works, particular attention must be given to minimising pollution from construction activities. Protecting land stability and immediate rehabilitation and stabilisation after disturbance of the land surface would minimise release of soil sediments off site into the stormwater system, water bodies or in the form of nuisance dust. One way of managing the environmental impacts arising from

construction would be to develop a soil erosion and drainage management plan. A note in this regard is included below.

CONCLUSION

Provided the wastewater treatment system including disposal area (Wisconsin Mound) are developed and maintained into the future as specified it is anticipated that the wastewater system for the proposed development would have a neutral impact. Subject to detailed design, the stormwater system and water quality improvement can be managed to ensure neutral impact.

Importantly, the EPA notes that the assessment undertaken above was based upon the proposed level of use of the function centre, i.e. that the number of non-community and football functions is to be restricted to twelve per year.

DIRECTION

The relevant authority is directed to attach the following conditions to any approval:

1. No irrigation of the oval with treated wastewater is to occur.
2. All bores located on site must be decommissioned prior to the commissioning of the wastewater system.
3. The wastewater system must be fitted with an audible and visual alarm to alert a person of responsibility of any and all faults.
4. The detailed design of the stormwater management system must incorporate the outcomes modelled in the concept design outlined in the '*Houghton Memorial Oval Stormwater Management Plan*' prepared by Tonkin Consulting and dated 17 April 2018.

The following notes provide important information in relation to the development and are requested to be included in any approval:

- The applicant/owner/operator are reminded of its general environmental duty, as required by section 25 of the *Environment Protection Act 1993*, to take all reasonable and practicable measures to ensure that activities on the site and associated with the site (including during construction) do not pollute the environment in a way which causes or may cause environmental harm.
- The EPA recommends that management processes and responsibilities for the operation and management of the wastewater treatment system and irrigation area are documented in an operational management plan.
- Further information and resources on managing construction activities to minimise impacts to waste quality can be found on the EPA website Building & construction | EPA. In particular, the Code of practice for the building and construction industry lists the circumstances in which a soil erosion drainage management plan should be prepared.
- More information about the Environment Protection Authority and the Environment Protection Act and policies can be found at: www.epa.sa.gov.au .

If you have any questions about this response, please contact Sophie Gordon on 08 8204 2078 or email

Sophie.Gordon@sa.gov.au.
Yours faithfully

Hayley Riggs
Delegate
ENVIRONMENT PROTECTION AUTHORITY

Government of South Australia
SA Health

Contact: Katie Koto
Telephone: (08) 8226 7100
Email: katie.koto@sa.gov.au

Public Health Services
Citi Centre Building
11 Hindmarsh Square
Adelaide SA 5000
PO Box 6
Rundle Mall SA 5001
DX 243
Tel 08 8226 7100
Fax 08 8226 7102
ABN 97 643 356 590
www.health.sa.gov.au

Our reference: WWI-10263/2

29 July 2022

Att: Mr M Thomas
Houghton, Inglewood & Hermitage Soldiers Memorial Park Inc.
PO Box 1
Inglewood
SA 5133

Dear Mr Thomas,

RE: VARIATION TO WASTEWATER WORKS APPROVAL – Houghton Memorial Oval, Lower North East Road, Houghton SA (CT 5276, Folio 671)

I refer to Houghton, Inglewood & Hermitage Soldiers Memorial Park Inc.'s request to vary approval WWI-10263/1, to accommodate the inclusion of a secondary treatment system to the wastewater design.

This approval supersedes WWI-10263/1 and includes:

- A change to the referenced documents.
- A change to condition 1.2.
- The addition of condition 1.7.
- The addition of condition 1.8.
- Changes to condition 4.
- A change to condition 7.
- Changes to condition 8.
- A change to condition 12.
- Condition 13 is now condition 16.
- The addition of condition 13.
- The addition of condition 14.
- The addition of condition 15.

Approval WWI-10263/1 has been revoked and replaced by this approval.

Pursuant to the South Australian Public Health (Wastewater) Regulations 2013, the wastewater system has been approved by the Department for Health and Wellbeing (DHW) subject to the following conditions:

1. The approved system incorporates:

    1.1. A 20,000 L Ri-Industries septic tank with a trafficable lid.
    1.2. A 20,000 L Ri-Industries balance tank with a trafficable lid, fitted with a suitable pump programed to dose effluent at a rate of 1,700 L/d to the secondary treatment system.
    1.3. A DN50PE100 PN16 rising main of suitable length.
    1.4. A 35 m long and 11 m wide Wisconsin mound. **The setbacks for the mound must be in accordance with the SA Health's On-site wastewater Systems Code.**
    1.5. Underfloor plumbing of the system as per the AS 3500.
    1.6. A 1,000 L grease arrestor.
    1.7. An Ozzi Kleen RP10A+ secondary treatment system.
    1.8. A minimum 2kL pump sump programmed to dose effluent at a rate of 1,700L/d to the Wisconsin Mound.

2. The system is to be installed, commissioned, operated and maintained in accordance with:

    2.1. Plans, specifications and other documentation as submitted and approved by the Department for Health and Wellbeing (DHW).
    2.2. Design engineer, manufacturers, installers and equipment suppliers' instructions and recommendations.
    2.3. SA Health On-site Wastewater Systems Code.
    2.4. AS/NZS 1547 On-site domestic wastewater management.
    2.5. AS/NZS 3500 Plumbing and drainage.
    2.6. All other relevant standards and codes.
    2.7. Conditions of this approval.

3. A licensed plumber must carry out the installation of the wastewater system and submit to the DHW a plumbing certificate of compliance within 28 days of the works being completed.

4. With regard to the on-site land application system:

    4.1. There shall be no pooling or runoff of wastewater.
    4.2. The area must not be subject to vehicle traffic or structural loadings.

5. The operator of the on-site wastewater system must ensure that the lids and access openings are to be fitted to be childproof and gas and watertight.

6. The pumps must be suitable for their intended load and operating environment.

7. Audible and visual alarm systems must be provided to the balance tank and pump sump, in accordance with the SA Health's On-site Wastewater Systems Code.

8. The following discharges must not enter the on-site wastewater system:

    8.1. Stormwater.
    8.2. Backflush waters from a swimming pool or water softener.

8.3. Discharge or backflush from a spa bath/pool in excess of 680 litres.
8.4. Sanitary napkins, clothing, plastic material, wet wipes or liners.
8.5. Paint, petroleum products, strong alkaline, acids or other flammable or explosive substance, whether solid, liquid or gas.
8.6. Trade wastes, other than those receiving pre-treatment via the grease arrestor, as listed in condition 1.6.

9. Within **eight weeks** of practical completion of the installation, engineering certification by a wastewater engineer is to be submitted to the Minister for Health and Wellbeing (C/- Wastewater Management Section, DHW). The engineering certification is to clearly state the compliance or otherwise, of both system components and the system as a whole, including:

9.1. Compliance with the conditions of this approval.

9.2. Compliance of all components of the installation with relevant industry codes and standards, including:

9.2.1. Construction and installation methodology.
9.2.2. Structural soundness and suitability of materials used.
9.2.3. Inspection and acceptance testing, including for watertightness, of the installation.
9.2.4. Marking and colour coding of reticulation mains and laterals.
9.2.5. Suitability of materials used, construction/installation methodology, trenching, bedding, jointing, etc.
9.2.6. Compliance with designers, manufacturers and equipment suppliers' instructions and recommendations.

The applicant is responsible to ensure that auditing of the wastewater system during installation is undertaken as per the standards, guidelines and specifications referred to by this approval, and that compliance is maintained with installation methods, correctness of materials used, and the testing of the system.

The engineering certification is to be based on the assessment results including tests carried out during construction of the wastewater system.

10. This approval shall become void if the installation is not completed within 24 months of the date of approval.

11. Pursuant to the South Australian Public Health (Wastewater) Regulations 2013, the DHW reserves the right to vary any or all of the approval conditions, and require the repair, replacement, rectification, or alteration of the system or any part thereof should at any time:

11.1. The system or a component thereof not be manufactured, installed and/or operated in accordance with the approval conditions; or
11.2. The system is defective and not able to perform the function for which the approval was issued; or

11.3. The system is operated in a manner that is prejudicial to public and environmental health, or causes environmental nuisance.

12. The septic tank must be desludged on a **four-yearly** basis. Removal of wastewater and sludge must be undertaken by an EPA licenced waste transporter. Pump out records must be kept by the owner and provided to DHW if requested.

13. The secondary treatment system must be serviced to manufacturer's requirements on a minimum **quarterly** basis.

14. There shall be no cross connections with any other water supply without backflow prevention to protect that supply, as per AS/NZS 3500 and the requirements of SA Water and the Office of the Technical Regulator (OTR).

15. Extensions, upgrades or modifications to the wastewater system will be subject to approval from the Minister for Health and Wellbeing (C/- Wastewater Management Section, DHW).

16. Non-compliance with any of the conditions of approval shall be reported as soon as practicable but within one business day by email to the Minister for Health and Wellbeing (c/o Wastewater Management Section, Department for Health and Wellbeing).

Approved by: Date: 29 July 2022

Karen Bennink
Manager, Wastewater Management
Delegate of the Minister for Health and Wellbeing

CC: -Adelaide Hills Council
-Tonkin Consulting

References:-

- The following documents, provided by Tonkin, in association with job number 20155781:

  - Onsite Wastewater Treatment System Report Houghton Memorial Oval, dated 28 July 2022.
  - EPA Letter Reference PDI102 Wastewater Response Memo, dated 6 December 2021.
  - Septic Tank Sizing Calculations, dated July 2018.
  - Onsite wastewater system design, Houghton Memorial Oval, Plans and Typical Detail, sheet number S01, Rev 7, dated 05.07.22.

- The following hydraulic services drawings, prepared by BESTEC, dated 8-April-21:
  - Ground Floor- Plumbing Drainage, Dwg. No. H-02, Issue 01.
  - First Floor- Plumbing Drainage, Dwg. No. H-03, Issue 01.
  - Legend of Symbols & Details, Dwg. No. H-07, Issue 01.

- Information provided by the applicant.

Note 1: The approval does not abrogate responsibilities under other Acts or Regulations to obtain the necessary approvals, permits or licences from other agencies, including but not limited to:

- Environmental Protection Agency (EPA)
- Department for Environment and Water
- Office of the technical Regulator
- Department of Primary Industries and Regions SA
- Development Assessment Commission (DAC) and/or the Local Council

Onsite Wastewater Treatment System Report
Houghton Memorial Oval

To	Matt Thomas		
From	Tonkin	**Date**	28 July 2022
Subject	Onsite Wastewater Treatment System – July 2022 Update		

July 2022 Report Update Preamble

Following further consultation with the EPA regarding nutrient removal of the Wastewater system for Wisconsin Mound (infiltration disposal), the design of the Houghton Memorial Oval has been amended from the previous SA Health Approval. The amendment includes the addition of a new proprietary aerobic sewage treatment tank (OzziKleen RP10A+), installed downstream of septic and holding tanks to provide the required nutrient reduction to satisfy the requirements of the EPA (Refer memo 'Houghton EPA response July22' – Appended to this report). The septic and holding tanks previously nominated are proposed to be retained as part of this updated design.

Refer to WWI-10263 for previous SA Health Approval.

Site Description and Features

Construction of a new function centre and club rooms at the Houghton Memorial Community Oval is currently being considered by the committee. Part of this work will involve upgrading the existing on-site wastewater system such that the proposed new buildings can be serviced in accordance with current regulatory requirements. The existing septic tank is currently connected to the existing club room facilities at the oval, however this tank is old and will not satisfactorily cope with flows anticipated from the proposed new facilities. Due to the proposed size of the replacement onsite wastewater disposal system, the system will require approval by the Department of Health.

Due to the steep terrain to the perimeter of the Houghton Memorial Oval site, the available area for effluent disposal is limited in accordance with the surface gradient requirements of the relevant design codes. The area adjacent the western boundary of the site is proposed, as it is the only available portion of the site large enough to facilitate the disposal area required for the anticipated effluent volumes.

The oval itself has not been considered as a wastewater disposal area due to an existing creek that runs through the eastern half of the allotment (and beneath the oval via a stormwater pipe of unknown condition). As the condition of the stormwater pipe is unknown, it has been assumed that the pipe may allow for the ingress of water externally. On this basis, the stormwater pipe has been assumed to be equivalent to a watercourse for purposes of wastewater disposal assessment.

A survey of the available land for effluent disposal found natural slopes in the order of 15 degrees (30%), and as such it is expected that significant earthworks will be required in order for a system to be constructed that complies with AS 1547 "Onsite Domestic Wastewater Management".

This area of land will also require the clearance of considerable vegetation. No investigations have been conducted into any regulatory restrictions that may apply to clearance of vegetation on the site. The client is to ensure that all regulatory requirements are met prior to any earthworks occurring.

Neighbouring Sites	Neighbouring sites consist of rural residential properties. The final footprint of the wastewater disposal should not lie within 0.5m of any boundary in accordance with the SA Health “Onsite Wastewater |Systems Code” (the Code)
Watercourses	The creek running through the allotment, including the stormwater pipe that runs beneath the oval surface, has been assumed to be a watercourse in accordance with the Code. As such, wastewater disposal is to be located a minimum of 50m from the creek and pipe location. A search of registered groundwater bores on WaterConnect[1] indicates that there is an onsite groundwater bore approximately 50m from the proposed wastewater disposal area. Under the requirements of the Code, wastewater disposal systems must be located at least 50m from bores used for human or domestic purposes. Whilst WaterConnect provides an approximate location and details of existing groundwater bores, the records are not always accurate. We recommend that existing groundwater bores be identified on site by the plumber or owner to ensure the correct proximity.
No. of Boreholes	In December 2016 Tonkin Consulting undertook geotechnical investigations to determine the stratigraphy at the proposed wastewater disposal location. Due to restricted access, both by terrain and vegetation, six boreholes were drilled using hand drilling methods. The borehole locations are shown on the enclosed Plan and Details sheet.
Soils Present	The stratigraphy at each borehole location varied slightly, but typically consisted of Silts and Gravelly silts over weathered sandstone recovered as sands and clayey sands. Refer to the attached soil log sheets for further information.
Fill	Fill was not encountered.
Rock	Bedrock was typically encountered between 0.6 and 0.8m below ground level.
Water Table	At the time of investigation groundwater was not encountered within the depth of the soil investigated.
Permeability Classification	Due to the presence of shallow bedrock at the proposed wastewater disposal area, the site is not considered suitable for effluent disposal by conventional soakage beds/trenches.

[1] https://www.waterconnect.sa.gov.au/Systems/GD/Pages/default.aspx#Unit%20Number: **28 July 2022**

Recommended Wastewater System Type	Due to site and geotechnical constraints, construction of either a Wisconsin Mound or an Aerobic Wastewater Treatment System with surface or subsurface irrigation is recommended. Due to the natural slopes across the site beyond the oval perimeter, each option would require earth works to reduce grades to levels allowed by AS 1547 for a disposal site located beyond the oval extents. The client has indicated a preference not to adopt an aerobic system and as such this report details the requirements of a Wisconsin Mound system in accordance with Appendix N of AS 1547. Effluent flows from the new function centre and club rooms are estimated using Appendix E of the Code. Tanks are also sized in accordance with the Code.

Wastewater Treatment system Specification

Owner Selected & Designed Wastewater System	Grease Arrestor, Min. 20,000L Septic Tank, Min 20,000L Holding Tank, Min. 2,000L/day treatment capacity OzziKleen RP10A+ (Nutrient Reduction) and Pumping Sump dose loading to a Min. 11 x 35m Wisconsin Mound system with 6 Port Indexing to distribution laterals.

Grease Arrestor Sizing

Due to anticipated meal preparation and dish washing requirements at the proposed new function centre, require the installation of an SA Health approved grease arrestor to capture solids, oil and grease prior to septic tank treatment. In accordance with the SA water Trade Waste Guideline adopt a 1,000 L grease arrestor.

Septic Tank Sizing

Septic tank flows and sizing is in accordance with the SA Heath “Onsite Wastewater Systems Code – 2013” (the Code). The flows are based an assumed pattern of usage and should be confirmed by the client as a reasonable peak allowance over a one-week period. Referring to the enclosed septic tank sizing calculations:

Peak Effluent Inflow:	9,400 L/d
Sludge Flow:	1,107 L/y
Desludging Frequency:	Maximum 4 years (Recommended 2 years)
Minimum Septic Tank Size Required:	13,900 L
Adopted Septic Tanks Size	20,000 L (for contingency)

Note that where peak daily effluent flows exceed 6,000 L/d, the Department of Health is the approving body. Where peak daily effluent flows are 6,000 L/d or less and the property is independent of the local Council, Council is then the approving body.

Holding Tank Sizing & Wisconsin Mound Flow

To reduce the required size of the proposed Wisconsin Mound disposal field, it is proposed to dose load effluent to the disposal area at a constant daily rate over a 2-week period (A 2-week disposal period has been selected as the peak effluent inflow occurs fortnightly). Refer to Table 1 for the proposed flow balance.

Table 1. Holding Tank Flow Balance

Week	Weekday	Tank Inflow (L)	Tank Outflow (L)	Balance (L)
	Friday	3400	1700	1700
	Saturday	9400	1700	9400
	Sunday	0	1700	7700
1	Monday	0	1700	6000
	Tuesday	1000	1700	5300
	Wednesday	0	1700	3600
	Thursday	1000	1700	2900
	Friday	3400	1700	4600
	Saturday	3400	1700	6300
	Sunday	0	1700	4600
2	Monday	0	1700	2900
	Tuesday	1000	1700	2200
	Wednesday	0	1700	500
	Thursday	1000	1700	0

Holding Tank Size Required:	Min. 14,100 L (based on the estimated maximum storage requirement, with an additional 50% of peak daily inflow as emergency capacity). Note that a 20,000L tank has been adopted for additional contingency
Holding Discharge Rate	A pump and program to timer dose 70L/dose, once per hour to the downstream OzziKleen RP10A+ is to be provided. The system is to include a 24-hour clock, with daily discharge monitored using a flowmeter or pump run time monitoring, coupled with suitable logic control.
Nutrient Reduction	A Min. 2,000L/d treatment capacity OzziKleen RP10A+, installed to manufacturers requirements, is to be installed downstream of the Septic and Holding tanks to provide Nutrient Reduction suitable for infiltration disposal via the Wisconsin Mound.
Pumping Sump	A pumping sump is required downstream of the OzziKleen system to transfer to Wisconsin Mound. Min. 2,000L tank. The daily discharge rate is not to exceed 1,700 L/d to the Wisconsin Mound. The system is to include a 24-hour clock, with daily discharge monitored using a flowmeter or pump run time monitoring, coupled with suitable logic control.
Elevation Difference between Pump Tank and Soakage:	Approximately 10m (to be confirmed by the client onsite).
Potential Pump Model:	Davey D42A submersible sump pump (or approved equivalent).
Design Pump Rate:	68L/min
Design Pump Head:	32m
Pipework:	Main (approximately 200m) DN50mm PE100 PN12.5 Pipe.

The contractor is to confirm exact length of pipe, particularly the length of main from the holding tank to the Wisconsin Mound area and the actual elevation difference between the liquid pump-out level and the mound discharge point.

Contractor is to select suitable bends and tees.

Wisconsin Mound Design

Wisconsin mound designed in accordance with AS 1547 “Onsite Domestic Wastewater Management”. The design is based on a 15% ground slope which is the maximum design slope allowed by AS 1547. Current surface slopes exceed this allowable grade. Earthworks to meet the maximum design slope are to be conducted by the client.

Peak Daily Mound Inflow:	1,700 L

Following earthworks, the mound is expected to be constructed onto an impermeable rock surface and as such, design the mound for horizontal toe loading (max 50 L/m/d):

Basal Length = 1700L / 50L/m/d = 35m basal length

Loading of the aggregate bed shall not exceed 40mm/d and as such size the dimensions of the aggregate bed. For an aggregate bed length of 29m:

Bed Width = 1700L / 40mm/d x 29m = 1.5m bed width

Based on 15% design slope and typical mound dimensions shown in AS 1547 Figure N1:

Basal Area = 35m x 11m = 3850 m^2 (refer typical details enclosed)

Based on the figures outlined in AS 1547 Table N1, loading on basal area shall not exceed 32 mm/d (Category 1 – Sand Fill Media):

Basal Loading = 1700L/ 35m x 11m = 4.4 mm/d

Wisconsin Mound Area Required:	35m long x 11m wide x min 1.3m high mound area. (1.3m height as measured at the location of the Wisconsin mound pipe laterals) Approximately 30m Long x 1.5m wide x 0.225m deep aggregate bed. (All other dimensions in accordance with the enclosed typical details)
Wastewater System Compliance	The system has been designed to meet the requirements in the SA Health Standard “On-site Wastewater Systems Code” April 2013” and AS 1547 “Onsite Domestic Wastewater Management” with the exception of the following assumed dispensation, which should be sought from SA Health: • An existing onsite groundwater bore is likely located on the boundary of the 50m setback specified in Table B3 of the Code. (We have positioned the wastewater soakage area as distant as practical to the existing bore, with consideration of the topography and required building and boundary setbacks on the lot itself. With possible inaccuracies of the bore mapping system, the owner or builder would need to accurately measure between the bore and soakage area for the exact distance.) • Assuming that the existing bore is located within the 50m Code setback requirement, we would recommend that the bore be decommissioned. (It is appreciated that in practice, achieving the closure of this bore could be difficult under the current circumstances.)

The following should also be considered by the Owner regarding compliance of the system:

- Future development of the site by the owners should consider the setback requirements and impacts on the wastewater irrigation area.
- Excessive watering of gardens or lawn at / near the wastewater disposal area should be avoided.
- Stormwater shall be directed away from the wastewater disposal area with suitable erosion protection measures put in place.

- If major variations in the soil or soil depth compared to the bore logs are found during the construction of the effluent disposal area, the engineer should be contacted for further advice.
- Possible variations in soils on the property beyond the designated wastewater disposal area have not been considered in this assessment.

The final construction of the wastewater disposal system, including all materials used, shall meet the requirements of the SA Health Standard "On-site Wastewater Systems Code" April 2013' and AS 1547 "Onsite Domestic Wastewater Management".

Formal approval will need to be provided by the Department of Health prior to installation of the system. Furthermore, investigation into any regulatory restrictions on vegetation clearance which may apply should be conducted. It is also recommended that the client review and confirm the assumed weekly usage (number of functions, game days and trainings) and also the expected number of people attending each of these, as this directly affects the sizing of all infrastructure.

Disclaimer — Tonkin Consulting has designed this wastewater treatment system to the Code and have noted known conditions not conforming to the Code. Tonkin Consulting accepts no responsibility for any health or environmental impacts resulting from this design. No allowance has been made in the calculations for the balance of cut and fill in the design of the proposed disposal system.

This report is not intended as a Site Classification report for footing designs, unless stated otherwise.

Please contact Scott Vanderzon or the undersigned on (08) 8273 3100 should you have any queries.

Yours faithfully



TONKIN

D SMITH, MIEAust
Chartered Professional Engineer

Enc Site Features (Fig. 1 & 2)
Soil Logs
Septic Tank Sizing Calculations
Pump Information
Memo – 'Houghton EPA response July22'
Wastewater Disposal Plans and Detail '20155781(G)_Plan2022'



FIGURE 1 – SITE LOCATION PLAN

Above plan sourced from: http://maps.sa.gov.au/plb/ **Accessed: 28 July 2022**

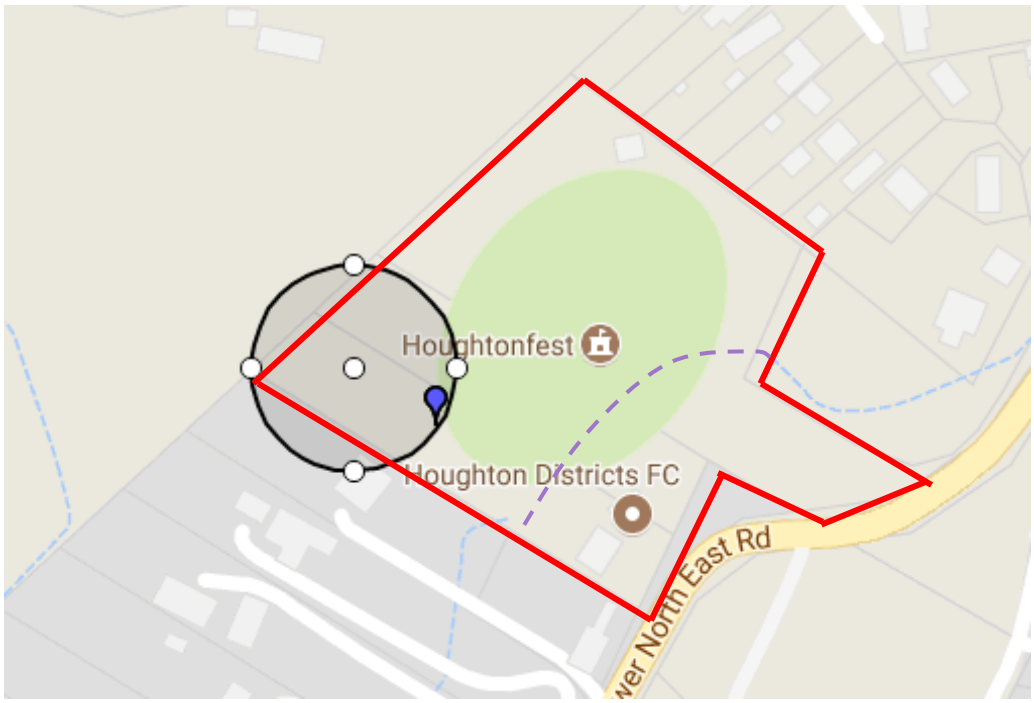


FIGURE 2 –PLAN INDICATING GROUNDWATER BORE AND WATERCOURSE LOCATIONS AROUND THE SITE

Above plan sourced from: https://www.waterconnect.sa.gov.au/ **Accessed: 28 July 2022**

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BOREHOLE NUMBER **BH4A**

CLIENT	Houghton Memorial Oval - Matt Thomas	**NORTHING**	**ELEVATION (mAHD)**
PROJECT	Houghton Memorial Community Oval Geotechnical Investigation	**EASTING**	**TOTAL DEPTH (m BGL)** 0.80
LOCATION	1377 LNE Road, Houghton SA 5131		

				SYMBOL	**SWL (mTOC)**	**DATE**	**NOTES**
STARTED	06/12/2016	**COMPLETED**	06/12/2016	▼			
CONTRACTOR	Geodrill	**LOGGED BY**	SR	▽			
EQUIPMENT	Mechanical Push Tube hand held	**CHECKED BY**	LS	▼			
METHOD	HA	**PERMIT NO.**					

DEPTH (m)	GRAPHIC LOG	USCS CLASS.	MOISTURE	DESCRIPTION AND OBSERVATIONS	SAMPLE	SAMPLE ID	PID (ppm)	DEPTH (m BGL)	WELL CONSTRUCTION
0.1			D	gravelly SILT, brown					
0.2		ML	D	SILT, brown					
0.3				SAND, orange brown - orange and white, very fine - fine grained. Very weathered sandstone at base					
0.4									
0.5		SP	M						
0.6									
0.7									
0.8									
								1.0	
								2.0	

PROJECT NO. 20155781

TONKIN LOG - DEPTH 0.1M INTERVALS 20155781 HOUGHTON.GPJ TONKIN LOG TEMPLATE 20/12/16

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BOREHOLE NUMBER **BH4B**

CLIENT	Houghton Memorial Oval - Matt Thomas	**NORTHING**	**ELEVATION (mAHD)**
PROJECT	Houghton Memorial Community Oval Geotechnical Investigation	**EASTING**	**TOTAL DEPTH (m BGL)** 0.72
LOCATION	1377 LNE Road, Houghton SA 5131		

				SYMBOL	SWL (mTOC)	DATE	NOTES
STARTED	06/12/2016	**COMPLETED**	06/12/2016	▼			
CONTRACTOR	Geodrill	**LOGGED BY**	SR	▽			
EQUIPMENT	Mechanical Push Tube hand held	**CHECKED BY**	LS	▼			
METHOD	HA	**PERMIT NO.**					

DEPTH (m)	GRAPHIC LOG	USCS CLASS.	MOISTURE	DESCRIPTION AND OBSERVATIONS	SAMPLE	SAMPLE ID	PID (ppm)	DEPTH (m BGL)	WELL CONSTRUCTION
0.1			D	gravelly SILT, brown					
0.2		ML	D	SILT, brown					
0.3				SAND, orange brown - orange and white, very fine - fine grained. Very weathered sandstone at base					
0.4									
0.5		SM	M						
0.6									
0.7									
								1.0	
								2.0	

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BOREHOLE NUMBER **BH5**

CLIENT	Houghton Memorial Oval - Matt Thomas	**NORTHING**	**ELEVATION (mAHD)**
PROJECT	Houghton Memorial Community Oval Geotechnical Investigation	**EASTING**	**TOTAL DEPTH (m BGL)** 0.55
LOCATION	1377 LNE Road, Houghton SA 5131		
STARTED	06/12/2016	**COMPLETED**	06/12/2016
CONTRACTOR	Geodrill	**LOGGED BY**	SR
EQUIPMENT	Mechanical Push Tube hand drill	**CHECKED BY**	LS
METHOD	HA	**PERMIT NO.**	

SYMBOL	SWL (mTOC)	DATE	NOTES
▼			
▽			
▼			

DEPTH (m)	GRAPHIC LOG	USCS CLASS.	MOISTURE	DESCRIPTION AND OBSERVATIONS	SAMPLE	SAMPLE ID	PID (ppm)	DEPTH (m BGL)	WELL CONSTRUCTION
0.1			D	gravelly SILT, brown					
0.2		ML	D	SILT, brown					
0.3									
0.4		SP	M	SAND, orange brown - orange and white, very fine - fine grained. Very weathered sandstone at base					
0.5									
								1.0	
								2.0	

TONKIN LOG - DEPTH 0.1M INTERVALS 20155781 HOUGHTON.GPJ TONKIN LOG TEMPLATE 20/12/16

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BOREHOLE NUMBER **BH6**

CLIENT	Houghton Memorial Oval - Matt Thomas	**NORTHING**	**ELEVATION (mAHD)**
PROJECT	Houghton Memorial Community Oval Geotechnical Investigation	**EASTING**	**TOTAL DEPTH (m BGL)** 1.71
LOCATION	1377 LNE Road, Houghton SA 5131		

				SYMBOL	SWL (mTOC)	DATE	NOTES
STARTED	06/12/2016	**COMPLETED**	06/12/2016	▼			
CONTRACTOR	Geodrill	**LOGGED BY**	SR	▽			
EQUIPMENT	Mechanical Push Tube hand held	**CHECKED BY**	LS	▼			
METHOD	HA	**PERMIT NO.**					

DEPTH (m)	GRAPHIC LOG	USCS CLASS.	MOISTURE	DESCRIPTION AND OBSERVATIONS	SAMPLE	SAMPLE ID	PID (ppm)	DEPTH (m BGL)	WELL CONSTRUCTION
0.1			D	gravelly SILT, brown					
0.2									
0.3									
0.4									
0.5				silty SAND, red brown - orange, fine grained					
0.6		SM	D						
0.7				silty SAND, red and white, fine grained					
0.8									
0.9									
1.0		SM	D					1.0	
1.1									
1.2									
1.3									
1.4				clayey SAND, orange					
1.5		SC	D						
1.6		SP	M	SAND, orange brown - orange and white, fine grained. Very weathered sandstone					
1.7									
								2.0	

PROJECT NO. 20155781

TONKIN LOG - DEPTH 0.1M INTERVALS 20155781 HOUGHTON.GPJ TONKIN LOG TEMPLATE 20/12/16

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BOREHOLE NUMBER **BH7**

CLIENT	Houghton Memorial Oval - Matt Thomas	**NORTHING**	**ELEVATION (mAHD)**
PROJECT	Houghton Memorial Community Oval Geotechnical Investigation	**EASTING**	**TOTAL DEPTH (m BGL)** 0.65
LOCATION	1377 LNE Road, Houghton SA 5131		
STARTED	06/12/2016	**COMPLETED**	06/12/2016
CONTRACTOR	Geodrill	**LOGGED BY**	SR
EQUIPMENT	Mechanical Push Tube hand held	**CHECKED BY**	LS
METHOD	HA	**PERMIT NO.**	

SYMBOL	SWL (mTOC)	DATE	NOTES
▼			
▽			
▼			

DEPTH (m)	GRAPHIC LOG	USCS CLASS.	MOISTURE	DESCRIPTION AND OBSERVATIONS	SAMPLE	SAMPLE ID	PID (ppm)	DEPTH (m BGL)	WELL CONSTRUCTION
0.1		ML	D	SILT, dark brown					
0.2									
0.3				SILT, pale brown - brown					
0.4		ML	D						
0.5									
0.6		SP	M	SAND, orange brown - orange and white, fine grained. Very weathered sandstone				1.0	
								2.0	

PROJECT NO. 20155781

TONKIN LOG - DEPTH 0.1M INTERVALS 20155781 HOUGHTON.GPJ TONKIN LOG TEMPLATE 20/12/16

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BOREHOLE NUMBER **BH8**

CLIENT	Houghton Memorial Oval - Matt Thomas	**NORTHING**	**ELEVATION (mAHD)**
PROJECT	Houghton Memorial Community Oval Geotechnical Investigation	**EASTING**	**TOTAL DEPTH (m BGL)** 2.50
LOCATION	1377 LNE Road, Houghton SA 5131		
STARTED	06/12/2016	**COMPLETED**	06/12/2016
CONTRACTOR	Geodrill	**LOGGED BY**	SR
EQUIPMENT	EZ Probe (4WD mounted)	**CHECKED BY**	LS
METHOD	DT	**PERMIT NO.**	

SYMBOL	SWL (mTOC)	DATE	NOTES
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▼			

DEPTH (m)	GRAPHIC LOG	USCS CLASS.	MOISTURE	DESCRIPTION AND OBSERVATIONS	SAMPLE	SAMPLE ID	PID (ppm)	DEPTH (m BGL)	WELL CONSTRUCTION
0.1			D	gravelly SILT, brown, top soil					
0.2			D	gravelly SILT, brown - orange					
0.3				silty clayey SAND, orange and white, very fine grained					
0.4									
0.5		SM	D						
0.6									
0.7									
0.8				SAND, orange, fine grained, grades to white with depth. Mottled orange and white towards base					
0.9									
1.0								1.0	
1.1									
1.2									
1.3									
1.4		SP	M						
1.5									
1.6									
1.7									
1.8									
1.9									
2.0				SAND, orange and white, with sandstone fragments, very weathered sandstone, limonite staining				2.0	
2.1									
2.2									
2.3		SP	M						
2.4									
2.5									

PROJECT NO. 20155781

TONKIN LOG - DEPTH 0.1M INTERVALS 20155781 HOUGHTON.GPJ TONKIN LOG TEMPLATE 20/12/16

SEPTIC TANK SIZING CALCULATIONS

CLIENT:	HOUGHTON MEMORIAL OVAL
PROJECT:	NEW EFFLUENT DISPOSAL - FORTNIGHTLY PLAYER AND OFFICIAL USE
TONKIN PROJECT NUMBER:	2015.5781

REFERENCE: SA DEPARTMENT OF HEALTH "ON SITE WASTEWATER SYSTEMS CODE", SECTION 5.2.3, EQUATION 1

MINIMUM EFFECTIVE SEPTIC TANK CAPACITY (L) = (P1 x S x Y) + (P2 x DF)
MINIMUM EFFECTIVE PUMP TANK CAPACITY (L) = 1.5 x P2

P1 = NUMBER OF PERSONS USING THE SYSTEM (for sludge calculation) (Typically average daily number over a 7 day period, refer Code including Appendix F)
S = RATE OF SLUDGE / SCUM ACCUMULATION (in Litres/Person/Year) (Table 5-3 or Appendix F)
Y = DESLUDGING FREQUENCY (Years) (Typically 4, unless reduced frequency can apply - refer Authority or Code Table 5-4)
P2 = NUMBER OF PERSONS USING THE SYSTEM (for flow calculation) (Typically highest daily number over a 7 day period, refer Code including Appendix F)
DF = DAILY EFFLUENT FLOW (in Litres/Person/Year) (Table 5-3 or Appendix F)

	ITEM / FACILITY DESCRIPTION	P1	S	P2	DF	REFERENCE
1	Function capacity, average twice per week (Friday/Saturday)	57.1	10	200	15	DH Code, Appendix F, "Clubs Restaurant / Meals Area"
2	Function Staff	2.9	25	10	40	DH Code, Appendix F, "Clubs Staff"
3	Player and Official Use (game day)	7.1	25	100	40	DH Code, Appendix F, "Sports Centres"
4	Spectator Use (game day)	14.3	5	200	10	DH Code, Appendix F, "Licensed Area Bar Trade"
5	Team Training (two teams, twice per week)	14.3	10	100	5	DH Code, Appendix F, "Public Toilets"
6	Bar trade with team training (twice per week)	7.1	10	50	10	DH Code, Appendix F, "Licensed Area Bar Trade"

ANNUAL SLUDGE INFLOW	1107	Litres		(Sum of P1 x S for each Item / Facility)
DAILY PEAK EFFLUENT INFLOW	9400	Litres		(Sum of P2 x DF for each Item / Facility)
AVERAGE DAILY EFFLUENT INFLOW	1543	Litres		(Sum of P1 x DF for each Item / Facility)
DESLUDGING FREQUENCY (Y)	4	Years	**Reference**	DH Code, Table 5-4
MINIMUM EFFECTIVE SEPTIC TANK SIZE REQUIRED	13900	Litres		(Annual Sludge Inflow x Y + Daily Peak Effluent Inflow)
MINIMUM EFFECTIVE PUMP TANK SIZE REQUIRED	14100	Litres		

D42A/B and D53A/B Sump Pumps

OPERATING LIMITS		
Type	**D42A/B**	**D53A/B**
Capacities to	120 lpm	130 lpm
Maximum total head	32m	45m
Maximum submergence	12m	
Maximum pumped water temperature	40ºC	
Maximum soft solids	1.9mm O.D.	
Outlet size (BSP)	1" F	

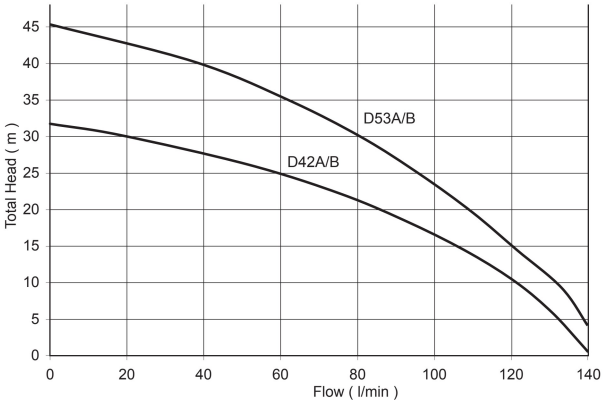
SUITABLE FLUIDS

Clean water of neutral pH containing up to 1% small solids. Some wear should be expected while pumping hard solids in suspension.

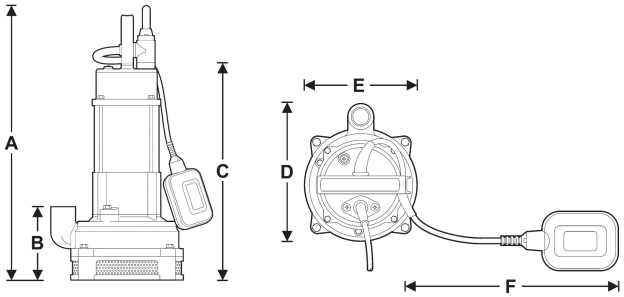
MATERIALS OF CONSTRUCTION	
Part	**Material**
Impeller	Glass filled polycarbonate
Lock nut	304 stainless steel
Pump casing	Glass filled polycarbonate
Diffuser and blanking ring	Glass filled noryl
Mechanical seal – pump	Carbon/ceramic
Mechanical seal – motor	Silicon carbide / ceramic oil in bath
Shaft seal elastomer	Nitrile rubber
Pump shaft	304 stainless steel
O-rings	Nitrile rubber
Motor shell	304 stainless steel
Bottom bearing housing	Cast 316 stainless steel
Upper motor cover	Cast 316 stainless steel
Handle	304 stainless steel
Fasteners	304 stainless steel
Float and power supply leads	HO7RN-F oil resistant

ELECTRICAL DATA		
Type	**D42A/B**	**D53A/B**
Supply voltage	220-240V	
Supply frequency	50Hz single phase	
Speed	2 pole, 2850rpm	
Full load current	4.3A	5.7A
Locked rotor current	14A	
Input power (P_1)	1.00kW	1.31kW
Output power (P_2)	0.60kW	0.84kW
IP rating	X8	
Insulation class	Class F	
Starting	P.S.C.	
Lead	10m long	

HYDRAULIC PERFORMANCE



DIMENSIONS (mm)



Type	A	B	C	D	E	F	Outlet B.S.P.	Net Weight (kg)
D42A/B	475	130	370	235	195	330	1"F	12.6
D53A/B	535	170	430	235	195	330	1"F	16.5

INSTALLATION & PRIMING

Use a rope to position and retrieve the pump. Do not lower or retrieve the pump using the power lead as this may damage the cable entry seals, causing water leaks and unsafe operation.

Do not use this product for recirculating or filtering swimming pools, spas, etc. While these pumps are built to high safety standards, they are not approved for installations where people will be in the water while they are operating.

Do not pump abrasive materials. Sand and grit in the water being pumped will accelerate wear, causing shortened pump life.

Keep your pump clean, particularly in situations where lint, hair or fibrous materials may get bound around the pump shaft. Regular inspection and cleaning will extend pump life.

Make room for the float switch to operate. Automatic models have a float switch to turn them on when the water level rises and turn them off again when it has been pumped down to the safe operating level of the pump. If the float switch is not free to rise and fall, correct pump operation may not be possible.

Do not run your pump dry. Non-automatic models must be switched off manually or by way of an external float/level switch when the water level is reduced to the top of the pump housing.

HNO & MFG SCORESBY Certified System Quality ISO 9001

HNO & MFG SCORESBY Certified System Environment ISO 14001

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DWP0327-1/1114

Building exceptional outcomes together

Memorandum

To	EPA		
From	Tonkin	**Date**	5 July 2022
Subject	Houghton Oval Wastewater Disposal – Nutrient Balance		

Nutrient Balance

Nutrients applied in wastewater are typically organic forms which are slowly released for plant uptake as microorganisms breakdown the organic matter. To limit leaching of nutrients in a system which potentially irrigates all year round, perennial plants need to be planted to utilise nutrients throughout the year and limit the potential for leaching.

Lucerne is a temperate, perennial legume capable of producing high quality forage throughout the year. In southern states, the lucerne growing season can be greater than eight months and different varieties are more active in summer or can be more active in winter. For Houghton Oval, a winter active variety is recommended to maximise nutrient use during winter when rainfall may result in a higher potential for leaching. Data for lucerne have been sourced from S&W Seed Company "Emerge" Lucerne Update 2021.

The nutrient balance for the treatment system has been based on the following:

- Wastewater volume based on maximum flow: 1.7 kL/day
- Wastewater concentrations based on maximum concentration likely (note the inclusion of the Ozzikleen secondary treatment system, downstream of septic and holding tanks)
  - Total N: 10 mg/L
  - Total P: 5 mg/L
- Wisconsin mound area: 385 m^2
- Crop: Winter-active Lucerne
- Crop Yield: 15 t DM/ha
- Nutrient Removal
  - Total N: 375 kg/15 t DM
  - Total P: 37 kg/15 t DM

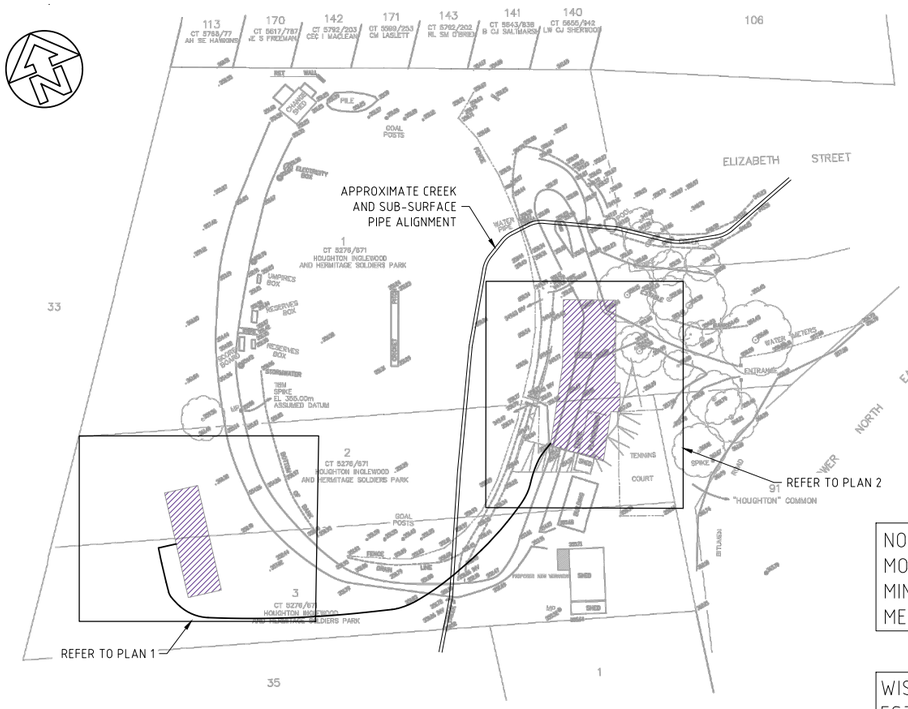
The inputs are considered to be conservative as:

- The water and nutrients applied are overestimated
- The lucerne yields are likely to be higher with more frequent mowing and slashing expected to result in higher yields.

Based on these inputs, it is expected that nitrogen is likely to be deficient and that approximately 50%of applied phosphorus will be taken up by plants (Table 1). The excess phosphorus will require over 34 years to increase the soil concentration of the top 1 m by 100 mg/kg. Over time, much of this phosphorus will be complexed with iron, aluminium or calcium into slowly released and unavailable forms and is not expected to leach.

Table 1 Nutrient Balance in Mound

	Nitrogen Balance	Phosphorus Balance
Applied in Wastewater (kg/yr)	6.2	3.1
Removed by Plants (kg/yr)	14.4	1.4
Site Life		> 34 years

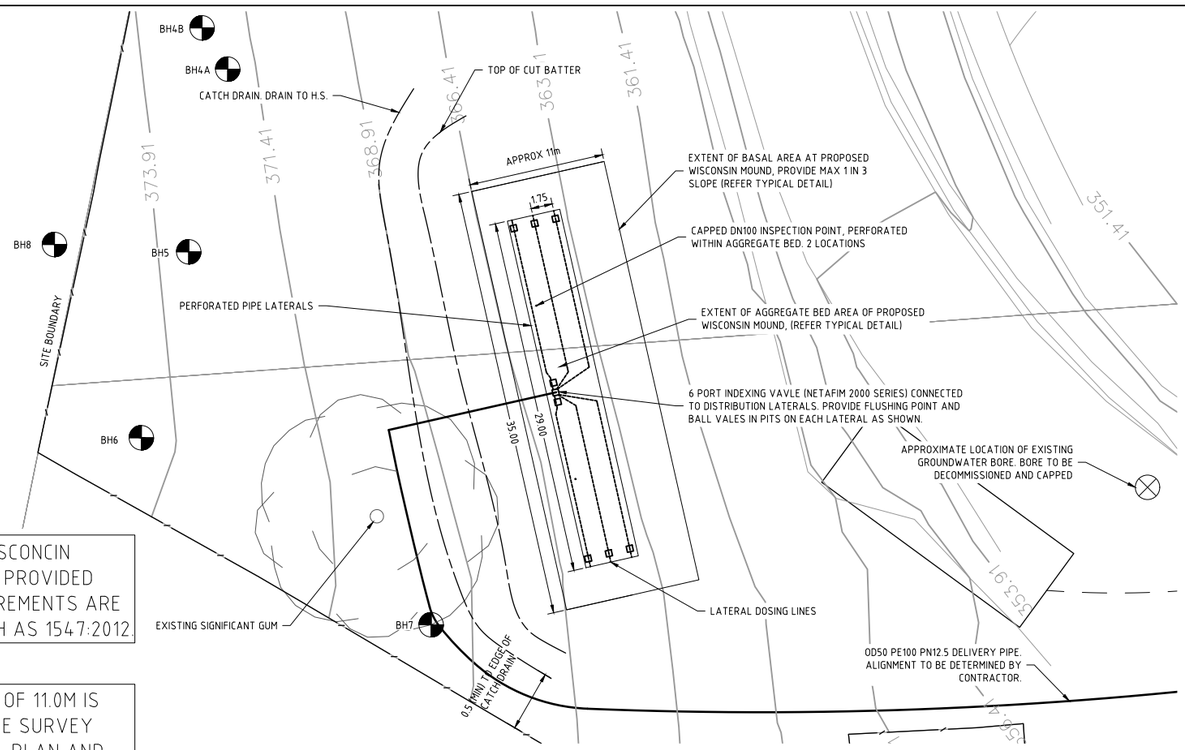


LOCALITY PLAN

SCALE 1:1000

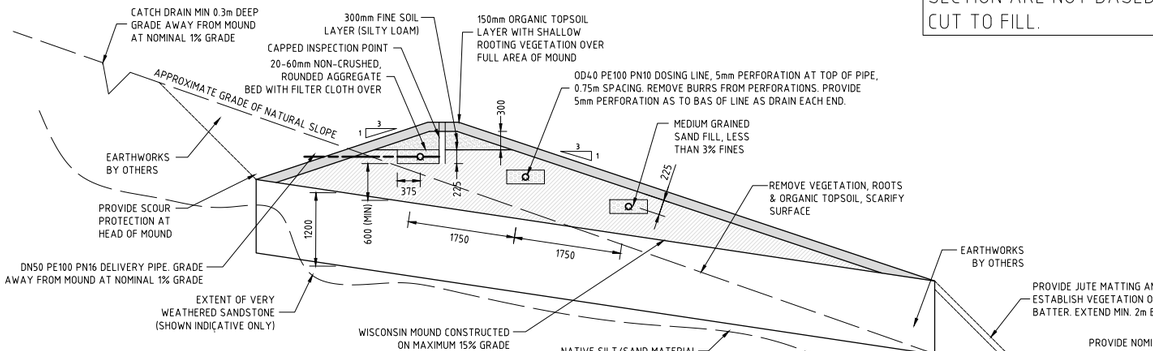
NOTE: POSITIONING OF WISCONCIN MOUND MAY BE ALTERED PROVIDED MINIMUM SETBACK REQUIREMENTS ARE MET IN ACCORDANCE WITH AS 1547:2012.

WISCONSIN MOUND WIDTH OF 11.0M IS ESTIMATED BASED ON SITE SURVEY AND FINAL GRADE OF 15%. PLAN AND SECTION ARE NOT BASED ON BALANCED CUT TO FILL.



PLAN 1-WISCONSIN MOUND INDICATIVE LAYOUT

SCALE 1:250

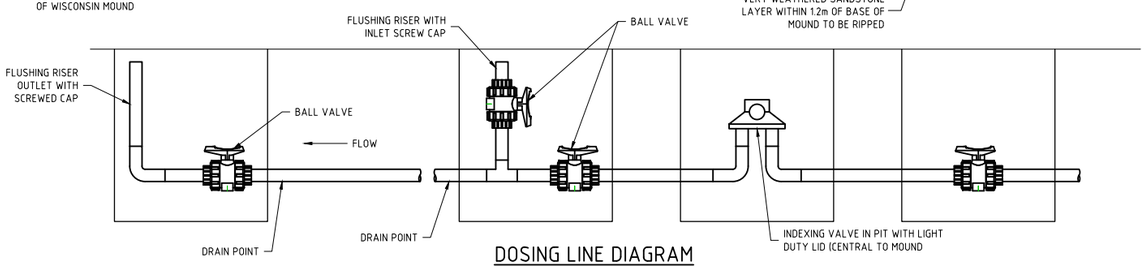


NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF AS 1547:2012 APPENDIX N
2. EARTHWORKS EXTENTS SHOWN ARE INDICATIVE ONLY. ALL EARTHWORKS TO BE CONDUCTED BY OTHERS.
3. CONTRACTOR TO ENSURE MAX 15% GRADE AT FOOTPRINT OF WISCONSIN MOUND

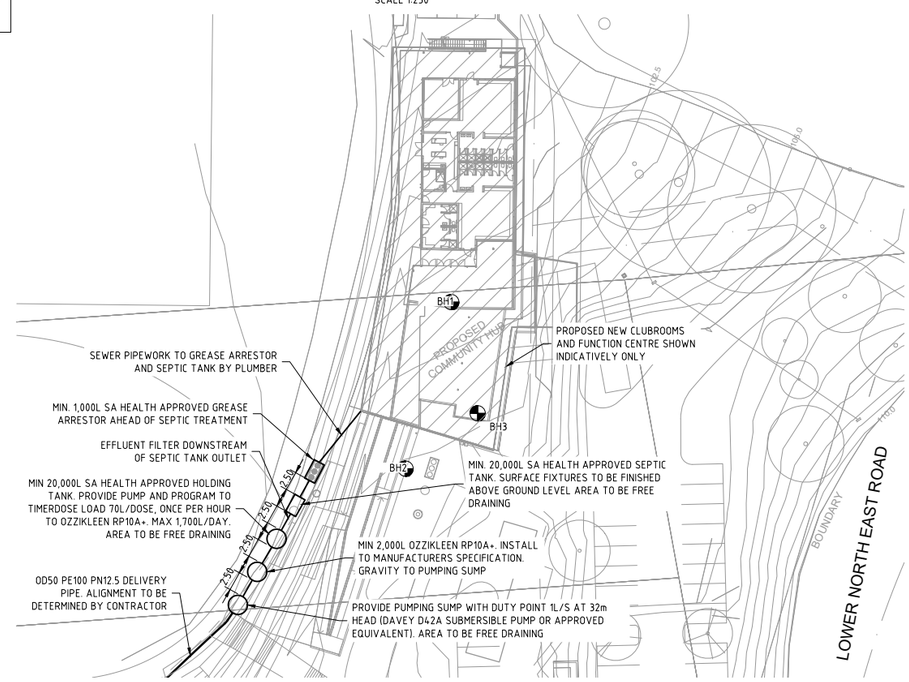
WISCONSIN MOUND TYPICAL SECTION

SCALE 1:50



DOSING LINE DIAGRAM

SCALE 1:10



PLAN 2-TANK & PIPEWORK

SCALE 1:400

PRELIMINARY

REV	AMENDMENT / REASON FOR ISSUE	DATE	DES.	DWN.	DWGCHK.	VERIFIED	APPROVED
7	REVISED LAYOUT OF TANKS	05.07.22	SV	JW	-	-	SV
6	UPDATED BUILDING LAYOUT	01.07.22	SV	JW	-	-	SV
5	ADDED NUTRIENT REMOVAL	30.06.22	SV	JW	-	-	SV
4	ADDED BATTER SLOPES AND REVISED TANK / SEPTIC VOLUME	07.12.21	S.V.	J.W.	-	-	-
3	REVISED TANK CAPACITIES	04.09.19	JNB	JNB	DS	DS	DS
2	REVISED TANK LOCATIONS AND PIPEWORK ALIGNMENT	16.07.19	JNB	JNB	DS	DS	DS
1	ISSUED FOR CLIENT COMENT	26.04.18	JNB	JNB	DS	DS	DS

0 2.5 5 10 15
1:250 (A1); 1:500 (A3)

0 4 8 16 24
1:400 (A1); 1:800 (A3)

PUBLIC UTILITIES:

THE SERVICES SHOWN ARE DERIVED FROM PLANS OBTAINED FROM THE RELEVANT SERVICE AUTHORITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE WITH THE RELEVANT SERVICE AUTHORITIES FOR CONFIRMATION OF SERVICES AND THEIR LOCATION BEFORE EXCAVATION WORK COMMENCES.

100mm ON ORIGINAL DRAWING - DO NOT SCALE DRAWING

tonkin

tonkin.com.au

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SHEET SIZE A1

SCALE: 1:250

ORIGINAL SURVEY BY XXXX

SURVEY DATE: XXXX

COORDS & DATUM COORDS TO (MGA94) ALL LEVELS TO A.H.D.

MATT THOMAS

ONSITE WASTEWATER SYSTEM DESIGN
HOUGHTON MEMORIAL OVAL
PLANS AND TYPICAL DETAIL

FILENAME:	JOB NUMBER	SHEET NUMBER	REVISION
20155781(E)_2022.DWG	20155781	S01	7

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N:\PROJECT ARCHIVE\2015\20155781 HOUGHTON MEMORIAL OVAL - MR MATT THOMAS\3_DEVELOPMENT\1 ACAD\20155781(E)_2022.DWG [PLAN] July 5, 2022 15:56PM

Building exceptional outcomes together

Houghton Memorial Community Oval - Wastewater

To	EPA		
From	Tonkin	**Date**	6 December 2021
Subject	EPA Letter Reference PDI102 Wastewater Response Memo		

This memorandum provides additional information and context to the Wastewater Management 20155781L003A Report dated 27 April 2018 relating to the proposed onsite wastewater treatment system for the Houghton Memorial Community Centre as a response to EPA Letter Reference PDI102 Wastewater scope.

1. *EPA Comment #1 - The sizing of the septic has been provided based on a fortnightly cycle, however it is not clear if this applies all year round or to the winter months during the football season.*

Response: The Holding Tank and Wisconsin Mound Flow is based upon the estimated peak effluent inflow. This has been determined based on discussions with the proponent which includes the following:

- Concurrent 200 person functions over two days (e.g. Friday and Saturday night). The proponent has estimated that no more than 50 functions will be held per year, however we have allowed for two functions per week, i.e. four functions over a fortnightly period;
- Allowance for two football games on one Saturday (players, spectators and officials) inclusive of shower use, followed by no games the following weekend;
- Two training nights per week, inclusive of bar trade.

Loadings for football season have been adopted, given the higher numbers of site users (i.e. players and spectators) during the football season and more likely higher use of other wastewater fixtures such as showers.

Calculations for sizing of the septic tank assume that this pattern is applied year-round and hence is conservative. Septic tank wastewater and sludge flows arising from the new facilities have been estimated using Appendix E of the SA Health 'Onsite Wastewater Systems Code'.

Whilst the calculations submitted to SA Health as part of the approval submission determined a minimum septic tank volume of 13,900 litres, the SA Health approval stipulates a septic tank size of 20,000 litres. This is in line with the next standard size from a leading locally based septic tank manufacturer. Similarly, the approval submission was based on a 14,100 litre holding tank, with the SA Health approval nominating a 20,000 litre holding tank.

It is noted that the expected average flow to the Wisconsin Mound over a peak period is approximately equivalent to the daily design flow for two residential households, with the holding tank buffering flows from events at the Community Centre to provide an even daily flow to the Wisconsin mound.

2. *EPA Comment #2 – Irrigation of the oval is not recommended due to the creek that is piped beneath the oval in stormwater pipes of unknown condition and therefore is subject to ingress of other water applied to the oval.*

Response: The wastewater disposal design has adopted a Wisconsin mound in order to negate the need to dispose treated effluent via oval irrigation. No irrigation is proposed for the oval.

3. *EPA Comment #3 – There is at least one bore located on the boundary of 50m setback and decommissioning of the bore is recommended. However, the depth to groundwater is not indicated nor is there a firm commitment to decommission the bore or other nearby bores.*

No groundwater was encountered during geotechnical investigations adjacent the proposed Wisconsin mound site (six boreholes drilled in 2016, up to a maximum depth of 2.5m). These bores are approximately 40-50m from the proposed site. According to NatureMaps, Bores 6628054-29, -30 and -31, distance to water is approximately 1.8m to 3.05m from the surface. It is noted that these 3 bores are noted at the same location. It appears that theses bore is old (Drilled 24/5/1946 per Naturemaps) and such the water level may not have been updated recently.

The Principal will be required to develop a methodology to decommission these bores as a part of the construction of the Wisconsin mound. The approximate location of the existing bore and noted 'for decommission' has been included on the design drawing.

4. *EPA Comment #4 – The Wisconsin mound is expected to be constructed on an impermeable rock surface. Hence there is no infiltration from the Wisconsin mound to surrounding subsoil. No contingencies have been outlined should this become saturated, particularly in higher rainfall months.*

Response: The design of the Wisconsin mound has been updated to include a cutoff drain and suitable erosion measures located on the up-hill side of the mound, such that any surface runoff is directed away from the mound. The mound also has 1 in 3 surface slopes to encourage runoff of rainfall directly landing on the mound. The mound is also specified to be planted with shallow rooted vegetation to improve evapotranspiration off the mound.

Follow-up consultation with the geotechnical engineer for the site has confirmed that the underlying sandstone is very weathered and is likely to perform as a soil with a degree of permeability. Boreholes show that the surface of the very weathered sandstone layer varies. Furthermore, in order to ensure that appropriate infiltration occurs at the site, the updated design drawing nominates that the existing surface over the footprint of the new Wisconsin Mound is to be ripped to a minimum depth of 1.2m below the base level of the mound. This depth is consistent with the minimum depth required to "bedrock" of 1.2m as stipulated for soakage systems in the SA Health "On-site Wastewater Systems Code".

The design sizing of the mound (above the area to be ripped) is in accordance with AS1547 for disposal of the expected inflow in accordance with the design parameters. The mound is to be constructed in strict accordance with AS1547 requirements.

It is noted that AS1547 does not directly stipulate rainfall runoff as a part of design calculations.

The updated drawing includes inspection points to allow for observation of any ponding in the aggregate distribution layer.

In the case that the mound were to become saturated, the mound can be disconnected from receiving flows and waste tankered from the holding tank until such time as the site has sufficiently dried.

The SA Health approval nominates a 20kL holding tank for the site, which has sufficient capacity for two weeks' inflow, based on the average loading over this period of one match day, two functions and assumed full training schedules. This will enable the community centre to continue

operation in case of outage of the Wisconsin mound, by allowing regular pump-outs of the holding tank if required. The responsibility for monitoring the system will be with the Houghton Memorial Community Centre nominated operators.

As previously stated, in addition to the above, the completed mound is to be vegetated to assist with evapotranspiration.

5. *EPA Comment #5 – The system is to include a pump and timer to ensure discharge not to exceed 1700l/day, however no responsibilities or alarm system are outlined should this system fail.*

The owners of the system (Houghton Memorial Community Centre) are responsible for the system. It will be recommended that operators develop and implement an Operational and Management Plan in order to ensure that responsibilities for faults are promptly attended to and resolved as required.

Under SA Health requirements specified in the *On-site Wastewater Systems Code*, the system is to include an audible and visual alarm in a conspicuous location to alert personnel of a fault. Any management procedure is to include an appropriate mitigating responses, which could include attendance by a local plumber and/or electrician. Where an issue cannot be easily resolved, a further response such as ensuring that all wastewater from the site is tankered away by a licensed operator for alternative disposal until such time as the system function is restored can potentially be documented.

Although not a specific requirement under the SA Health approval, the SA Health Code allows for the approving authority to stipulate the provision of a second, identical pump in a duty-standby arrangement in case of a pump failure. This is considered an appropriate management measure for a facility of this nature. Failure of the duty pump will trigger an alarm.

The level of detail and sophistication of any management or monitoring and contingency action plan van be tailored to suit the risk profile of the installation. We would recommend to the operators that such plans be developed as discussed further below.

With reference to Item 2 as per Letter Reference PDI102, please find below the following information:

Nominated Effluent Percolation Rate (EPR) – 4.5 L/m2/d – Peak basal application rate consistent with historical irrigation rates discussed in the SA Health On-site Wastewater Systems Code.

Design Loading Rate (DLR) on Wisconsin Mound – 32 mm/d – Category 1 - Sand Fill Media

Septic Tank Sizing –20kL Capacity Septic Tank and 20kL Holding Tank, Desludging every 4 years, in accordance with SA Health approval requirements

Wet weather design – See Dot Point 4 above

- *Outline the responsibilities for management of the system*

The operators of the Houghton Community Centre will be responsible for the management of the system. We recommend that appropriate documentation be developed to provide assistance and direction for this, along with record keeping. Responsibilities can be outlined in an Operational and Management Plan for the system in accordance with this memo, and can include but not necessarily be limited to:

- Nominated Person(s) Responsible and contact details, both during and outside of work hours
- Routine inspections regime
- Response to alarms method
- Contact detail of licensed Plumber and Electrician
- Contact of Waste Pumping Contractor for tankering of waste during system faults
- An outline of monitoring, inspection and contingency measures e.g. effluent volume monitoring, pump failure, Wisconsin mound monitoring and inspection

Refer to Dot Point 5 above for outline of responsibilities and contingency planning.

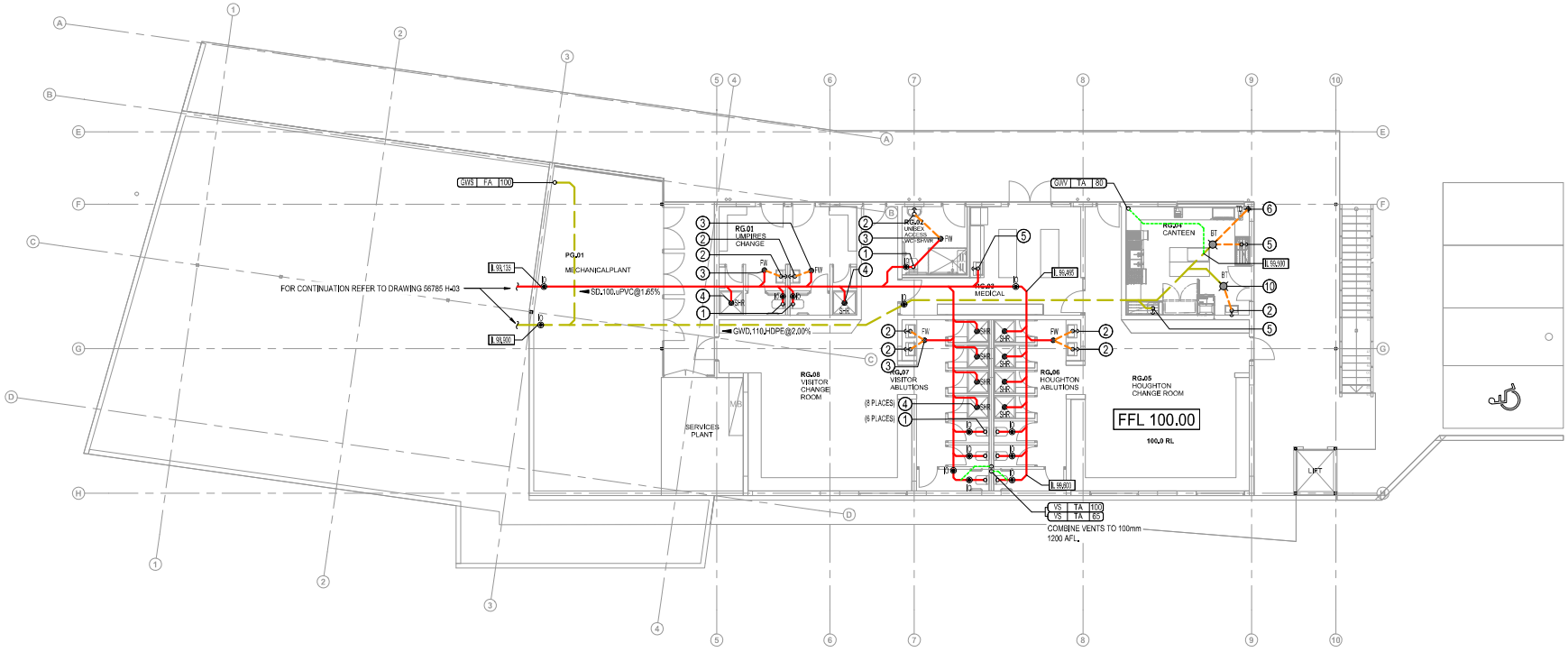
- *All bunding details for all wastewater component infrastructure*

Surface features of the new wastewater septic tank and holding tank are to be finished above surrounding ground level and to be free draining.

It is not recommended that bunding be provided to the septic tank or holding tank, as stormwater detained by the bund will require additional management by the operator and potentially lead to infiltration to the septic tank or holding tank, resulting in higher loading rates on the Wisconsin mound.

ABBREVIATED NOTES DRAINAGE:

1. SD.TB.100 OFF WC PAN.
2. WD.TB.40 + 40 T&W TO BASIN.
3. 80x65 TRAP AS FLOOR WASTE.
4. 80x65 TRAP AS WASTE TO SHOWER.
5. SD.TB.50/65 + 50 T&W TO SINK.
6. 100X80 CONE + 80X65 TRAP AS TUNDISH.
7. 225X100 BUCKET TRAP + 100X100 TRAP.
8. GULLY
9. WD.TB.50 + 50 T&W TO DISHWASHER(COMMERCIAL).
10. 225X100 BUCKET TRAP + 100X100 TRAP.



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Issue	Amendments	Date	Init.
01	PRELIMINARY ISSUE	08.04.21	EKW

North

Architect

Phillips/Pilkington Architects

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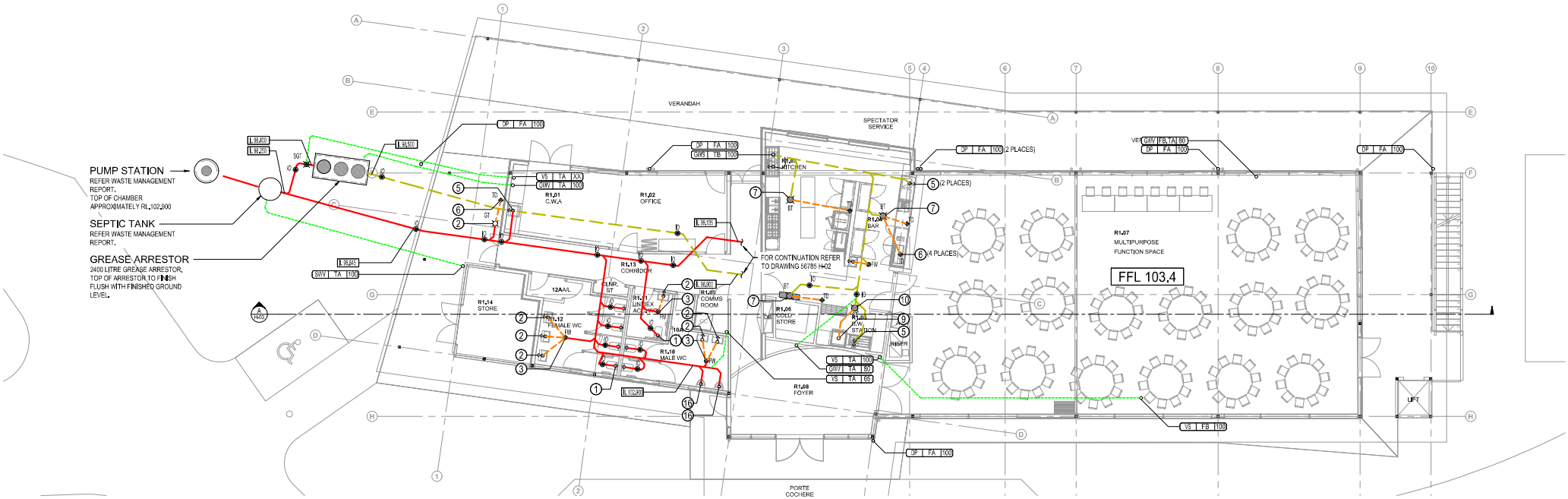
BESTEC
DOCUMENT ISSUE
Date
8–Apr–21
BESTEC
ABN 43 909 272 047
BUILDING ENGINEERING
SERVICES TECHNOLOGIES
CONSULTING ENGINEERS

PRELIMINARY

Project: HOUGHTON SOLDIERS MEMORIAL PARK	Drawn: EKW	Checked:	Date: APRIL 2021
Title: HYDRAULIC SERVICES	Designed: VTR	Checked:	Scale: 1:100 @A1
GROUND FLOOR - PLUMBING DRAINAGE	Project Number: 56785	Drawing Number: H-02 2 7	Issue: 01

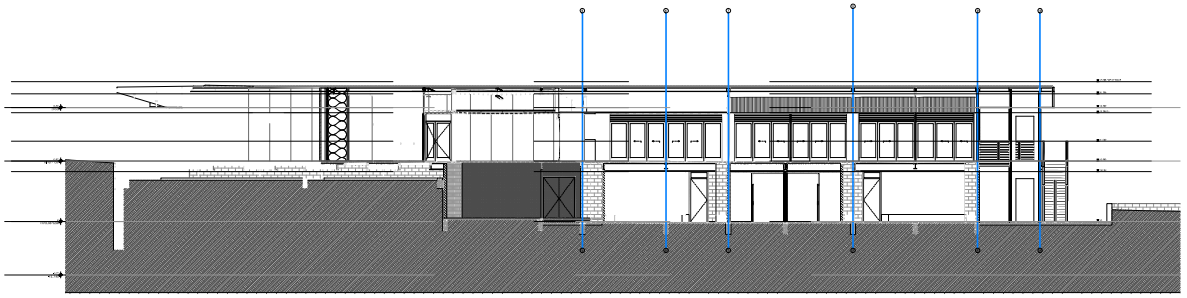
ABBREVIATED NOTES DRAINAGE:

1. SD,TB,100 OFF WC PAN.
2. WD,TB,40 + 40 T&W TO BASIN.
3. 80x65 TRAP AS FLOOR WASTE.
4. 80x65 TRAP AS WASTE TO SHOWER.
5. SD,TB,50/65 + 50 T&W TO SINK.
6. 100X80 CONE + 80X65 TRAP AS TUNDISH.
7. 225X100 BUCKET TRAP + 100X100 TRAP.
8. GULLY
9. WD,TB,50 + 50 T&W TO DISHWASHER(COMMERCIAL).
10. 225X100 BUCKET TRAP + 100X100 TRAP.



PLUMBING DRAINAGE

SCALE 1:100



SECTION VIEW A

SCALE: NTS

Issue	Amendments	Date	Init.
01	PRELIMINARY ISSUE	08.04.21	EKW

North

Architect

Phillips/Pilkington Architects

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BESTEC
DOCUMENT ISSUE
Date
8–Apr–21
BESTEC
ABN 43 909 272 047
BUILDING ENGINEERING
SERVICES TECHNOLOGIES
CONSULTING ENGINEERS

PRELIMINARY

Project: HOUGHTON SOLDIERS MEMORIAL PARK	Drawn: EKW	Checked:	Date: APRIL 2021
Title: HYDRAULIC SERVICES	Designed: VTR	Checked:	Scale: 1:100 @A1
FIRST FLOOR - PLUMBING DRAINAGE	Project Number: 56785	Drawing Number: H-03 3 7	Issue: 01

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HYDRAULIC SERVICES LEGEND OF STANDARD SYMBOLS

DRAINAGE PIPEWORK

- SD,(SIZE),(MATERIAL),(GRADE) — SD - SANITARY DRAINAGE
- WD,(SIZE),(MATERIAL),(GRADE) — WD - WASTE DRAINAGE
- GWD,(SIZE),(MATERIAL),(GRADE) — GWD - GREASE WASTE DRAINAGE
- TWD,(SIZE),(MATERIAL),(GRADE) — TWD - TRADE WASTE DRAINAGE
- SWD,(SIZE),(MATERIAL),(GRADE) — SWD - STORMWATER DRAINAGE
- PLS,(SIZE),(MATERIAL),(GRADE) — P - PUMP OUT LINE (RISING MAIN); PLS - PUMP LINE SEWER; PLSW - PUMP LINE STORMWATER
- VENT,(SIZE),(MATERIAL),(GRADE) — VENT PIPE
- EPLS,(SIZE),(MATERIAL),(GRADE) — EP - EXISTING PUMP OUT LINE (RISING MAIN); EPLS - EXISTING SEWER; EPLSW - EXISTING STORMWATER
- REDUNDANT SERVICE

RETICULATION PIPEWORK

- DCW,(SIZE),(MATERIAL) — DCW - COLD WATER RETICULATION
- DHW,(SIZE),(MATERIAL) — DHW - HOT WATER RETICULATION
- DHWF,(SIZE),(MATERIAL) — DHWF - HOT WATER FLOW RETICULATION
- DHWR,(SIZE),(MATERIAL) — DHWR - HOT WATER RETURN RETICULATION
- THW,(SIZE),(MATERIAL) — THW - TEMPERED HOT WATER (OFF TMV FITTING)
- GAS,(SIZE),(MATERIAL) — GAS - LPG GAS RETICULATION
- IRR,(SIZE),(MATERIAL) — IRR - IRRIGATION SUPPLY (LANDSCAPE/WATERING)
- ECW,(SIZE),(MATERIAL) — ECW - EXISTING COLD WATER RETICULATION
- EHW,(SIZE),(MATERIAL) — EHW - EXISTING HOT WATER RETICULATION
- EHWF,(SIZE),(MATERIAL) — EHWF - EXISTING HOT WATER FLOW RETICULATION
- EHWR,(SIZE),(MATERIAL) — EHWR - EXISTING HOT WATER RETURN RETICULATION

DRAINAGE SYMBOLS

- PIPE INVERT LEVEL
- SA WATER SEWER CONNECTION
- SEWER INSPECTION CHAMBER
- REFLUX VALVE IN VALVE PIT
- INSPECTION OPENING
- GULLY TRAP
- GULLY TRAP WITH FLOOD PROVISIONS
- SEALED GULLY TRAP
- BUCKET TRAP
- SOAKAGE PIT
- 50mm FLOOR WASTE GULLY
- BALCONY DRAIN
- 100x100 FLOOR WASTE GULLY
- SEALED FLOOR WASTE
- COPPER BOX
- REDUNDANT FLOOR PENETRATION
- CONE TUNDISH
- IN WALL TUNDISH
- TRAP & WASTE
- TRAP & WASTE TO BE REMOVED
- AIR ADMITTANCE VALVE
- P-TRAP DRY WC FAN
- 20mm PUMPED DISCHARGE FROM DISHWASHER CONNECTED TO SINK WASTE RISER ABOVE WATER SEAL
- 20mm PUMPED DISCHARGE FROM WASHING MACHINE CONNECTED TO LAUNDRY TROUGH WASTE RISER ABOVE WATER SEAL
- ACCESS GATE
- ROOF PENETRATION
- DOWNPIPE SPREADER
- SUMP
- CONTROL PANEL
- GREASE ARRESTOR - 2400 LITRE
- PUMP CHAMBER (SEWER EJECTOR PIT)
- GRATED TRENCH DRAIN

RETICULATION SYMBOLS

- ISOLATION VALVE
- ISOLATION VALVE IN VALVE BOX
- CHECK VALVE
- DOUBLE CHECK VALVE
- DOUBLE CHECK VALVE IN VALVE BOX
- IRRIGATION TAKE-OFF
- RPZ VALVE
- TAPWARE (POTABLE) REFER SPECIFICATION
- TAPWARE TO BE REMOVED
- TAPWARE (NON-POTABLE) REFER SPECIFICATION
- INTERNAL- CHROME PLATED SCREW NOSE BIBCOCK EXTERNAL- SCREW NOSE BIBCOCK
- EMERGENCY SHOWER / EYEWASH
- SINGLE OUTLET GAS TURRET
- DOUBLE OUTLET GAS TURRET
- GAS EMERGENCY STOP PUSH BUTTON
- GAS ISOLATION VALVE
- TMV WALL BOX
- THERMOSTATIC MIXING VALVE
- BALANCING VALVE
- WATER FILTER
- SOLENOID VALVE
- PRESSURE REDUCING VALVE
- WATER METER
- GAS METER
- PRESSURE PUMP
- FLEXIBLE BRAIDED STAINLESS STEEL CONNECTION
- STRAINER
- CENTRAL VACUUMING INLET

GENERAL PIPEWORK

- PIPE DOWN
- PIPE UP
- DROPPER
- RISER
- FLOW DIRECTION
- CAPPED & SEALED END
- CONTINUATION
- EXISTING TO NEW PIPEWORK CONNECTION
- CHANGE IN PIPE SIZE/ GRADE
- CHANGE IN MATERIAL
- KNUCKLE JOINT

MISCELLANEOUS

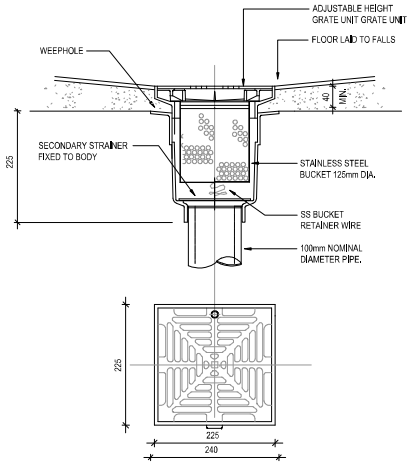
- FFL 00.00 — FINISHED FLOOR LEVEL
- WB 1.1 — TYPE OF FIXTURE & TAPWARE (REFER SPECIFICATION) / FIXTURE
- SS IFA 76100 — SERVICE IDENTIFICATION / SIZE / DIRECTION OF FLOW
- ACCESS PANEL BY CEILING CONTRACTOR
- HATCHED AREA DENOTES SAW CUT & EXISTING FLOOR / SURFACE REMOVAL TO FACILITATE CAPPING OF EXISTING MAIN & BRANCH DRAINS TO REDUNDANT SANITARY DRAINAGE PIPEWORK & TO FACILITATE INSTALLATION OF NEW SANITARY DRAINAGE PIPEWORK. REFER TO STRUCTURAL ENGINEERS DRAWINGS FOR MAKING GOOD TO EXISTING FLOOR.

ELECTRICAL LEGEND

- SINGLE PHASE/ THREE PHASE ISOLATOR BY ELECTRICAL SERVICES CONTRACTOR
- GPO BY ELECTRICAL SERVICES CONTRACTOR
- C — CONTROL PANEL CONDUITS PIPEWORK

ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE	PLSW	PUMP LINE STORMWATER
AC	AIR CONDITIONING	RM	RISING MAIN
BTH	BATH	RPZ	REDUCED PRESSURE ZONE
BE	BLANK END	RW	RAINWATER
BWU	BOILING WATER UNIT	RWO	RAIN WATER OUTLET
CD	CONDENSATE DRAIN	SD	SOIL DRAIN
CG	CHANGE IN GRADE	SHR	SHOWER
CHV	CHECK VALVE	SIC	SEWER INSPECTION CHAMBER
CM	CHANGE IN MATERIAL	SK	SINK
CP	CHROME PLATED	SNBC	SCREW NOSED BIBCOCK
CS	CHANGE IN SIZE	SR	SHOP RISER
CSK	CLEANERS SINK	SS	SOIL STACK
Cu	COPPER	SSD	SUB SOIL DRAIN
DCW	DOMESTIC COLD WATER	SWD	STORMWATER DRAIN
DHW	DOMESTIC HOT WATER	TAW	TRAP & WASTE
DHWF	DOMESTIC HOT WATER FLOW	TA	TO ABOVE
DHWR	DOMESTIC HOT WATER RETURN	TB	TO BELOW
DP	DOWNPIPE	THW	TEMPERED HOT WATER
DW	DISHWASHER	TMV	THERMOSTATIC MIXING VALVE
EXG	EXISTING	TR	TROUGH
FA	FROM ABOVE	TWD	TRADE WASTE DRAIN
FB	FROM BELOW	TWSR	TRADE WASTE SHOP RISER
FW	FLOOR WASTE	TWS	TRADE WASTE STACK
GSR	GREASE SHOP RISER	uPVC	UNPLASTICISED POLYVINYL CHLORIDE
GTD	GRATED TRENCH DRAIN	uTW	UNTRAPPED WASTE
GWD	GREASE WASTE DRAIN	UR	URINAL
GWS	GREASE WASTE STACK	US	UNDERSIDE
HB	HAND BASIN	VB	VENT BREATHER
HCVS	HOSE CONNECTION VACUUM BREAKER	VS	VENT SOIL
HDPE	HIGH DENSITY POLYETHYLENE	VSR	VENT SOIL RELIEF
HWU	HOT WATER UNIT	VW	VENT WASTE
IL	INVERT LEVEL	VGW	VENT GREASE WASTE
IO	INSPECTION OPENING	VGWR	VENT GREASE WASTE RELIEF
IRR	IRRIGATION	VTW	VENT TRADE WASTE
IV	ISOLATION VALVE	WC	WATER CLOSET
JU	JUMP UP	WD	WASTE DRAIN
KJ	KNUCKLE JOINT	WM	WASHING MACHINE
LIT	LEVEL INVERT TAPER	WS	WASTE STACK
LIS	LITRES PER SECOND		
NPCW	NON-POTABLE COLD WATER		
NPHW	NON-POTABLE HOT WATER		
MDPE	MEDIUM DENSITY POLYETHYLENE		
OF	OVER FLOW		
PLS	PUMP LINE SEWER		



BUCKET TRAPS SHALL BE WITH RETAINER WIRE, S/STEEL BUCKET STRAINER, CAST IRON BODY & SECONDARY STRAINER.

SUPPLIER: "SPECIALITY PLUMBING SUPPLIES" MODEL Q22RABA

BUCKET TRAP

P:\56785\Drawings\HYD\56785 H-01.dwg 8/04/2021 5:03:38 PM emmanuel kveji

Issue	Amendments	Date	Init.
01	PRELIMINARY ISSUE	08.04.21	EKW

North

Architect

Phillips/Pilkington Architects

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DOCUMENT ISSUE
Date
8–Apr–21
BESTEC
ABN 43 909 272 047
BUILDING ENGINEERING
SERVICES TECHNOLOGIES
CONSULTING ENGINEERS

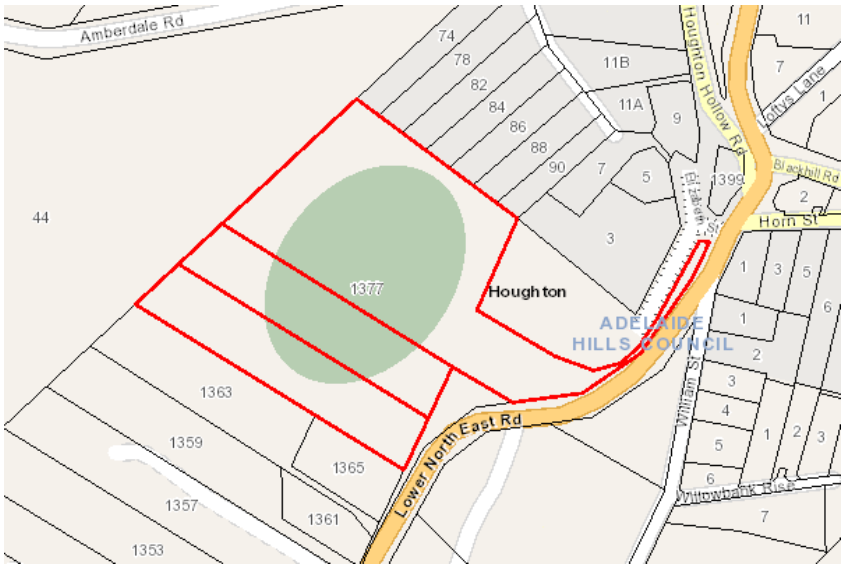
PRELIMINARY

Project	HOUGHTON SOLDIERS MEMORIAL PARK	Drawn EKW	Checked	Date APRIL 2021
Title	HYDRAULIC SERVICES	Designed VTR	Checked	Scale NTS @A1
	LEGEND OF SYMBOLS & DETAILS	Project Number 56785	Drawing Number H-07 7 7	Issue 01

Address: **1377 LOWER NORTH EAST RD HOUGHTON SA 5131**

Click to view a detailed interactive SAILIS in SAILIS

To view a detailed interactive property map in SAPPA click on the map below



Property Zoning Details

Local Variation (TNV)

Minimum Site Area *(Minimum site area is 4,000 sqm)*

Overlay

Hazards (Bushfire - Medium Risk)
Hazards (Flooding - Evidence Required)
Mount Lofty Ranges Water Supply Catchment (Area 1)
Native Vegetation
Prescribed Water Resources Area
Regulated and Significant Tree
Traffic Generating Development
Urban Transport Routes
Water Resources

Zone

Township

Development Pathways

- Township

1. Accepted Development
   Means that the development type does not require planning consent (planning approval). Please ensure compliance with relevant land use and development controls in the Code.

   - Air handling unit, air conditioning system or exhaust fan
   - Brush fence
   - Building work on railway land
   - Carport
   - Internal building work
   - Outbuilding
   - Partial demolition of a building or structure
   - Private bushfire shelter
   - Shade sail
   - Solar photovoltaic panels (roof mounted)
   - Swimming pool or spa pool

- Verandah
- Water tank (above ground)
- Water tank (underground)

2. Code Assessed - Deemed to Satisfy
   Means that the development type requires consent (planning approval). Please ensure compliance with relevant land use and development controls in the Code.

   - Advertisement
   - Carport
   - Land division
   - Outbuilding
   - Temporary accommodation in an area affected by bushfire
   - Verandah

3. Code Assessed - Performance Assessed
   Performance Assessed development types listed below are those for which the Code identifies relevant policies. Additional development types that are not listed as Accepted, Deemed to Satisfy or Restricted default to a Performance assessed Pathway. Please contact your local council for more information.

   - Advertisement
   - Ancillary accommodation
   - Carport
   - Consulting room
   - Demolition
   - Detached dwelling
   - Dwelling addition
   - Dwelling or residential flat building undertaken by:
     (a) the South Australian Housing Trust either individually or jointly with other persons or bodies
     or
     (b) a provider registered under the Community Housing National Law participating in a program relating to the renewal of housing endorsed by the South Australian Housing Trust.
   - Fence
   - Land division
   - Light industry
   - Office
   - Outbuilding
   - Retaining wall
   - Semi-detached dwelling
   - Shop
   - Store
   - Tree-damaging activity
   - Verandah
   - Warehouse

4. Impact Assessed - Restricted
   Means that the development type requires approval. Classes of development that are classified as Restricted are listed in Table 4 of the relevant Zones.

Property Policy Information for above selection

Part 2 - Zones and Sub Zones

Township Zone

Assessment Provisions (AP)

Desired Outcome

DO 1	A township supporting a range of residential, community, retail, business, commercial and light industry uses and facilities.
DO 2	Development contributes to and enhances streetscapes and the settlement patterns comprising the township.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Land Use	
PO 1.1 A range of development types that complement local built form and the surrounding township context.	DTS/DPF 1.1 Development comprises one or more of the following uses: (a) advertisement (b) carport (c) consulting room (d) detached dwelling (e) dwelling addition (f) light industry (g) office (h) outbuilding (i) semi-detached dwelling (j) shop (k) tourist accommodation (l) verandah (m) warehouse
PO 1.2 Small-scale retail, business and commercial development that provide a range of goods and services to the local community, the surrounding district and visitors.	DTS/DPF 1.2 Shops, offices and consulting rooms (or any combination thereof) do not exceed 250m^2 in gross leasable floor area.
PO 1.3 Small-scale light industry and warehousing activities that supply a local service to the community and business activities.	DTS/DPF 1.3 The gross leasable floor area of a building plus any outdoor space used for a light industry, warehouse or store (or any combination thereof) does not exceed 250m^2.
PO 1.4 Small-scale tourist accommodation that supports the visiting public and holiday makers.	DTS/DPF 1.4 None are applicable.
PO 1.5 Development of a business, commercial or light industrial nature is grouped together or in close proximity to establish identifiable service centres or reinforce traditional main streets.	DTS/DPF 1.5 Development is located adjacent to a site containing an existing non-residential use with the same primary street frontage.
Built Form and Character	
PO 2.1	DTS/DPF 2.1

Buildings are of a scale and design to complement the surrounding built form, streetscape and character.	None are applicable.
PO 2.2 Buildings contribute to a low-rise character and complement the height of nearby buildings.	DTS/DPF 2.2 Building height (excluding garages, carports and outbuildings) is no greater than 2 building levels and 9m and wall height that is no greater than 6m.
PO 2.3 Buildings are set back from the primary street boundary to complement the existing streetscape character.	DTS/DPF 2.3 Buildings are no closer to the primary street boundary than: (a) the average of existing buildings on adjoining sites with the same primary street frontage and, if there is only one such building, the setback of that building or (b) 6m if no building exists on an adjoining site with the same primary street frontage.
PO 2.4 Buildings are set back from a secondary street boundary to maintain a consistent pattern of separation between building walls and public thoroughfares on corner sites within the locality.	DTS/DPF 2.4 Buildings are no closer than 900mm to the secondary street boundary.
PO 2.5 Dwellings are set back from rear boundaries to provide: (a) access to natural light and ventilation for neighbours (b) open space recreational opportunities (c) space for landscaping and vegetation.	DTS/DPF 2.5 Dwellings are no closer to the rear boundary of the site than: (a) 4m for the ground floor of a building (b) 6m for the upper floor of a building.
PO 2.6 Buildings are set back from side boundaries to: (a) establish separation between buildings to complement the established character within a locality (b) provide access to natural light and ventilation for neighbours.	DTS/DPF 2.6 Other than walls located on a side boundary, buildings are set back from side boundaries: (a) at least 900mm where the wall height is up to 3m (b) other than for a wall facing a southern side boundary, at least 900mm plus 1/3 of the wall height above 3m (c) at least 1.9m plus 1/3 of the wall height above 3m for walls facing a southern side boundary.
PO 2.7 Boundary walls are limited in height and length to mitigate adverse impacts on the amenity of adjoining land users, including through an unreasonable loss of natural light and ventilation.	DTS/DPF 2.7 For buildings that do not have a common wall, any wall sited on or abutting a side allotment boundary: (a) does not exceed 3m in height from the top of the footings (b) does not exceed 8m in length (c) when combined with other walls on the boundary, does not exceed 45% of the length of the boundary (d) is set back at least 3 metres from any existing or proposed boundary walls.
Site Dimensions and Land Division	
PO 3.1 Allotments for residential purposes are of a suitable size and	DTS/DPF 3.1 Development will not result in more than 1 dwelling on an existing

dimension to contribute to a housing pattern consistent with the locality.	allotment or Allotments/sites for residential purposes accord with the following: (a) where allotments/sites are connected to mains sewer or a Community Wastewater Management System site areas (or allotment areas in the case of land division) are not less than the following (average site area per dwelling, including common areas, applies for group dwellings or dwellings within a residential flat building): **Minimum Site Area** Minimum site area is 4,000 sqm (b) where allotments/sites are not connected to mains sewer or an approved common waste water disposal service site areas are not less than the greater of: (i) 1200m^2 (ii) the following: **Minimum Site Area** Minimum site area is 4,000 sqm (c) site frontages are not less than 20m In relation to DTS/DPF 3.1, in instances where: (d) more than one value is returned in the same field, refer to the *Minimum Site Area Technical and Numeric Variation* layer in the SA planning database to determine the applicable value relevant to the site of the proposed development (e) no value is returned for DTS/DPF 3.1(a) (i.e. there is a blank field), then non are applicable and the relevant development cannot be classified as deemed-to-satisfy (f) no value is returned for DTS/DPF 3.1(b)(ii) (i.e. there is a blank field), the value for DTS/DPF 3.1(b)(ii) is zero.
Advertisements	
PO 4.1 Freestanding advertisements that identify the associated business without creating a visually dominant element within the locality.	DTS/DPF 4.1 Freestanding advertisements: (a) do not exceed 2m in height (b) do not have a sign face that exceeds 2m^2 per side.
Concept Plans	
PO 5.1 Development is compatible with the outcomes sought by any relevant Concept Plan contained within Part 12 - Concept Plans of the Planning and Design Code to support the orderly development of land through staging of development and provision of infrastructure.	DTS/DPF 5.1 The site of the development is wholly located outside any relevant Concept Plan boundary. The following Concept Plans are relevant: In relation to DTS/DPF 5.1, in instances where: (a) one or more Concept Plan is returned, refer to Part 12 - Concept Plans in the Planning and Design Code to determine if a Concept Plan is relevant to the site of the proposed development. Note: multiple concept plans may

	be relevant. (b) in instances where 'no value' is returned, there is no relevant concept plan and DTS/DPF 5.1 is met.

Table 5 - Procedural Matters (PM) - Notification

The following table identifies, pursuant to section 107(6) of the *Planning, Development and Infrastructure Act 2016*, classes of performance assessed development that are excluded from notification. The table also identifies any exemptions to the placement of notices when notification is required.

Interpretation

A class of development listed in Column A is excluded from notification provided that it does not fall within a corresponding exclusion prescribed in Column B. In instances where development falls within multiple classes within Column A, each clause is to be read independently such that if a development is excluded from notification by any clause, it is, for the purposes of notification excluded irrespective of any other clause.

Class of Development **(Column A)**	**Exceptions** **(Column B)**
1. A kind of development which, in the opinion of the relevant authority, is of a minor nature only and will not unreasonably impact on the owners or occupiers of land in the locality of the site of the development.	None specified.
2. Any development involving any of the following (or of any combination of any of the following): (a) advertisement (b) air handling unit, air conditioning system or exhaust fan (c) ancillary accommodation (d) building work on railway land (e) carport (f) deck (g) dwelling (h) dwelling addition (i) fence (j) outbuilding (k) pergola (l) private bushfire shelter (m) retaining wall (n) shade sail (o) solar photovoltaic panels (roof mounted) (p) swimming pool or spa pool (q) temporary public service depot (r) verandah (s) water tank.	Except development that: 1. exceeds the maximum building height specified in Township Zone DTS/DPF 2.2 or 2. involves the creation of 4 or more additional dwellings.
3. Any development involving any of the following (or of any combination of any of the following): (a) consulting room (b) office (c) shop.	Except development that exceeds the maximum building height specified in Township Zone DTS/DPF 2.2 or does not satisfy Township Zone DTS/DPF 1.2.

4. Any development involving any of the following (or of any combination of any of the following): (a) light industry (b) store (c) warehouse.	Except development that exceeds the maximum building height specified in Township Zone DTS/DPF 2.2 or does not satisfy Township Zone DTS/DPF 1.3.
5. Any development involving any of the following (or of any combination of any of the following): (a) internal building works (b) land division (c) replacement building (d) temporary accommodation in an area affected by bushfire (e) tree damaging activity.	None specified.
6. Demolition.	Except any of the following: 1. the demolition of a State or Local Heritage Place 2. the demolition of a building (except an ancillary building) in a Historic Area Overlay.

Placement of Notices - Exemptions for Performance Assessed Development
None specified.

Placement of Notices - Exemptions for Restricted Development
None specified.

Part 3 - Overlays

Hazards (Bushfire - Medium Risk) Overlay

Assessment Provisions (AP)

Desired Outcome	
DO 1	Development, including land division responds to the medium level of bushfire risk and potential for ember attack and radiant heat by siting and designing buildings in a manner that mitigates the threat and impact of bushfires on life and property taking into account the increased frequency and intensity of bushfires as a result of climate change.
DO 2	To facilitate access for emergency service vehicles to aid the protection of lives and assets from bushfire danger.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Siting	
PO 1.1 Buildings and structures are located away from areas that pose an unacceptable bushfire risk as a result of vegetation cover and type, and terrain.	DTS/DPF 1.1 None are applicable.
Built Form	
PO 2.1 Buildings and structures are designed and configured to reduce the impact of bushfire through using designs that reduce the potential for trapping burning debris against or underneath the building or structure, or between the ground and building floor level in the case of transportable buildings and buildings on stilts.	DTS/DPF 2.1 None are applicable.
PO 2.2 Extensions to buildings, outbuildings and other ancillary structures are sited and constructed using materials to minimise the threat of fire spread to residential and tourist accommodation (including boarding houses, hostels, dormitory style accommodation, student accommodation and Workers' accommodation) in the event of bushfire.	DTS/DPF 2.2 Outbuildings and other ancillary structures are sited no closer than 6m from the habitable building.
Habitable Buildings	
PO 3.1 To minimise the threat, impact and potential exposure to bushfires on life and property, residential and tourist accommodation and habitable buildings for vulnerable communities (including boarding houses, hostels, dormitory style accommodation, student accommodation and workers' accommodation) is sited on the flatter portion of allotments away from steep slopes.	DTS/DPF 3.1 None are applicable.
PO 3.2 Residential, tourist accommodation and habitable buildings for vulnerable communities (including boarding houses, hostels, dormitory style accommodation, student accommodation and workers' accommodation) is sited away from vegetated areas that pose an unacceptable bushfire risk.	DTS/DPF 3.2 Residential, tourist accommodation and habitable buildings for vulnerable communities are provided with asset protection zone(s) in accordance with (a) and (b): (a) the asset protection zone has a minimum width of at least: (i) 50 metres to unmanaged grasslands (ii) 100 metres to hazardous bushland vegetation (b) the asset protection zone is contained wholly within the allotment of the development.
PO 3.3 Residential, tourist accommodation and habitable buildings for vulnerable communities, (including boarding houses, hostels, dormitory style accommodation, student accommodation and workers' accommodation), has a dedicated area available that is	DTS/DPF 3.3 None are applicable.

capable of accommodating a bushfire protection system comprising firefighting equipment and water supply in accordance with *Ministerial Building Standard MBS 008 - Designated bushfire prone areas - additional requirements*.	
Land Division	
PO 4.1 Land division is designed and incorporates measures to minimise the danger of fire hazard to residents and occupants of buildings, and to protect buildings and property from physical damage in the event of a bushfire.	DTS/DPF 4.1 None are applicable.
PO 4.2 Land division is designed to provide a continuous street pattern to facilitate the safe movement and evacuation of emergency vehicles, residents, occupants and visitors.	DTS/DPF 4.2 None are applicable.
PO 4.3 Where 10 or more new allotments are proposed, land division includes at least two separate and safe exit points to enable multiple avenues of evacuation in the event of a bushfire.	DTS/DPF 4.3 None are applicable.
PO 4.4 Land division incorporates perimeter roads of adequate design in conjunction with bushfire buffer zones to achieve adequate separation between residential allotments and areas of unacceptable bushfire risk and to support safe access for the purposes of fire-fighting.	DTS/DPF 4.4 None are applicable.
Vehicle Access - Roads, Driveways and Fire Tracks	
PO 5.1 Roads are designed and constructed to facilitate the safe and effective: (a) access, operation and evacuation of fire-fighting vehicles and emergency personnel (b) evacuation of residents, occupants and visitors.	DTS/DPF 5.1 Roads: (a) are constructed with a formed, all-weather surface (b) have a gradient of not more than 16 degrees (1-in-3.5) at any point along the road (c) have a cross fall of not more than 6 degrees (1-in-9.5) at any point along the road (d) have a minimum formed road width of 6m (e) provide overhead clearance of not less than 4.0m between the road surface and overhanging branches or other obstructions including buildings and/or structures (Figure 1) (f) allow fire-fighting services (personnel and vehicles) to travel in a continuous forward movement around road curves by constructing the curves with a minimum external radius of 12.5m (Figure 2) (g) incorporating cul-de-sac endings or dead end roads do not exceed 200m in length and the end of the road has either: (i) a turning area with a minimum formed surface radius of 12.5m (Figure 3) or (ii) a 'T' or 'Y' shaped turning area with a minimum formed surface length of 11m and minimum internal radii of 9.5m (Figure 4) (h) incorporate solid, all-weather crossings over any

	watercourse that support fire-fighting vehicles with a gross vehicle mass (GVM) of 21 tonnes.
PO 5.2 Access to habitable buildings is designed and constructed to facilitate the safe and effective: (a) access, operation and evacuation of fire-fighting vehicles and emergency personnel (b) evacuation of residents, occupants and visitors.	DTS/DPF 5.2 Access is in accordance with (a) or (b): (a) a clear and unobstructed vehicle or pedestrian pathway of not greater than 60 metres in length is available between the most distant part of the habitable building and the nearest part of a formed public access road (b) driveways: (i) do not exceed 600m in length (ii) are constructed with a formed, all-weather surface (iii) are connected to a formed, all-weather public road with the transition area between the road and driveway having a gradient of not more than 7 degrees (1-in-8) (iv) have a gradient of not more than 16 degrees (1-in-3.5) at any point along the driveway (v) have a crossfall of not more than 6 degrees (1-in-9.5) at any point along the driveway (vi) have a minimum formed width of 3m (4m where the gradient of the driveway is steeper than 12 degrees (1-in-4.5)) plus 0.5 metres clearance either side of the driveway from overhanging branches or other obstructions, including buildings and/or structures (Figure 1) (vii) incorporate passing bays with a minimum width of 6m and length of 17m every 200m (Figure 5) (viii) provide overhead clearance of not less than 4.0m between the driveway surface and overhanging branches or other obstructions, including buildings and/or structures (Figure 1) (ix) allow fire-fighting services (personnel and vehicles) to travel in a continuous forward movement around driveway curves by constructing the curves with a minimum external radius of 12.5m (Figure 2) (x) allow fire-fighting vehicles to safely enter and exit an allotment in a forward direction by using a 'U' shaped drive through design or by incorporating at the end of the driveway either: A. a loop road around the building or B. a turning area with a minimum radius of 12.5m (Figure 3) or C. a 'T' or 'Y' shaped turning area with a minimum formed length of 11m and minimum internal radii of 9.5m (Figure 4) (xi) incorporate solid, all-weather crossings over any watercourse that support fire-fighting vehicles with a gross vehicle mass (GVM) of 21 tonnes.
PO 5.3 Development does not rely on fire tracks as means of evacuation or access for fire-fighting purposes unless there are no safe alternatives available.	DTS/DPF 5.3 None are applicable.

Procedural Matters (PM) - Referrals

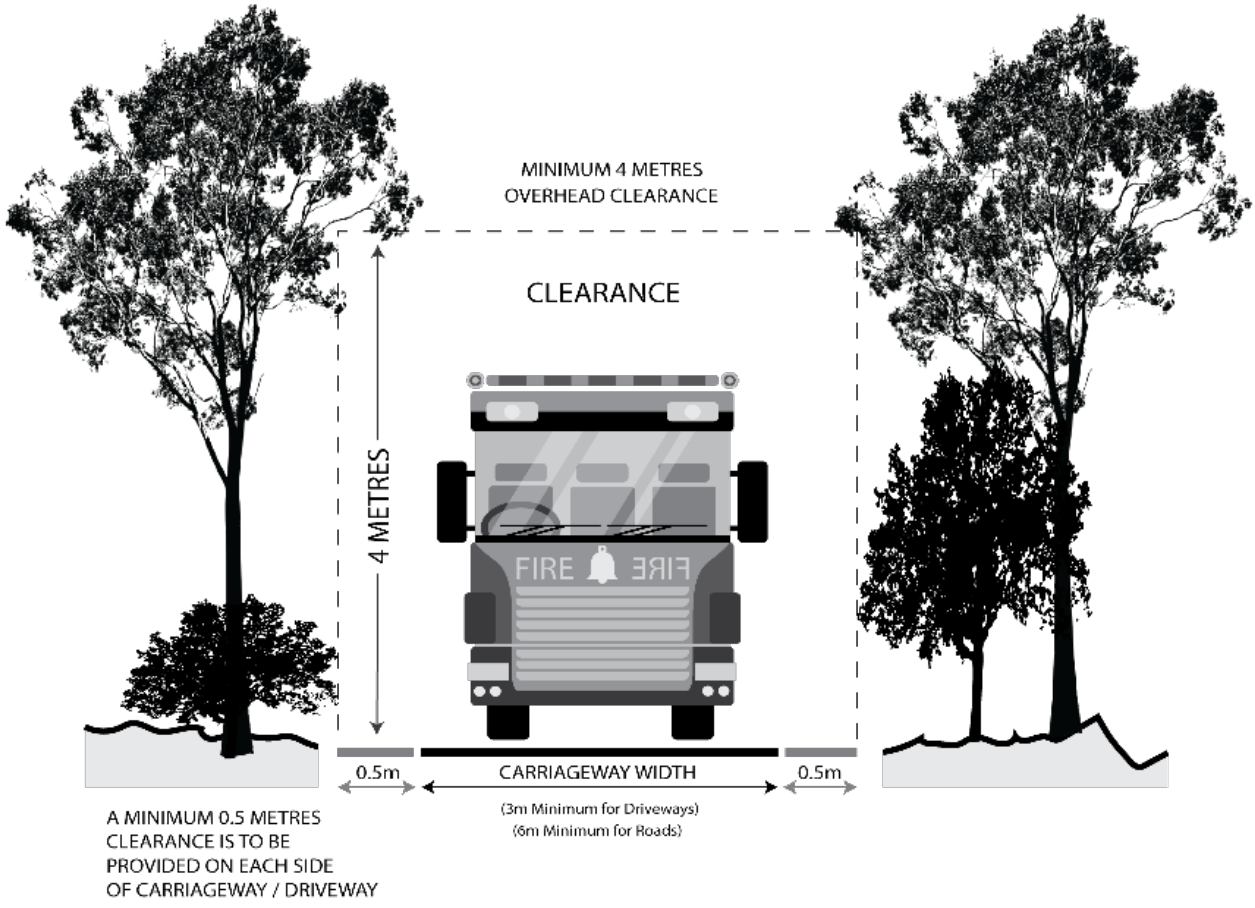
The following table identifies classes of development / activities that require referral in this Overlay and the applicable referral body. It sets out the purpose of the referral as well as the relevant statutory reference from Schedule 9 of the Planning, Development and Infrastructure (General) Regulations 2017.

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference
None	None	None	None

Figures and Diagrams

Fire Engine and Appliance Clearances

Figure 1 - Overhead and Side Clearances



Roads and Driveway Design

Figure 2 - Road and Driveway Curves

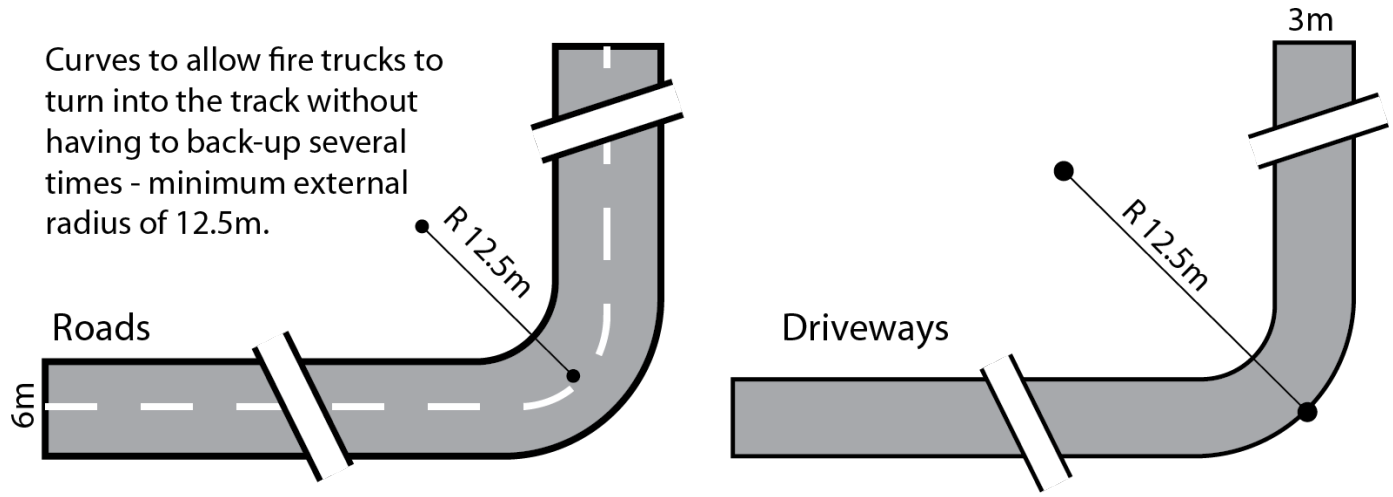


Figure 3 - Full Circle Turning Area

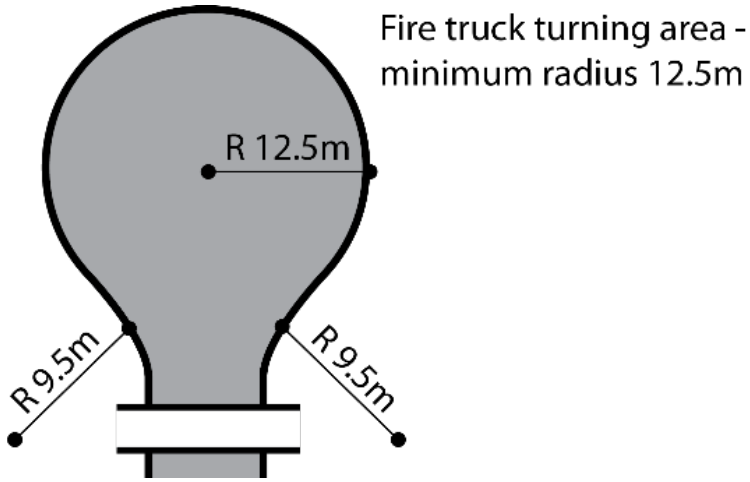
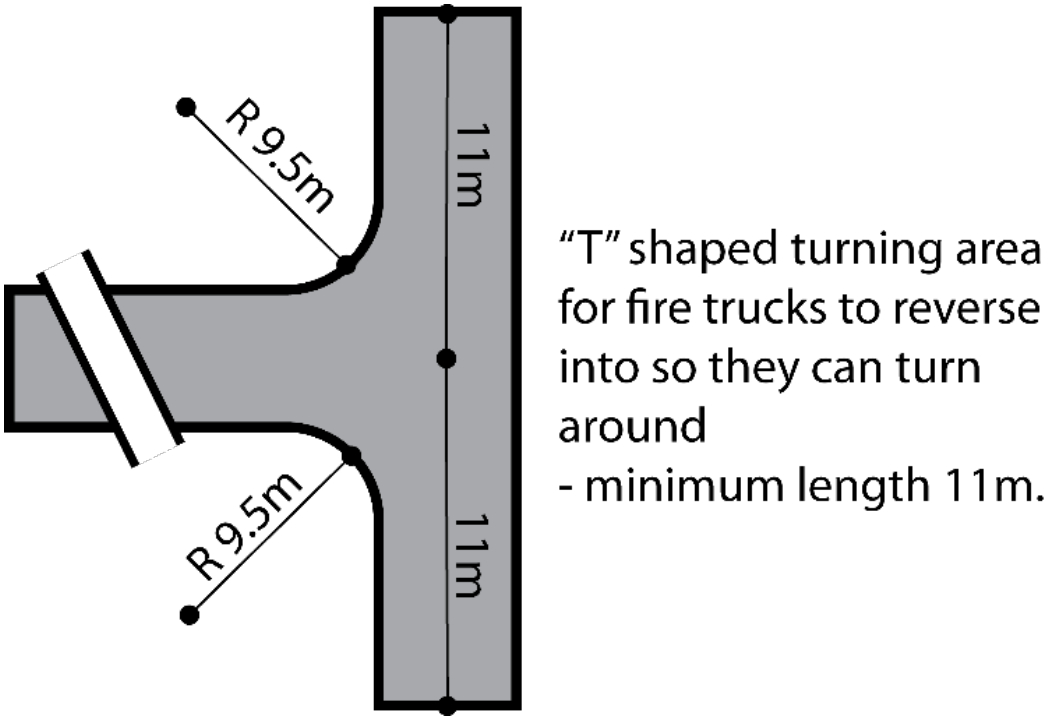


Figure 4 - 'T' or 'Y' Shaped Turning Head



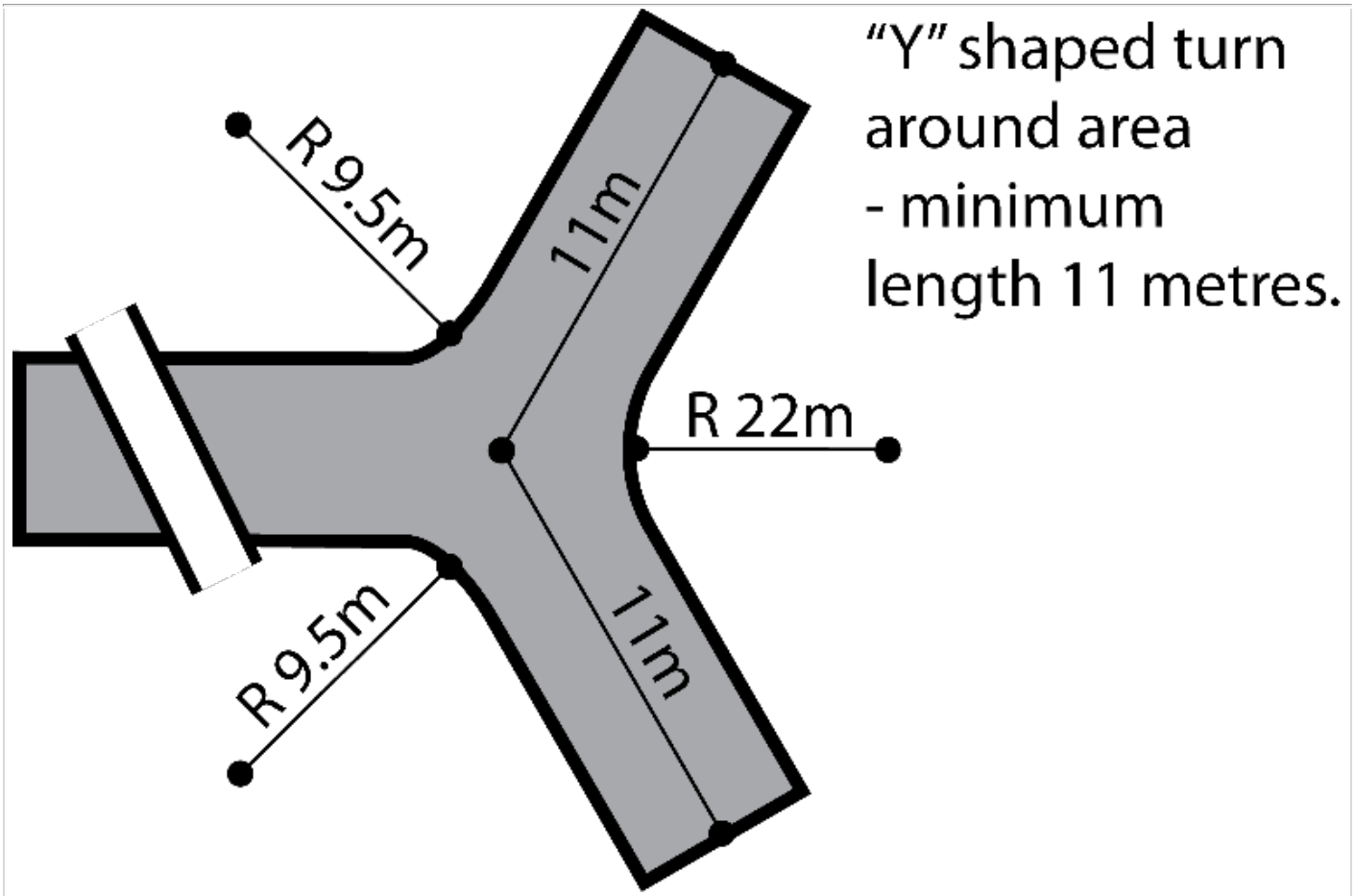
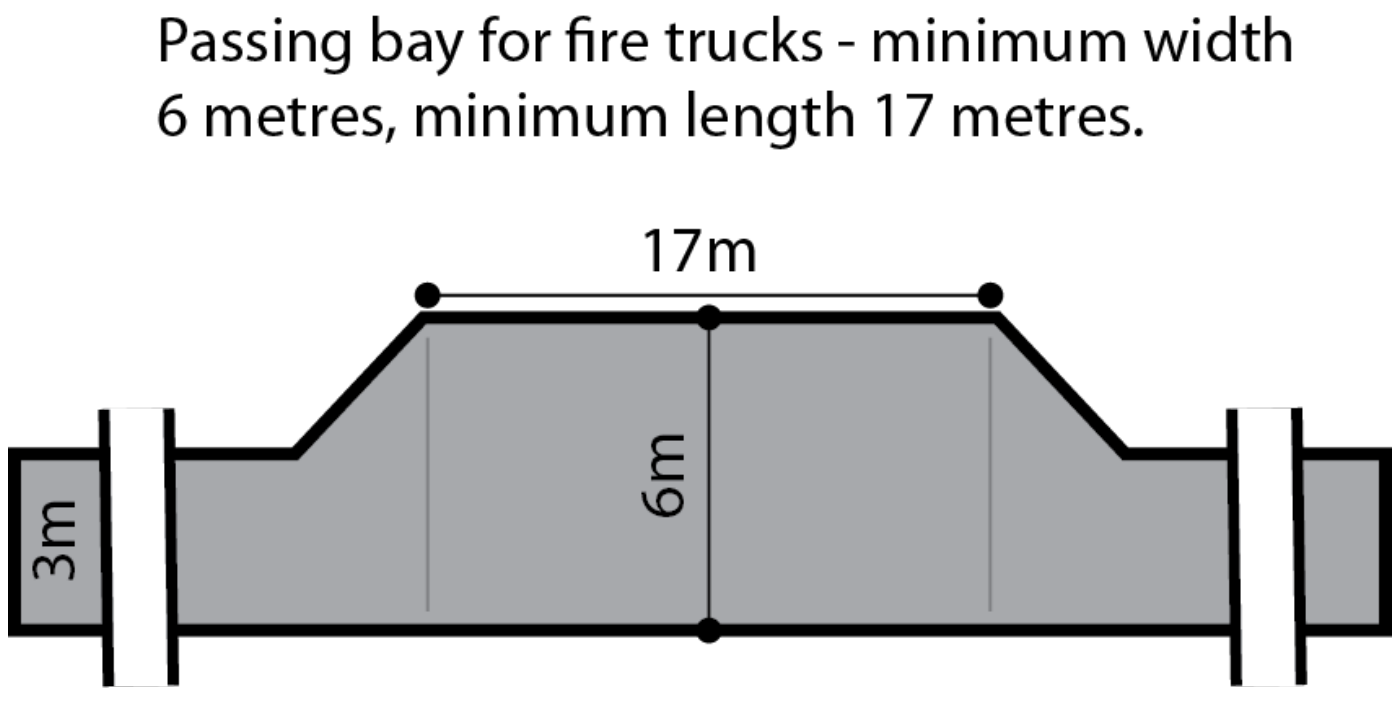


Figure 5 - Driveway Passing Bays



Hazards (Flooding - Evidence Required) Overlay

Assessment Provisions (AP)

Desired Outcome

DO 1	Development adopts a precautionary approach to mitigate potential impacts on people, property, infrastructure and the environment from potential flood risk through the appropriate siting and design of development.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Flood Resilience	
PO 1.1 Development is sited, designed and constructed to minimise the risk of entry of potential floodwaters where the entry of flood waters is likely to result in undue damage to or compromise ongoing activities within buildings.	DTS/DPF 1.1 Habitable buildings, commercial and industrial buildings, and buildings used for animal keeping incorporate a finished floor level at least 300mm above: (a) the highest point of top of kerb of the primary street or (b) the highest point of natural ground level at the primary street boundary where there is no kerb
Environmental Protection	
PO 2.1 Buildings and structures used either partly or wholly to contain or store hazardous materials are designed to prevent spills or leaks leaving the confines of the building.	DTS/DPF 2.1 Development does not involve the storage of hazardous materials.

Procedural Matters (PM) - Referrals

The following table identifies classes of development / activities that require referral in this Overlay and the applicable referral body. It sets out the purpose of the referral as well as the relevant statutory reference from Schedule 9 of the Planning, Development and Infrastructure (General) Regulations 2017.

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference
None	None	None	None

Mount Lofty Ranges Water Supply Catchment (Area 1) Overlay

Assessment Provisions (AP)

Desired Outcome	
DO 1	Safeguard Greater Adelaide's public water supply by ensuring development has a neutral or beneficial effect on the quality of water harvested from primary reservoirs or diversion weir catchments from the Mount Lofty Ranges.

Performance Outcomes (PO) and Deemed to Satisfy (DTS) / Designated Performance Feature (DPF) Criteria

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Water Quality	
PO 1.1 Development results in a neutral or beneficial effect on the quality of water draining from the site to maintain and enhance the role of the catchment as a water supply.	DTS/DPF 1.1 None are applicable.
PO 1.2 Development does not include land uses that have the potential to cause adverse impacts on the quality of water draining into primary public water supply reservoirs and weirs.	DTS/DPF 1.2 Development does not involve any one or combination of the following: (a) aquaculture involving husbandry or supplementary feeding in a water flow through system (b) dairy except if a replacement dairy (c) organic waste processing facility (d) fuel depot (e) horticulture involving only market gardening or commercial turf growing (f) intensive animal husbandry (g) landfill (h) retail fuel outlet (i) special industry (j) stock sales yard (k) stock slaughter works (l) timber preservation works (m) waste recycling, storage or treatment facility (n) wrecking yard.
Wastewater	
PO 2.1 Development that generates trade or industrial wastewater is designed to ensure wastewater disposal avoids adverse water quality impacts on the quality of water draining into primary public water supply reservoirs and weirs.	DTS/DPF 2.1 Development that generates trade or industrial wastewater is connected to a: (a) sewer or community wastewater management system with sufficient hydraulic and treatment capacity to accept the inflow, or (b) wastewater holding tank which has storage capacity of more than four days total flow during peak operations and is contained within an impervious, bunded area with a total liquid holding capacity of more than 120 percent of the total holding tank capacity, prior to transporting for off-site disposal.
PO 2.2 Development that generates human wastewater, including alterations and additions, are established at an intensity and in a manner to minimise potential adverse impact on water quality within primary reservoir and weir catchment areas.	DTS/DPF 2.2 Development, including alterations and additions, in combination with existing built form and activities within an allotment: (a) does not generate a combined total of more than 900 litres of wastewater per day, and (b) will be connected to the same on-site wastewater system that is compliant with relevant South Australian standards or is otherwise connected to a sewerage or community wastewater management system.

PO 2.3 Wastewater management systems result in a neutral or beneficial effect on the quality of water draining from the site.	DTS/DPF 2.3 Development results in: (a) a building or land use that is currently connected to an existing on-site wastewater system that is non-compliant with relevant South Australian standards being connected to a new or upgraded system that complies with such standards or (a) an existing on-site wastewater system being decommissioned and wastewater being disposed of to a sewer or community wastewater management system that complies with relevant South Australian standards.
PO 2.4 Surface and groundwater protected from wastewater discharge pollution.	DTS/DPF 2.4 All components of an effluent disposal area are: (a) set back 50 metres or more from a watercourse (b) set back 100 metres or more from a public water supply reservoir (c) located on land with a slope no greater than 1-in-5 (20%) (d) located on land with 1.2m or more depth to bedrock or a seasonal or permanent water table (e) above the 10% AEP flood level.
Stormwater	
PO 3.1 Post-development peak stormwater discharge quantities and rates do not exceed pre-development quantities and rates to maintain water quality leaving the site.	DTS/DPF 3.1 None are applicable.
PO 3.2 Stormwater run-off from areas not likely to be subject to pollution diverted away from areas that could cause pollution.	DTS/DPF 3.2 None are applicable.
PO 3.3 Polluted stormwater is treated prior to discharge from the site.	DTS/DPF 3.3 None are applicable.
PO 3.4 Stormwater from carports, verandahs, outbuildings and agricultural buildings captured to protect water quality.	DTS/DPF 3.4 Development includes: (a) rainwater tanks with a minimum capacity of 1,000L connected to carports, verandahs and outbuildings or (b) rainwater tanks with a minimum capacity of 4,500L connected to agricultural buildings exceeding 100m^2.
PO 3.5 Stormwater from dwelling additions captured to protect water quality.	DTS/DPF 3.5 Dwelling additions are connected to a rainwater tank with a minimum capacity of 1,000L.
PO 3.6	DTS/DPF 3.6

Stormwater from shops and tourist accommodation is managed to protect water quality.	Shops and tourist accommodation satisfy all the following: (a) are located 50m or more from watercourses, wetlands, land prone to waterlogging and bores (b) are located 100m or more from public water supply reservoirs and diversion weirs (c) are located on land with a slope not exceeding 20% (d) includes buildings connected to rainwater tanks with a minimum capacity of 1,000L (e) includes swales that divert clean stormwater away from areas where it could be polluted.
PO 3.7 Stormwater from horse keeping and low intensity animal husbandry is managed to protect water quality.	DTS/DPF 3.7 Horse keeping and low intensity animal husbandry satisfy all the following: (a) is located 50m or more from watercourses, wetlands, land prone to waterlogging and bores (b) is located on land with a slope not exceeding 10% (c) includes stables, shelters or other roofed structures connected to rainwater tanks with a minimum capacity of 1,000L (d) includes swales that divert clean stormwater away from areas (including yards, manure storage areas, and watering points) within which it could be polluted.
PO 3.8 Stormwater from horticulture is managed to protect water quality.	DTS/DPF 3.8 Horticulture satisfies all the following : (a) is located 50m or more from watercourses, wetlands, land prone to waterlogging and bores (b) is located 100m or more from public water supply reservoirs and diversion weirs (c) is located on land with a slope not exceeding 10% (d) includes swales or other structures that divert clean stormwater away from areas (including plant growing areas, chemical storage areas and plant waste storage areas) within which it could be polluted.
PO 3.9 Stormwater from excavated and filled areas is managed to protect water quality.	DTS/DPF 3.9 Excavation and/or filling satisfy all the following: (a) is located 50m or more from watercourses (b) is located 100m or more from public water supply reservoirs and diversion weirs (c) does not involve excavation exceeding a vertical height of 0.75m (d) does not involve filling exceeding a vertical height of 0.75m (e) does not involve a total combined excavation and filling vertical height of 1.5m.
Landscapes and Natural Features	
PO 4.1 Development minimises the need to modify landscapes and natural features.	DTS/DPF 4.1 None are applicable.

Land Division	
PO 5.1 Land division does not result in an increased risk of pollution to surface or underground water.	DTS/DPF 5.1 Land division does not create additional allotments and satisfies (a) and/or (b): (a) is for realignment of allotment boundaries to correct an anomaly in the placement of those boundaries with respect to the location of existing buildings or structures (b) is for realignment of allotment boundaries to improve management of the land for primary production and/or conservation of natural features.
PO 5.2 Realignment of allotment boundaries does not create development potential for a dwelling and associated onsite wastewater management system where no such potential currently exists.	DTS/DPF 5.2 None are applicable.

Procedural Matters (PM)

The following table identifies classes of development / activities that require referral in this Overlay and the applicable referral body. It sets out the purpose of the referral as well as the relevant statutory reference from Schedule 9 of the Planning, Development and Infrastructure (General) Regulations 2017.

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference
Any of the following classes of development that are not connected (or not proposed to be connected) to a community wastewater management system or sewerage infrastructure: (a) land division creating one or more additional allotments, either partly or wholly within the area of the overlay (b) function centre with more than 75 seats for customer dining purposes (c) restaurant with more than 40 seats for customer dining purposes (d) restaurant with more than 30 seats for customer dining purposes in association with a cellar door (e) dwelling where a habitable dwelling or tourist accommodation already exists on the same allotment (including where a valid planning authorisation exists to erect a dwelling or tourist accommodation on the same allotment) (f) tourist accommodation where a habitable dwelling or tourist accommodation already exists on the same allotment (including where a valid planning authorisation exists to erect a habitable dwelling or tourist accommodation on the same allotment) (g) workers' accommodation where a habitable dwelling or tourist accommodation already exists on the same allotment (including where a valid planning authorisation exists to	Environment Protection Authority.	To provide expert technical assessment and direction to the relevant authority on whether a proposed development will have a neutral or beneficial impact on water quality.	Development of a class to which Schedule 9 clause 3 item 9 of the Planning, Development and Infrastructure (General) Regulations 2017 applies.

erect a habitable dwelling or tourist accommodation on the same allotment) (h) any other development that generates human wastewater from a peak loading capacity of more than 40 persons (or more than 6,000 litres/day).	
Composting works (excluding a prescribed approved activity) - being a depot, facility or works with the capacity to treat, during a 12 month period more than 200 tonnes of organic waste or matter (EPA Licence)	
Wastewater treatment works - being sewage treatment works, a community wastewater management system, winery wastewater treatment works or any other wastewater treatment works with the capacity to treat, during a 12 month period more than 2.5 ML of wastewater (EPA Licence required at more than 5ML)	
Feedlots - being carrying on an operation for holding in confined yard or area and feeding principally by mechanical means or by hand not less than an average of 200 cattle (EPA Licence) or 1,600 sheep or goats per day over any period of 12 months, but excluding any such operation carried on at an abattoir, slaughterhouse or saleyard or for the purpose only of drought or other emergency feeding	
Piggeries - being the conduct of a piggery (being premises having confined or roofed structures for keeping pigs) with a capacity of 130 or more standard pig units (EPA Licence required at 650 or more standard pig units)	
Dairies - carrying on of a dairy with a total processing capacity exceeding 100 milking animals at any one time.	

Native Vegetation Overlay

Assessment Provisions (AP)

Desired Outcome	
DO 1	Areas of native vegetation are protected, retained and restored in order to sustain biodiversity, threatened species and vegetation communities, fauna habitat, ecosystem services, carbon storage and amenity values.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Environmental Protection	
PO 1.1 Development avoids, or where it cannot be practically avoided, minimises the clearance of native vegetation taking into account the siting of buildings, access points, bushfire protection measures and building maintenance.	DTS/DPF 1.1 An application is accompanied by: (a) a declaration stating that the proposal will not, or would not, involve clearance of native vegetation under the Native Vegetation Act 1991, including any clearance that may occur: (i) in connection with a relevant access point and / or driveway (ii) within 10m of a building (other than a residential building or tourist accommodation) (iii) within 20m of a dwelling or addition to an existing dwelling for fire prevention and control (iv) within 50m of residential or tourist accommodation in connection with a requirement under a relevant overlay to establish an asset protection zone in a bushfire prone area or (b) a report prepared in accordance with Regulation 18(2)(a) of the Native Vegetation Regulations 2017 that establishes that the clearance is categorised as 'Level 1 clearance'.
PO 1.2 Native vegetation clearance in association with development avoids the following: (a) significant wildlife habitat and movement corridors (b) rare, vulnerable or endangered plants species (c) native vegetation that is significant because it is located in an area which has been extensively cleared (d) native vegetation that is growing in, or in association with, a wetland environment.	DTS/DPF 1.2 None are applicable.
PO 1.3 Intensive animal husbandry and agricultural activities are sited, set back and designed to minimise impacts on native vegetation, including impacts on native vegetation in an adjacent State Significant Native Vegetation Area, from: (a) the spread of pest plants and phytophthora (b) the spread of non-indigenous plants species (c) excessive nutrient loading of the soil or loading arising from surface water runoff (d) soil compaction (e) chemical spray drift.	DTS/DPF 1.3 Development within 500 metres of a boundary of a State Significant Native Vegetation Area does not involve any of the following: (a) horticulture (b) intensive animal husbandry (c) dairy (d) commercial forestry (e) aquaculture.

PO 1.4 Development restores and enhances biodiversity and habitat values through revegetation using locally indigenous plant species.	DTS/DPF 1.4 None are applicable.
Land division	
PO 2.1 Land division does not result in the fragmentation of land containing native vegetation, or necessitate the clearance of native vegetation, unless such clearance is considered minor, taking into account the location of allotment boundaries, access ways, fire breaks, boundary fencing and potential building siting or the like.	DTS/DPF 2.1 Land division where: (a) an application is accompanied by one of the following: (i) a declaration stating that none of the allotments in the proposed plan of division contain native vegetation under the *Native Vegetation Act 1991* (ii) a declaration stating that no native vegetation clearance under the *Native Vegetation Act 1991* will be required as a result of the division of land (iii) a report prepared in accordance with Regulation 18(2)(a) of the Native Vegetation Regulations 2017 that establishes that the vegetation to be cleared is categorised as 'Level 1 clearance' or (b) an application for land division which is being considered concurrently with a proposal to develop each allotment which will satisfy, or would satisfy, the requirements of DTS/DPF 1.1, including any clearance that may occur or (c) the division is to support a Heritage Agreement under the Native Vegetation Act 1991 or the *Heritage Places Act 1993*.

Procedural Matters (PM) - Referrals

The following table identifies classes of development / activities that require referral in this Overlay and the applicable referral body. It sets out the purpose of the referral as well as the relevant statutory reference from Schedule 9 of the Planning, Development and Infrastructure (General) Regulations 2017.

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference
Development that is the subject of a report prepared in accordance with Regulation 18(2)(a) of the *Native Vegetation Regulations 2017* that categorises the clearance, or potential clearance, as 'Level 3 clearance' or 'Level 4 clearance'.	Native Vegetation Council	To provide expert assessment and direction to the relevant authority on the potential impacts of development on native vegetation.	Development of a class to which Schedule 9 clause 3 item 11 of the Planning, Development and Infrastructure (General) Regulations 2017 applies.

Prescribed Water Resources Area Overlay

Assessment Provisions (AP)

Desired Outcome	
DO 1	Sustainable water use in prescribed surface water resources areas maintains the health and natural flow paths of water courses.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
PO 1.1 All development, but in particular development involving any of the following: (a) horticulture (b) activities requiring irrigation (c) aquaculture (d) industry (e) intensive animal husbandry (f) commercial forestry has a lawful, sustainable and reliable water supply that does not place undue strain on water resources in prescribed surface water areas.	DTS/DPF 1.1 Development satisfies either of the following: (a) the applicant has a current water licence in which sufficient spare capacity exists to accommodate the water needs of the proposed use or (b) the proposal does not involve the taking of water for which a licence would be required under the *Landscape South Australia Act 2019*.
PO 1.2 Development comprising the erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert surface water flowing over land is undertaken in a manner that maintains the quality and quantity of flows required to meet the needs of the environment as well as downstream users.	DTS/DPF 1.2 None are applicable.

Procedural Matters (PM) - Referrals

The following table identifies classes of development / activities that require referral in this Overlay and the applicable referral body. It sets out the purpose of the referral as well as the relevant statutory reference from Schedule 9 of the Planning, Development and Infrastructure (General) Regulations 2017.

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference
Development that comprises the erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts surface water flowing over land.	Relevant authority under the *Landscape South Australia Act 2019* that would, if it were not for the operation of section 106(1)(e) of that Act, have the authority under that	To provide expert assessment and direction to the relevant authority on potential impacts from development on the health, sustainability and/or natural flow paths of water	Development of a class to which Schedule 9 clause 3 item 12 of the

	Act to grant or refuse a permit to undertake the subject development.	resources in accordance with the provisions of the relevant water allocation plan or regional landscape plan or equivalent.	Planning, Development and Infrastructure (General) Regulations 2017 applies.
Any of the following classes of development: (a) horticulture (b) activities requiring irrigation (c) aquaculture (d) industry (e) intensive animal husbandry (f) commercial forestry	The Chief Executive of the Department of the Minister responsible for the administration of the *Landscape South Australia Act 2019.*	To provide expert technical assessment and direction to the relevant authority on the taking of water to ensure development is undertaken sustainably and maintains the health and natural flow paths of water resources.	Development of a class to which Schedule 9 clause 3 item 13 of the Planning, Development and Infrastructure (General) Regulations 2017 applies.
Commercial forestry that requires a forest water licence under Part 8 Division 6 of the *Landscape South Australia Act 2019.*			

Regulated and Significant Tree Overlay

Assessment Provisions (AP)

Desired Outcome	
DO 1	Conservation of regulated and significant trees to provide aesthetic and environmental benefits and mitigate tree loss.

Performance Outcomes (PO) and Deemed to Satisfy (DTS) / Designated Performance Feature (DPF) Criteria

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Tree Retention and Health	
PO 1.1 Regulated trees are retained where they: (a) make an important visual contribution to local character and amenity (b) are indigenous to the local area and listed under the *National Parks and Wildlife Act 1972* as a rare or endangered native species and / or (c) provide an important habitat for native fauna.	DTS/DPF 1.1 None are applicable.
PO 1.2	DTS/DPF 1.2

Significant trees are retained where they: (a) make an important contribution to the character or amenity of the local area (b) are indigenous to the local area and are listed under the *National Parks and Wildlife Act 1972* as a rare or endangered native species (c) represent an important habitat for native fauna (d) are part of a wildlife corridor of a remnant area of native vegetation (e) are important to the maintenance of biodiversity in the local environment and / or (f) form a notable visual element to the landscape of the local area.	None are applicable.
PO 1.3 A tree damaging activity not in connection with other development satisfies (a) and (b): (a) tree damaging activity is only undertaken to: (i) remove a diseased tree where its life expectancy is short (ii) mitigate an unacceptable risk to public or private safety due to limb drop or the like (iii) rectify or prevent extensive damage to a building of value as comprising any of the following: A. a Local Heritage Place B. a State Heritage Place C. a substantial building of value and there is no reasonable alternative to rectify or prevent such damage other than to undertake a tree damaging activity (iv) reduce an unacceptable hazard associated with a tree within 20m of an existing residential, tourist accommodation or other habitable building from bushfire (v) treat disease or otherwise in the general interests of the health of the tree and / or (vi) maintain the aesthetic appearance and structural integrity of the tree (b) in relation to a significant tree, tree-damaging activity is avoided unless all reasonable remedial treatments and measures have been determined to be ineffective.	DTS/DPF 1.3 None are applicable.
PO 1.4 A tree-damaging activity in connection with other development satisfies all the following: (a) it accommodates the reasonable development of land in accordance with the relevant zone or subzone where such development might not otherwise be possible (b) in the case of a significant tree, all reasonable development options and design solutions have been considered to prevent substantial tree-damaging activity occurring.	DTS/DPF 1.4 None are applicable.

Ground work affecting trees	
PO 2.1 Regulated and significant trees, including their root systems, are not unduly compromised by excavation and / or filling of land, or the sealing of surfaces within the vicinity of the tree to support their retention and health.	DTS/DPF 2.1 None are applicable.
Land Division	
PO 3.1 Land division results in an allotment configuration that enables its subsequent development and the retention of regulated and significant trees as far as is reasonably practicable.	DTS/DPF 3.1 Land division where: (a) there are no regulated or significant trees located within or adjacent to the plan of division or (b) the application demonstrates that an area exists to accommodate subsequent development of proposed allotments after an allowance has been made for a tree protection zone around any regulated tree within and adjacent to the plan of division.

Procedural Matters (PM) - Referrals

The following table identifies classes of development / activities that require referral in this Overlay and the applicable referral body. It sets out the purpose of the referral as well as the relevant statutory reference from Schedule 9 of the Planning, Development and Infrastructure (General) Regulations 2017.

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference
None	None	None	None

Traffic Generating Development Overlay

Assessment Provisions (AP)

Desired Outcome	
DO 1	Safe and efficient operation of Urban Transport Routes and Major Urban Transport Routes for all road users.
DO 2	Provision of safe and efficient access to and from urban transport routes and major urban transport routes.

Performance Outcomes (PO) and Deemed to Satisfy (DTS) / Designated Performance Feature (DPF) Criteria

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature

Traffic Generating Development	
PO 1.1 Development designed to minimise its potential impact on the safety, efficiency and functional performance of the State Maintained Road network.	DTS/DPF 1.1 Access is obtained directly from a State Maintained Road where it involves any of the following types of development: (a) land division creating 50 or more additional allotments (b) commercial development with a gross floor area of 10,000m2 or more (c) retail development with a gross floor area of 2,000m2 or more (d) a warehouse or transport depot with a gross leasable floor area of 8,000m2 or more (e) industry with a gross floor area of 20,000m2 or more (f) educational facilities with a capacity of 250 students or more.
PO 1.2 Access points sited and designed to accommodate the type and volume of traffic likely to be generated by development.	DTS/DPF 1.2 Access is obtained directly from a State Maintained Road where it involves any of the following types of development: (a) land division creating 50 or more additional allotments (b) commercial development with a gross floor area of 10,000m2 or more (c) retail development with a gross floor area of 2,000m2 or more (d) a warehouse or transport depot with a gross leasable floor area of 8,000m2 or more (e) industry with a gross floor area of 20,000m2 or more (f) educational facilities with a capacity of 250 students or more.
PO 1.3 Sufficient accessible on-site queuing provided to meet the needs of the development so that queues do not impact on the State Maintained Road network.	DTS/DPF 1.3 Access is obtained directly from a State Maintained Road where it involves any of the following types of development: (a) land division creating 50 or more additional allotments (b) commercial development with a gross floor area of 10,000m2 or more (c) retail development with a gross floor area of 2,000m2 or more (d) a warehouse or transport depot with a gross leasable floor area of 8,000m2 or more (e) industry with a gross floor area of 20,000m2 or more (f) educational facilities with a capacity of 250 students or more.

Procedural Matters (PM) - Referrals

The following table identifies classes of development / activities that require referral in this Overlay and the applicable referral body. It sets out the purpose of the referral as well as the relevant statutory reference from Schedule 9 of the Planning, Development and Infrastructure (General) Regulations 2017.

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference

Except where all of the relevant deemed-to-satisfy criteria are met, any of the following classes of development that are proposed within 250m of a State Maintained Road: (a) land division creating 50 or more additional allotments (b) commercial development with a gross floor area of 10,000m^2 or more (c) retail development with a gross floor area of 2,000m^2 or more (d) a warehouse or transport depot with a gross leasable floor area of 8,000m^2 or more (e) industry with a gross floor area of 20,000m^2 or more (f) educational facilities with a capacity of 250 students or more.	Commissioner of Highways.	To provide expert technical assessment and direction to the Relevant Authority on the safe and efficient operation and management of all roads relevant to the Commissioner of Highways as described in the Planning and Design Code.	Development of a class to which Schedule 9 clause 3 item 7 of the Planning, Development and Infrastructure (General) Regulations 2017 applies.

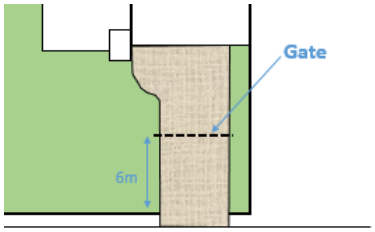
Urban Transport Routes Overlay

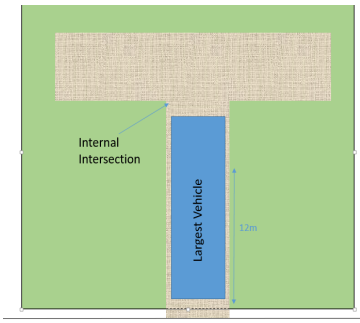
Assessment Provisions (AP)

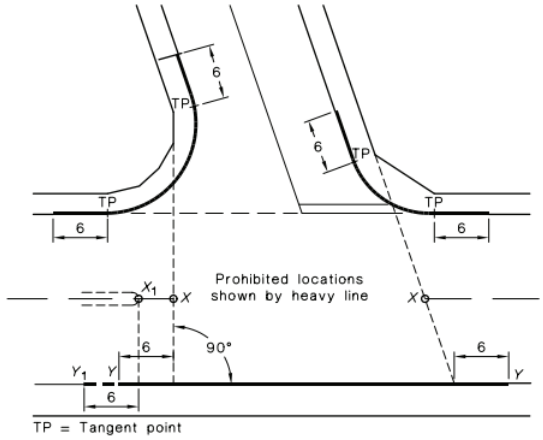
Desired Outcome	
DO 1	Safe and efficient operation of Urban Transport Routes for all road users.
DO 2	Provision of safe and efficient access to and from Urban Transport Routes.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Access - Safe Entry and Exit (Traffic Flow)	
PO 1.1 Access is designed to allow safe entry and exit to and from a site to meet the needs of development and minimise traffic flow interference associated with access movements along adjacent State maintained roads.	DTS/DPF 1.1 An access point satisfies (a), (b) or (c): (a) where servicing a single (1) dwelling / residential allotment: (i) it will not result in more than one access point (ii) vehicles can enter and exit the site in a forward direction (iii) vehicles can cross the property boundary at an angle between 70 degrees and 90 degrees (iv) passenger vehicles (with a length up to 5.2m) can enter and exit the site wholly within the kerbside lane of the road (v) it will have a width of between 3m and 4m (measured at the site boundary) (b) where the development will result in 2 and up to 6 dwellings: (i) (i) it will not result in more than one access point servicing the development site

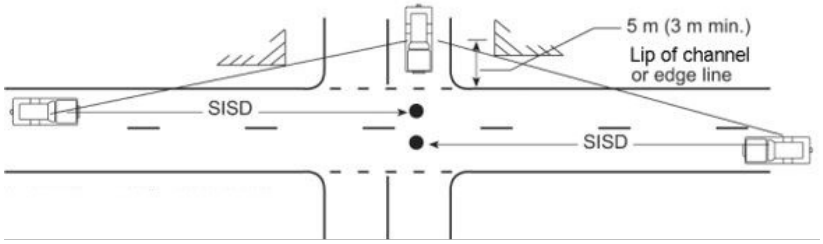
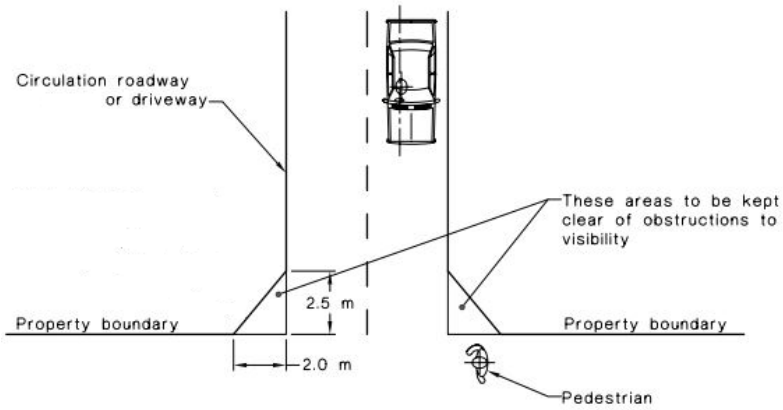
	(ii) vehicles can enter and exit the site in a forward direction (iii) vehicles can cross the property boundary at an angle between 70 degrees and 90 degrees (iv) passenger vehicles (with a length up to 5.2m) can enter and exit the site wholly within the kerbside lane of the road (v) it will have a width of between 5.8m to 6m (measured at the site boundary) and an access depth of 6m (measured from the site boundary into the site) (c) where the development will result in 7 or more dwellings, or is a non-residential land use: (i) it will not result in more than one access point servicing the development site (ii) vehicles can enter and exit the site using left turn only movements (iii) vehicles can enter and exit the site in a forward direction (iv) vehicles can cross the property boundary at an angle between 70 degrees and 90 degrees (v) it will have a width of between 6m and 7m (measured at the site boundary), where the development is expected to accommodate vehicles with a length of 6.4m or less (vi) it will have a width of between 6m and 9m (measured at the site boundary), where the development is expected to accommodate vehicles with a length from 6.4m to 8.8m (vii) it will have a width of between 9m and 12m (measured at the site boundary), where the development is expected to accommodate vehicles with a length from 8.8m to 12.5m (viii) provides for simultaneous two-way vehicle movements at the access: A. with entry and exit movements for vehicles with a length up to 5.2m vehicles being fully within the kerbside lane of the road and B. with entry movements of 8.8m vehicles (where relevant) being fully within the kerbside lane of the road and the exit movements of 8.8m vehicles do not cross the centreline of the road.
Access - On-Site Queuing	
PO 2.1 Sufficient accessible on-site queuing adjacent to access points is provided to meet the needs of development so that all vehicle queues can be contained fully within the boundaries of the development site, to minimise interruption on the functional performance of the road and maintain safe vehicle movements.	DTS/DPF 2.1 An access point in accordance with one of the following: (a) will not service, or is not intended to service, more than 6 dwellings and there are no internal driveways, intersections, car parking spaces or gates within 6.0m of the access point (measured from the site boundary into the site) as shown in the following diagram:  (b) will service, or is intended to service, development that will generate less than 60

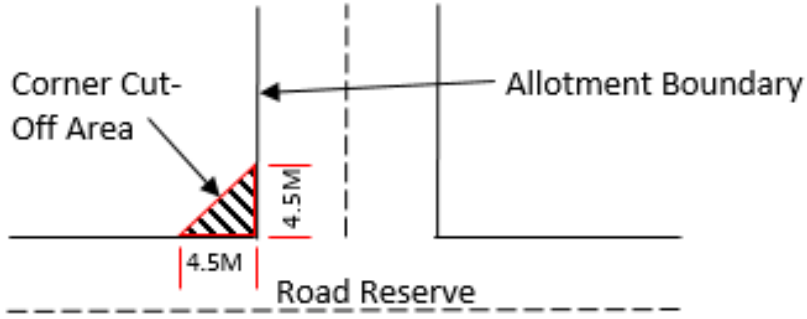
	vehicle movements per day, and: (i) is expected to be serviced by vehicles with a length no greater than 6.4m (ii) there are no internal driveways, intersections, parking spaces or gates within 6.0m of the access point (measured from the site boundary into the site) (c) will service, or is intended to service, development that will generate less than 60 vehicle movements per day, and: (i) is expected to be serviced by vehicles with a length greater than a 6.4m small rigid vehicle (ii) there are no internal driveways, intersections, parking spaces or gates within 6.0m of the access point (measured from the site boundary into the site) (iii) any termination of or change in priority of movement within the main car park aisle is located far enough into the site so that the largest vehicle expected on-site can store fully within the site before being required to stop (iv) all parking or manoeuvring areas for commercial vehicles are located a minimum of 12m or the length of the longest vehicle expected on site from the access (measured from the site boundary into the site) as shown in the following diagram: 
Access - (Location Spacing) - Existing Access Point	
PO 3.1 Existing access points are designed to accommodate the type and volume of traffic likely to be generated by the development.	DTS/DPF 3.1 An existing access point satisfies (a), (b) or (c): (a) it will not service, or is not intended to service, more than 6 dwellings (b) it is not located on a Controlled Access Road and will not service development that will result in (b) a larger class of vehicle expected to access the site using the existing access (c) is not located on a Controlled Access Road and development constitutes: (i) a change of use between an office <500m² gross leasable floor area and a consulting room <500m² gross leasable floor area or vice versa (ii) a change in use from a shop to an office, consulting room or personal or domestic services establishment (iii) a change of use from a consulting room or office <250m² gross leasable floor area to shop <250m² gross leasable floor area (iv) a change of use from a shop <500m² gross leasable floor area to a warehouse <500m² gross leasable floor area (v) an office or consulting room with a <500m² gross leasable floor area.
Access – Location (Spacing) – New Access Points	
PO 4.1	DTS/DPF 4.1

New access points are spaced apart from any existing access point or public road junction to manage impediments to traffic flow and maintain safe and efficient operating conditions on the road.	A new access point satisfies (a), (b) or (c): (a) where a development site is intended to serve between 1 and 6 dwellings and has frontage to a local road (not being a Controlled Access Road) with a speed environment of 60km/h or less, the new access point is provided on the local road and located a minimum of 6.0m from the tangent point as shown in the following diagram:  NOTE: The points marked X_1 and X are respectively at the median end on a divided road and at the intersection of the main road centre-line and the extensions of the side road property lines shown as dotted lines, on an undivided road. On a divided road, dimension Y-Y extends to Point Y_1. (b) where the development site is intended to serve between 1 and 6 dwellings and access from a local road (being a road that is not a State Maintained Road) is not available, the new access: (i) is not located on a Controlled Access Road (ii) is not located on a section of road affected by double barrier lines (iii) will be on a road with a speed environment of 70km/h or less (iv) is located outside of the bold lines on the diagram shown in the diagram following part (a) (v) located minimum of 6m from a median opening or pedestrian crossing (c) where DTS/DPF 4.1 part (a) and (b) do not apply and access from an alternative local road at least 25m from the State Maintained Road is not available, and the access is not located on a Controlled Access Road, the new access is separated in accordance with the following:

Speed Limit	Separation between access points	Separation from public road junctions and merging/terminating lanes
50 km/h or less	No spacing requirement	20m
60 km/h	30m	73m
70 km/h	40m	92m
80 km/h	50m	114m
90 km/h	65m	139m
100 km/h	80m	165m
110 km/h	100m	193m

Access - Location (Sight Lines)	
PO 5.1 Access points are located and designed to accommodate sight lines that enable drivers and pedestrians to navigate potential conflict	DTS/DPF 5.1 An access point satisfies (a) or (b): (a) drivers approaching or exiting an access point have an unobstructed line of sight

points with roads in a controlled and safe manner.	in accordance with the following (measured at a height of 1.1m above the surface of the road): **Speed Limit** / **Separation between access points** / **Separation from public road junctions and merging/terminating lanes** 40 km/h or less: 40m / 73m 50 km/h: 55m / 97m 60 km/h: 73m / 123m 70 km/h: 92m / 151m 80 km/h: 114m / 181m 90 km/h: 139m / 214m 100 km/h: 165m / 248m 110km/h: 193m / 285m  (b) pedestrian sightlines in accordance with the following diagram: 
Access – Mud and Debris	
PO 6.1 Access points constructed to minimise mud or other debris being carried or transferred onto the road to ensure safe road operating conditions.	DTS/DPF 6.1 Where the road has an unsealed shoulder and the road is not kerbed, the access way is sealed from the edge of seal on the road for a minimum of 10m or to the property boundary (whichever is closer).
Access - Stormwater	
PO 7.1 Access points are designed to minimise negative impact on roadside drainage of water.	DTS/DPF 7.1 Development does not: (a) decrease the capacity of an existing drainage point (b) restrict or prevent the flow of stormwater through an existing drainage point and system.

Building on Road Reserve	
PO 8.1 Buildings or structures that encroach onto, above or below road reserves are designed and sited to minimise impact on safe movements by all road users.	DTS/DPF 8.1 Buildings or structures are not located on, above or below the road reserve.
Public Road Junctions	
PO 9.1 New junctions with a public road (including the opening of unmade public road junctions) or modifications to existing road junctions are located and designed to ensure safe operating conditions are maintained on the State Maintained Road.	DTS/DPF 9.1 Development does not comprise any of the following: (a) creating a new junction with a public road (b) opening an unmade public road junction (c) modifying an existing public road junction.
Corner Cut-Offs	
PO 10.1 Development is located and designed to maintain sightlines for drivers turning into and out of public road junctions to contribute to driver safety.	DTS/DPF 10.1 Development does not involve building work, or building work is located wholly outside the land shown as 'Corner Cut-Off Area' in the following diagram: 

Procedural Matters (PM) - Referrals

The following table identifies classes of development / activities that require referral in this Overlay and the applicable referral body. It sets out the purpose of the referral as well as the relevant statutory reference from Schedule 9 of the Planning, Development and Infrastructure (General) Regulations 2017.

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference
Except where all of the relevant deemed-to-satisfy criteria are met, development (including the division of land) that involves any of the following to/on a State Maintained Road or within 25 metres of an intersection with any such road: (a) creation of a new access or junction (b) alterations to an existing access or public road junction (except where deemed to be minor in the opinion of the relevant authority)	Commissioner of Highways.	To provide expert technical assessment and direction to the Relevant Authority on the safe and efficient operation and management of all roads relevant to the Commissioner of Highways as described in the Planning and Design Code.	Development of a class to which Schedule 9 clause 3 item 7 of the Planning, Development and Infrastructure (General)

(c) development that changes the nature of vehicular movements or increase the number or frequency of movements through an existing access (except where deemed to be minor in the opinion of the relevant authority).			Regulations 2017 applies.

Water Resources Overlay

Assessment Provisions (AP)

Desired Outcome	
DO 1	Protection of the quality of surface waters considering adverse water quality impacts associated with projected reductions in rainfall and warmer air temperatures as a result of climate change.
DO 2	Maintain the conveyance function and natural flow paths of watercourses to assist in the management of flood waters and stormwater runoff.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Water Catchment	
PO 1.1 Watercourses and their beds, banks, wetlands and floodplains (1% AEP flood extent) are not damaged or modified and are retained in their natural state, except where modification is required for essential access or maintenance purposes.	DTS/DPF 1.1 None are applicable.
PO 1.2 Development avoids interfering with the existing hydrology or water regime of swamps and wetlands other than to improve the existing conditions to enhance environmental values.	DTS/DPF 1.2 None are applicable.
PO 1.3 Wetlands and low-lying areas providing habitat for native flora and fauna are not drained, except temporarily for essential management purposes to enhance environmental values.	DTS/DPF 1.3 None are applicable.
PO 1.4 Watercourses, areas of remnant native vegetation, or areas prone to erosion that are capable of natural regeneration are fenced off to limit stock access.	DTS/DPF 1.4 None are applicable.
PO 1.5	DTS/DPF 1.5

Development that increases surface water run-off includes a suitably sized strip of vegetated land on each side of a watercourse to filter runoff to: (a) reduce the impacts on native aquatic ecosystems (b) minimise soil loss eroding into the watercourse.	A strip of land 20m or more wide measured from the top of existing banks on each side of the watercourse is free from development, livestock use and revegetated with locally indigenous vegetation.
PO 1.6 Development resulting in the depositing or placing of an object or solid material in a watercourse or lake occurs only where it involves any of the following: (a) the construction of an erosion control structure (b) devices or structures used to extract or regulate water flowing in a watercourse (c) devices used for scientific purposes (d) the rehabilitation of watercourses.	DTS/DPF 1.6 None are applicable.
PO 1.7 Watercourses, floodplains (1% AEP flood extent) and wetlands protected and enhanced by retaining and protecting existing native vegetation.	DTS/DPF 1.7 None are applicable.
PO 1.8 Watercourses, floodplains (1% AEP flood extent) and wetlands are protected and enhanced by stabilising watercourse banks and reducing sediments and nutrients entering the watercourse.	DTS/DPF 1.8 None are applicable.
PO 1.9 Dams, water tanks and diversion drains are located and constructed to maintain the quality and quantity of flows required to meet environmental and downstream needs.	DTS/DPF 1.9 None are applicable.

Procedural Matters (PM) - Referrals

The following table identifies classes of development / activities that require referral in this Overlay and the applicable referral body. It sets out the purpose of the referral as well as the relevant statutory reference from Schedule 9 of the Planning, Development and Infrastructure (General) Regulations 2017.

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference
None	None	None	None

Part 4 - General Development Policies

Advertisements

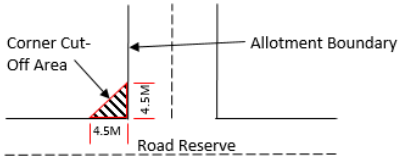
Assessment Provisions (AP)

Desired Outcome	
DO 1	Advertisements and advertising hoardings are appropriate to context, efficient and effective in communicating with the public, limited in number to avoid clutter, and do not create hazard.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Appearance	
PO 1.1 Advertisements are compatible and integrated with the design of the building and/or land they are located on.	DTS/DPF 1.1 Advertisements attached to a building satisfy all of the following: (a) are not located in a Neighbourhood-type zone (b) where they are flush with a wall: (i) if located at canopy level, are in the form of a fascia sign (ii) if located above canopy level: A. do not have any part rising above parapet height B. are not attached to the roof of the building (c) where they are not flush with a wall: (i) if attached to a verandah, no part of the advertisement protrudes beyond the outer limits of the verandah structure (ii) if attached to a two-storey building: A. has no part located above the finished floor level of the second storey of the building B. does not protrude beyond the outer limits of any verandah structure below C. does not have a sign face that exceeds 1m2 per side. (d) if located below canopy level, are flush with a wall (e) if located at canopy level, are in the form of a fascia sign (f) if located above a canopy: (i) are flush with a wall (ii) do not have any part rising above parapet height (iii) are not attached to the roof of the building. (g) if attached to a verandah, no part of the advertisement protrudes beyond the outer limits of the verandah structure (h) if attached to a two-storey building, have no part located above the finished floor level of the second storey of the building

	(i) where they are flush with a wall, do not, in combination with any other existing sign, cover more than 15% of the building facade to which they are attached.
PO 1.2 Advertising hoardings do not disfigure the appearance of the land upon which they are situated or the character of the locality.	DTS/DPF 1.2 Where development comprises an advertising hoarding, the supporting structure is: (a) concealed by the associated advertisement and decorative detailing or (b) not visible from an adjacent public street or thoroughfare, other than a support structure in the form of a single or dual post design.
PO 1.3 Advertising does not encroach on public land or the land of an adjacent allotment.	DTS/DPF 1.3 Advertisements and/or advertising hoardings are contained within the boundaries of the site.
PO 1.4 Where possible, advertisements on public land are integrated with existing structures and infrastructure.	DTS/DPF 1.4 Advertisements on public land that meet at least one of the following: (a) achieves Advertisements DTS/DPF 1.1 (b) are integrated with a bus shelter.
PO 1.5 Advertisements and/or advertising hoardings are of a scale and size appropriate to the character of the locality.	DTS/DPF 1.5 None are applicable.
Proliferation of Advertisements	
PO 2.1 Proliferation of advertisements is minimised to avoid visual clutter and untidiness.	DTS/DPF 2.1 No more than one freestanding advertisement is displayed per occupancy.
PO 2.2 Multiple business or activity advertisements are co-located and coordinated to avoid visual clutter and untidiness.	DTS/DPF 2.2 Advertising of a multiple business or activity complex is located on a single advertisement fixture or structure.
PO 2.3 Proliferation of advertisements attached to buildings is minimised to avoid visual clutter and untidiness.	DTS/DPF 2.3 Advertisements satisfy all of the following: (a) are attached to a building (b) other than in a Neighbourhood-type zone, where they are flush with a wall, cover no more than 15% of the building facade to which they are attached (c) do not result in more than one sign per occupancy that is not flush with a wall.
Advertising Content	
PO 3.1 Advertisements are limited to information relating to the lawful use of land they are located on to assist is the ready identification of the activity or activities on the land and avoids unrelated content that	DTS/DPF 3.1 Advertisements contain information limited to a lawful existing or proposed activity or activities on the same site as the advertisement.

contributes to visual clutter and untidiness.	
Amenity Impacts	
PO 4.1 Light spill from advertisement illumination does not unreasonably compromise the amenity of sensitive receivers.	DTS/DPF 4.1 Advertisements do not incorporate any illumination.
Safety	
PO 5.1 Advertisements and/or advertising hoardings erected on a verandah or projecting from a building wall are designed and located to allow for safe and convenient pedestrian access.	DTS/DPF 5.1 Advertisements have a minimum clearance of 2.5m between the top of the footpath and base of the underside of the sign.
PO 5.2 Advertisements and/or advertising hoardings do not distract or create a hazard to drivers through excessive illumination.	DTS/DPF 5.2 No advertisement illumination is proposed.
PO 5.3 Advertisements and/or advertising hoardings do not create a hazard to drivers by: (a) being liable to interpretation by drivers as an official traffic sign or signal (b) obscuring or impairing drivers' view of official traffic signs or signals (c) obscuring or impairing drivers' view of features of a road that are potentially hazardous (such as junctions, bends, changes in width and traffic control devices) or other road or rail vehicles at/or approaching level crossings.	DTS/DPF 5.3 Advertisements satisfy all of the following: (a) are not located in a public road or rail reserve (b) are located wholly outside the land shown as 'Corner Cut-Off Area' in the following diagram 
PO 5.4 Advertisements and/or advertising hoardings do not create a hazard by distracting drivers from the primary driving task at a location where the demands on driver concentration are high.	DTS/DPF 5.4 Advertisements and/or advertising hoardings are not located along or adjacent to a road having a speed limit of 80km/h or more.
PO 5.5 Advertisements and/or advertising hoardings provide sufficient clearance from the road carriageway to allow for safe and convenient movement by all road users.	DTS/DPF 5.5 Where the advertisement or advertising hoarding is: (a) on a kerbed road with a speed zone of 60km/h or less, the advertisement or advertising hoarding is located at least 0.6m from the roadside edge of the kerb (b) on an unkerbed road with a speed zone of 60km/h or less, the advertisement or advertising hoarding is located at least 5.5m from the edge of the seal (c) on any other kerbed or unkerbed road, the advertisement or advertising hoarding is located a minimum of the following distance from the roadside edge of the kerb or the seal: (a) 110 km/h road - 14m (b) 100 km/h road - 13m (c) 90 km/h road - 10m (d) 70 or 80 km/h road - 8.5m.

PO 5.6 Advertising near signalised intersections does not cause unreasonable distraction to road users through illumination, flashing lights, or moving or changing displays or messages.	DTS/DPF 5.6 Advertising: (a) is not illuminated (b) does not incorporate a moving or changing display or message (c) does not incorporate a flashing light(s).

Animal Keeping and Horse Keeping

Assessment Provisions (AP)

Desired Outcome	
DO 1	Animals are kept at a density that is not beyond the carrying capacity of the land and in a manner that minimises their adverse effects on the environment, local amenity and surrounding development.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Siting and Design	
PO 1.1 Animal keeping, horse keeping and associated activities do not create adverse impacts on the environment or the amenity of the locality.	DTS/DPF 1.1 None are applicable.
PO 1.2 Animal keeping and horse keeping is located and managed to minimise the potential transmission of disease to other operations where animals are kept.	DTS/DPF 1.2 None are applicable.
Horse Keeping	
PO 2.1 Water from stable wash-down areas is directed to appropriate absorption areas and/or drainage pits to minimise pollution of land and water.	DTS/DPF 2.1 None are applicable.
PO 2.2 Stables, horse shelters or associated yards are sited appropriate distances away from sensitive receivers and/or allotments in other ownership to avoid adverse impacts from dust, erosion and odour.	DTS/DPF 2.2 Stables, horse shelters and associated yards are sited in accordance with all of the following: (a) 30m or more from any sensitive receivers (existing or approved) on land in other ownership (b) where an adjacent allotment is vacant and in other

	ownership, 30m or more from the boundary of that allotment.
PO 2.3 All areas accessible to horses are separated from septic tank effluent disposal areas to protect the integrity of that system. Stable flooring is constructed with an impervious material to facilitate regular cleaning.	DTS/DPF 2.3 Septic tank effluent disposal areas are enclosed with a horse-proof barrier such as a fence to exclude horses from this area.
PO 2.4 To minimise environmental harm and adverse impacts on water resources, stables, horse shelters and associated yards are appropriately set back from a watercourse.	DTS/DPF 2.4 Stables, horse shelters and associated yards are set back 50m or more from a watercourse.
PO 2.5 Stables, horse shelters and associated yards are located on slopes that are stable to minimise the risk of soil erosion and water runoff.	DTS/DPF 2.5 Stables, horse shelters and associated yards are not located on land with a slope greater than 10% (1-in-10).
Kennels	
PO 3.1 Kennel flooring is constructed with an impervious material to facilitate regular cleaning.	DTS/DPF 3.1 The floors of kennels satisfy all of the following: (a) are constructed of impervious concrete (b) are designed to be self-draining when washed down.
PO 3.2 Kennels and exercise yards are designed and sited to minimise noise nuisance to neighbours through measures such as: (a) adopting appropriate separation distances (b) orientating openings away from sensitive receivers.	DTS/DPF 3.2 Kennels are sited 500m or more from the nearest sensitive receiver on land in other ownership.
PO 3.3 Dogs are regularly observed and managed to minimise nuisance impact on adjoining sensitive receivers from animal behaviour.	DTS/DPF 3.3 Kennels are sited in association with a permanent dwelling on the land.
Wastes	
PO 4.1 Storage of manure, used litter and other wastes (other than wastewater lagoons) is designed, constructed and managed to minimise attracting and harbouring vermin.	DTS/DPF 4.1 None are applicable.
PO 4.2 Facilities for the storage of manure, used litter and other wastes (other than wastewater lagoons) are located to minimise the potential for polluting water resources.	DTS/DPF 4.2 Waste storage facilities (other than wastewater lagoons) are located outside the 1% AEP flood event areas.

Aquaculture

Assessment Provisions (AP)

Desired Outcome	
DO 1	Aquaculture facilities are developed in an ecologically, economically and socially sustainable manner to support an equitable sharing of marine, coastal and inland resources and mitigate conflict with other water-based and land-based uses.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Land-based Aquaculture	
PO 1.1 Land-based aquaculture and associated components are sited and designed to mitigate adverse impacts on nearby sensitive receivers.	DTS/DPF 1.1 Land-based aquaculture and associated components are located to satisfy all of the following: (a) 200m or more from a sensitive receiver in other ownership (b) 500m or more from the boundary of a zone primarily intended to accommodate sensitive receivers.
PO 1.2 Land-based aquaculture and associated components are sited and designed to prevent surface flows from entering ponds in a 1% AEP sea flood level event.	DTS/DPF 1.2 None are applicable.
PO 1.3 Land-based aquaculture and associated components are sited and designed to prevent pond leakage that would pollute groundwater.	DTS/DPF 1.3 None are applicable.
PO 1.4 Land-based aquaculture and associated components are sited and designed to prevent farmed species escaping and entering into any waters.	DTS/DPF 1.4 None are applicable.
PO 1.5 Land-based aquaculture and associated components, including intake and discharge pipes, are designed to minimise the need to traverse sensitive areas to minimise impact on the natural environment.	DTS/DPF 1.5 None are applicable.
PO 1.6 Pipe inlets and outlets associated with land-based aquaculture are sited and designed to minimise the risk of disease transmission.	DTS/DPF 1.6 None are applicable.
PO 1.7 Storage areas associated with aquaculture activity are integrated with the use of the land and sited and designed to minimise their visual impact on the surrounding environment.	DTS/DPF 1.7 None are applicable.

Marine Based Aquaculture	
PO 2.1 Marine aquaculture is sited and designed to minimise its adverse impacts on sensitive ecological areas including: (a) creeks and estuaries (b) wetlands (c) significant seagrass and mangrove communities (d) marine habitats and ecosystems.	DTS/DPF 2.1 None are applicable.
PO 2.2 Marine aquaculture is sited in areas with adequate water current to disperse sediments and dissolve particulate wastes to prevent the build-up of waste that may cause environmental harm.	DTS/DPF 2.2 None are applicable.
PO 2.3 Marine aquaculture is designed to not involve discharge of human waste on the site, on any adjacent land or into nearby waters.	DTS/DPF 2.3 None are applicable.
PO 2.4 Marine aquaculture (other than inter-tidal aquaculture) is located an appropriate distance seaward of the high water mark.	DTS/DPF 2.4 Marine aquaculture development is located 100m or more seaward of the high water mark.
PO 2.5 Marine aquaculture is sited and designed to not obstruct or interfere with: (a) areas of high public use (b) areas, including beaches, used for recreational activities such as swimming, fishing, skiing, sailing and other water sports (c) areas of outstanding visual or environmental value (d) areas of high tourism value (e) areas of important regional or state economic activity, including commercial ports, wharfs and jetties (f) the operation of infrastructure facilities including inlet and outlet pipes associated with the desalination of sea water.	DTS/DPF 2.5 None are applicable.
PO 2.6 Marine aquaculture is sited and designed to minimise interference and obstruction to the natural processes of the coastal and marine environment.	DTS/DPF 2.6 None are applicable.
PO 2.7 Marine aquaculture is designed to be as unobtrusive as practicable by incorporating measures such as: (a) using feed hoppers painted in subdued colours and suspending them as close as possible to the surface of the water (b) positioning structures to protrude the minimum distance practicable above the surface of the water (c) avoiding the use of shelters and structures above cages and platforms unless necessary to exclude predators and	DTS/DPF 2.7 None are applicable.

protected species from interacting with the farming structures and/or stock inside the cages, or for safety reasons (d) positioning racks, floats and other farm structures in unobtrusive locations landward from the shoreline.	
PO 2.8 Access, launching and maintenance facilities utilise existing established roads, tracks, ramps and paths to or from the sea where possible to minimise environmental and amenity impacts.	DTS/DPF 2.8 None are applicable.
PO 2.9 Access, launching and maintenance facilities are developed as common user facilities and are co-located where practicable to mitigate adverse impacts on coastal areas.	DTS/DPF 2.9 None are applicable.
PO 2.10 Marine aquaculture is sited to minimise potential impacts on, and to protect the integrity of, reserves under the *National Parks and Wildlife Act 1972*.	DTS/DPF 2.10 Marine aquaculture is located 1000m or more seaward of the boundary of any reserve under the *National Parks and Wildlife Act 1972*.
PO 2.11 Onshore storage, cooling and processing facilities do not impair the coastline and its visual amenity by: (a) being sited, designed, landscaped and of a scale to reduce the overall bulk and appearance of buildings and complement the coastal landscape (b) making provision for appropriately sited and designed vehicular access arrangements, including using existing vehicular access arrangements as far as practicable (c) incorporating appropriate waste treatment and disposal.	DTS/DPF 2.11 None are applicable.
Navigation and Safety	
PO 3.1 Marine aquaculture sites are suitably marked to maintain navigational safety.	DTS/DPF 3.1 None are applicable.
PO 3.2 Marine aquaculture is sited to provide adequate separation between farms for safe navigation.	DTS/DPF 3.2 None are applicable.
Environmental Management	
PO 4.1 Marine aquaculture is maintained to prevent hazards to people and wildlife, including breeding grounds and habitats of native marine mammals and terrestrial fauna, especially migratory species.	DTS/DPF 4.1 None are applicable.
PO 4.2 Marine aquaculture is designed to facilitate the relocation or removal of structures in the case of emergency such as oil spills, algal blooms and altered water flows.	DTS/DPF 4.2 None are applicable.
PO 4.3	DTS/DPF 4.3

Marine aquaculture provides for progressive or future reclamation of disturbed areas ahead of, or upon, decommissioning.	None are applicable.
PO 4.4 Aquaculture operations incorporate measures for the removal and disposal of litter, disused material, shells, debris, detritus, dead animals and animal waste to prevent pollution of waters, wetlands, or the nearby coastline.	DTS/DPF 4.4 None are applicable.

Beverage Production in Rural Areas

Assessment Provisions (AP)

Desired Outcome	
DO 1	Mitigation of potential amenity and environmental impacts of value-adding beverage production facilities such as wineries, distilleries, cideries and breweries.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Odour and Noise	
PO 1.1 Beverage production activities are designed and sited to minimise odour impacts on rural amenity.	DTS/DPF 1.1 None are applicable.
PO 1.2 Beverage production activities are designed and sited to minimise noise impacts on sensitive receivers.	DTS/DPF 1.2 None are applicable.
PO 1.3 Fermentation, distillation, manufacturing, storage, packaging and bottling activities occur within enclosed buildings to improve the visual appearance within a locality and manage noise associated with these activities.	DTS/DPF 1.3 None are applicable.
PO 1.4 Breweries are designed to minimise odours emitted during boiling and fermentation stages of production.	DTS/DPF 1.4 Brew kettles are fitted with a vapour condenser.
PO 1.5 Beverage production solid wastes are stored in a manner that	DTS/DPF 1.5 Solid waste from beverage production is collected and stored in

minimises odour impacts on sensitive receivers in other ownership.	sealed containers and removed from the site within 48 hours.
Water Quality	
PO 2.1 Beverage production wastewater management systems (including wastewater irrigation) are set back from watercourses to minimise adverse impacts on water resources.	DTS/DPF 2.1 Wastewater management systems are set back 50m or more from the banks of watercourses and bores.
PO 2.2 The storage or disposal of chemicals or hazardous substances is undertaken in a manner to prevent pollution of water resources.	DTS/DPF 2.2 None are applicable.
PO 2.3 Stormwater runoff from areas that may cause contamination due to beverage production activities (including vehicle movements and machinery operations) is drained to an onsite stormwater treatment system to manage potential environmental impacts.	DTS/DPF 2.3 None are applicable.
PO 2.4 Stormwater runoff from areas unlikely to cause contamination by beverage production and associated activities (such as roof catchments and clean hard-paved surfaces) is diverted away from beverage production areas and wastewater management systems.	DTS/DPF 2.4 None are applicable.
Wastewater Irrigation	
PO 3.1 Beverage production wastewater irrigation systems are designed and located to not contaminate soil and surface and ground water resources or damage crops.	DTS/DPF 3.1 None are applicable.
PO 3.2 Beverage production wastewater irrigation systems are designed and located to minimise impact on amenity and avoid spray drift onto adjoining land.	DTS/DPF 3.2 Beverage production wastewater is not irrigated within 50m of any dwelling in other ownership.
PO 3.3 Beverage production wastewater is not irrigated onto areas that pose an undue risk to the environment or amenity such as: (a) waterlogged areas (b) land within 50m of a creek, swamp or domestic or stock water bore (c) land subject to flooding (d) steeply sloping land (e) rocky or highly permeable soil overlaying an unconfined aquifer.	DTS/DPF 3.3 None are applicable.

Bulk Handling and Storage Facilities

Assessment Provisions (AP)

Desired Outcome	
DO 1	Facilities for the bulk handling and storage of agricultural, mineral, petroleum, rock, ore or other similar commodities are designed to minimise adverse impacts on transport networks, the landscape and surrounding land uses.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Siting and Design	
PO 1.1 Bulk handling and storage facilities are sited and designed to minimise risks of adverse air quality and noise impacts on sensitive receivers.	DTS/DPF 1.1 Facilities for the handling, storage and dispatch of commodities in bulk (excluding processing) meet the following minimum separation distances from sensitive receivers: (a) bulk handling of agricultural crop products, rock, ores, minerals, petroleum products or chemicals at a wharf or wharf side facility (including sea-port grain terminals), where the handling of these materials into or from vessels does not exceed 100 tonnes per day: 300m or more from residential premises not associated with the facility (b) bulk handling of agricultural crop products, rock, ores, minerals, petroleum products or chemicals to or from any commercial storage facility: 300m or more from residential premises not associated with the facility (c) bulk petroleum storage involving individual containers with a capacity up to 200 litres and a total on-site storage capacity not exceeding 1,000 cubic metres: 500m or more (d) coal handling with: a. capacity up to 1 tonne per day or a storage capacity up to 50 tonnes: 500m or more b. capacity exceeding 1 tonne per day but not exceeding 100 tonnes per day or a storage capacity exceeding 50 tonnes but not exceeding 5000 tonnes: 1000m or more.
Buffers and Landscaping	
PO 2.1 Bulk handling and storage facilities incorporate a buffer area for the establishment of dense landscaping adjacent road frontages to enhance the appearance of land and buildings from public thoroughfares.	DTS/DPF 2.1 None are applicable.
PO 2.2 Bulk handling and storage facilities incorporate landscaping to assist with screening and dust filtration.	DTS/DPF 2.2 None are applicable.
Access and Parking	
PO 3.1	DTS/DPF 3.1

Roadways and vehicle parking areas associated with bulk handling and storage facilities are designed and surfaced to control dust emissions and prevent drag out of material from the site.	Roadways and vehicle parking areas are sealed with an all-weather surface.
Slipways, Wharves and Pontoons	
PO 4.1 Slipways, wharves and pontoons used for the handling of bulk materials (such as fuel, oil, catch, bait and the like) incorporate catchment devices to avoid the release of materials into adjacent waters.	DTS/DPF 4.1 None are applicable.

Clearance from Overhead Powerlines

Assessment Provisions (AP)

Desired Outcome	
DO 1	Protection of human health and safety when undertaking development in the vicinity of overhead transmission powerlines.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
PO 1.1 Buildings are adequately separated from aboveground powerlines to minimise potential hazard to people and property.	DTS/DPF 1.1 One of the following is satisfied: (a) a declaration is provided by or on behalf of the applicant to the effect that the proposal would not be contrary to the regulations prescribed for the purposes of section 86 of the *Electricity Act 1996* (b) there are no aboveground powerlines adjoining the site that are the subject of the proposed development.

Design

Assessment Provisions (AP)

Desired Outcome	
DO 1	Development is: (a) contextual - by considering, recognising and carefully responding to its natural surroundings or built environment and positively contributes to the character of the immediate area (b) durable - fit for purpose, adaptable and long lasting

	(c) inclusive - by integrating landscape design to optimise pedestrian and cyclist usability, privacy and equitable access, and promoting the provision of quality spaces integrated with the public realm that can be used for access and recreation and help optimise security and safety both internally and within the public realm, for occupants and visitors (d) sustainable - by integrating sustainable techniques into the design and siting of development and landscaping to improve community health, urban heat, water management, environmental performance, biodiversity and local amenity and to minimise energy consumption.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
All development	
External Appearance	
PO 1.1 Buildings reinforce corners through changes in setback, articulation, materials, colour and massing (including height, width, bulk, roof form and slope).	DTS/DPF 1.1 None are applicable.
PO 1.2 Where zero or minor setbacks are desirable, development provides shelter over footpaths (in the form of verandahs, awnings, canopies and the like, with adequate lighting) to positively contribute to the walkability, comfort and safety of the public realm.	DTS/DPF 1.2 None are applicable.
PO 1.3 Building elevations facing the primary street (other than ancillary buildings) are designed and detailed to convey purpose, identify main access points and complement the streetscape.	DTS/DPF 1.3 None are applicable.
PO 1.4 Plant, exhaust and intake vents and other technical equipment is integrated into the building design to minimise visibility from the public realm and negative impacts on residential amenity by: (a) positioning plant and equipment in unobtrusive locations viewed from public roads and spaces (b) screening rooftop plant and equipment from view (c) when located on the roof of non-residential development, locating the plant and equipment as far as practicable from adjacent sensitive land uses.	DTS/DPF 1.4 Development does not incorporate any structures that protrude beyond the roofline.
PO 1.5 The negative visual impact of outdoor storage, waste management, loading and service areas is minimised by integrating them into the building design and screening them from public view (such as fencing, landscaping and built form) taking into account the form of development contemplated in the relevant zone.	DTS/DPF 1.5 None are applicable.
Safety	
PO 2.1 Development maximises opportunities for passive surveillance of the	DTS/DPF 2.1 None are applicable.

public realm by providing clear lines of sight, appropriate lighting and the use of visually permeable screening wherever practicable.	
PO 2.2 Development is designed to differentiate public, communal and private areas.	DTS/DPF 2.2 None are applicable.
PO 2.3 Buildings are designed with safe, perceptible and direct access from public street frontages and vehicle parking areas.	DTS/DPF 2.3 None are applicable.
PO 2.4 Development at street level is designed to maximise opportunities for passive surveillance of the adjacent public realm.	DTS/DPF 2.4 None are applicable.
PO 2.5 Common areas and entry points of buildings (such as the foyer areas of residential buildings), and non-residential land uses at street level, maximise passive surveillance from the public realm to the inside of the building at night.	DTS/DPF 2.5 None are applicable.
Landscaping	
PO 3.1 Soft landscaping and tree planting is incorporated to: (a) minimise heat absorption and reflection (b) maximise shade and shelter (c) maximise stormwater infiltration (d) enhance the appearance of land and streetscapes (e) contribute to biodiversity.	DTS/DPF 3.1 None are applicable.
PO 3.2 Soft landscaping and tree planting maximises the use of locally indigenous plant species, incorporates plant species best suited to current and future climate conditions and avoids pest plant and weed species.	DTS/DPF 3.2 None are applicable.
Environmental Performance	
PO 4.1 Buildings are sited, oriented and designed to maximise natural sunlight access and ventilation to main activity areas, habitable rooms, common areas and open spaces.	DTS/DPF 4.1 None are applicable.
PO 4.2 Buildings are sited and designed to maximise passive environmental performance and minimise energy consumption and reliance on mechanical systems, such as heating and cooling.	DTS/DPF 4.2 None are applicable.
PO 4.3 Buildings incorporate climate-responsive techniques and features such as building and window orientation, use of eaves, verandahs and shading structures, water harvesting, at ground landscaping,	DTS/DPF 4.3 None are applicable.

green walls, green roofs and photovoltaic cells.	
Water Sensitive Design	
PO 5.1 Development is sited and designed to maintain natural hydrological systems without negatively impacting: (a) the quantity and quality of surface water and groundwater (b) the depth and directional flow of surface water and groundwater (c) the quality and function of natural springs.	DTS/DPF 5.1 None are applicable.
On-site Waste Treatment Systems	
PO 6.1 Dedicated on-site effluent disposal areas do not include any areas to be used for, or could be reasonably foreseen to be used for, private open space, driveways or car parking.	DTS/DPF 6.1 Effluent disposal drainage areas do not: (a) encroach within an area used as private open space or result in less private open space than that specified in Design Table 1 - Private Open Space (b) use an area also used as a driveway (c) encroach within an area used for on-site car parking or result in less on-site car parking than that specified in Transport, Access and Parking Table 1 - General Off-Street Car Parking Requirements or Table 2 - Off-Street Car Parking Requirements in Designated Areas.
Carparking Appearance	
PO 7.1 Development facing the street is designed to minimise the negative impacts of any semi-basement and undercroft car parking on the streetscapes through techniques such as: (a) limiting protrusion above finished ground level (b) screening through appropriate planting, fencing and mounding (c) limiting the width of openings and integrating them into the building structure.	DTS/DPF 7.1 None are applicable.
PO 7.2 Vehicle parking areas are appropriately located, designed and constructed to minimise impacts on adjacent sensitive receivers through measures such as ensuring they are attractively developed and landscaped, screen fenced and the like.	DTS/DPF 7.2 None are applicable.
PO 7.3 Safe, legible, direct and accessible pedestrian connections are provided between parking areas and the development.	DTS/DPF 7.3 None are applicable.
PO 7.4 Street level vehicle parking areas incorporate tree planting to provide shade and reduce solar heat absorption and reflection.	DTS/DPF 7.4 None are applicable.
PO 7.5 Street level parking areas incorporate soft landscaping to improve	DTS/DPF 7.5 None are applicable.

visual appearance when viewed from within the site and from public places.	
PO 7.6 Vehicle parking areas and associated driveways are landscaped to provide shade and positively contribute to amenity.	DTS/DPF 7.6 None are applicable.
PO 7.7 Vehicle parking areas and access ways incorporate integrated stormwater management techniques such as permeable or porous surfaces, infiltration systems, drainage swales or rain gardens that integrate with soft landscaping.	DTS/DPF 7.7 None are applicable.
Earthworks and sloping land	
PO 8.1 Development, including any associated driveways and access tracks, minimises the need for earthworks to limit disturbance to natural topography.	DTS/DPF 8.1 Development does not involve any of the following: (a) excavation exceeding a vertical height of 1m (b) filling exceeding a vertical height of 1m (c) a total combined excavation and filling vertical height of 2m or more.
PO 8.2 Driveways and access tracks are designed and constructed to allow safe and convenient access on sloping land (with a gradient exceeding 1 in 8).	DTS/DPF 8.2 Driveways and access tracks on sloping land (with a gradient exceeding 1 in 8) satisfy (a) and (b): (a) do not have a gradient exceeding 25% (1-in-4) at any point along the driveway (b) are constructed with an all-weather trafficable surface.
PO 8.3 Driveways and access tracks on sloping land (with a gradient exceeding 1 in 8): (a) do not contribute to the instability of embankments and cuttings (b) provide level transition areas for the safe movement of people and goods to and from the development (c) are designed to integrate with the natural topography of the land.	DTS/DPF 8.3 None are applicable.
PO 8.4 Development on sloping land (with a gradient exceeding 1 in 8) avoids the alteration of natural drainage lines and includes on-site drainage systems to minimise erosion.	DTS/DPF 8.4 None are applicable.
PO 8.5 Development does not occur on land at risk of landslip nor increases the potential for landslip or land surface instability.	DTS/DPF 8.5 None are applicable.
Fences and Walls	
PO 9.1	DTS/DPF 9.1

Fences, walls and retaining walls are of sufficient height to maintain privacy and security without unreasonably impacting the visual amenity and adjoining land's access to sunlight or the amenity of public places.	None are applicable.
PO 9.2 Landscaping incorporated on the low side of retaining walls is visible from public roads and public open space to minimise visual impacts.	DTS/DPF 9.2 A vegetated landscaped strip 1m wide or more is provided against the low side of a retaining wall.
Overlooking / Visual Privacy (in building 3 storeys or less)	
PO 10.1 Development mitigates direct overlooking from upper level windows to habitable rooms and private open spaces of adjoining residential uses.	DTS/DPF 10.1 Upper level windows facing side or rear boundaries shared with a residential allotment/site satisfy one of the following: (a) are permanently obscured to a height of 1.5m above finished floor level and are fixed or not capable of being opened more than 200mm (b) have sill heights greater than or equal to 1.5m above finished floor level (c) incorporate screening with a maximum of 25% openings, permanently fixed no more than 500mm from the window surface and sited adjacent to any part of the window less than 1.5 m above the finished floor level.
PO 10.2 Development mitigates direct overlooking from balconies, terraces and decks to habitable rooms and private open space of adjoining residential uses.	DTS/DPF 10.2 One of the following is satisfied: (a) the longest side of the balcony or terrace will face a public road, public road reserve or public reserve that is at least 15m wide in all places faced by the balcony or terrace or (b) all sides of balconies or terraces on upper building levels are permanently obscured by screening with a maximum 25% transparency/openings fixed to a minimum height of: (i) 1.5m above finished floor level where the balcony is located at least 15 metres from the nearest habitable window of a dwelling on adjacent land or (ii) 1.7m above finished floor level in all other cases
All Residential development	
Front elevations and passive surveillance	
PO 11.1 Dwellings incorporate windows along primary street frontages to encourage passive surveillance and make a positive contribution to the streetscape.	DTS/DPF 11.1 Each dwelling with a frontage to a public street: (a) includes at least one window facing the primary street from a habitable room that has a minimum internal room dimension of 2.4m (b) has an aggregate window area of at least $2m^2$ facing the primary street.
PO 11.2	DTS/DPF 11.2

Dwellings incorporate entry doors within street frontages to address the street and provide a legible entry point for visitors.	Dwellings with a frontage to a public street have an entry door visible from the primary street boundary.
Outlook and amenity	
PO 12.1 Living rooms have an external outlook to provide a high standard of amenity for occupants.	DTS/DPF 12.1 A living room of a dwelling incorporates a window with an outlook towards the street frontage or private open space, public open space, or waterfront areas.
PO 12.2 Bedrooms are separated or shielded from active communal recreation areas, common access areas and vehicle parking areas and access ways to mitigate noise and artificial light intrusion.	DTS/DPF 12.2 None are applicable.
Ancillary Development	
PO 13.1 Residential ancillary buildings and structures are sited and designed to not detract from the streetscape or appearance of buildings on the site or neighbouring properties.	DTS/DPF 13.1 Ancillary buildings: (a) are ancillary to a dwelling erected on the same site (b) have a floor area not exceeding 60m2 (c) are not constructed, added to or altered so that any part is situated: (i) in front of any part of the building line of the dwelling to which it is ancillary or (ii) within 900mm of a boundary of the allotment with a secondary street (if the land has boundaries on two or more roads) (d) in the case of a garage or carport, the garage or carport: (i) is set back at least 5.5m from the boundary of the primary street (ii) when facing a primary street or secondary street, has a total door / opening not exceeding: A. for dwellings of single building level - 7m in width or 50% of the site frontage, whichever is the lesser B. for dwellings comprising two or more building levels at the building line fronting the same public street - 7m in width (e) if situated on a boundary (not being a boundary with a primary street or secondary street), do not exceed a length of 11.5m unless: (i) a longer wall or structure exists on the adjacent site and is situated on the same allotment boundary and (ii) the proposed wall or structure will be built along the same length of boundary as the existing adjacent wall or structure to the same or lesser extent (f) if situated on a boundary of the allotment (not being a boundary with a primary street or secondary street), all walls or structures on the boundary will not exceed 45% of the length of that boundary (g) will not be located within 3m of any other wall along the

	same boundary unless on an adjacent site on that boundary there is an existing wall of a building that would be adjacent to or about the proposed wall or structure (h) have a wall height or post height not exceeding 3m above natural ground level (i) have a roof height where no part of the roof is more than 5m above the natural ground level (j) if clad in sheet metal, is pre-colour treated or painted in a non-reflective colour (k) retains a total area of soft landscaping in accordance with (i) or (ii), whichever is less: (i) a total area as determined by the following table: <table><tr><th>Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m^2)</th><th>Minimum percentage of site</th></tr><tr><td><150</td><td>10%</td></tr><tr><td>150-200</td><td>15%</td></tr><tr><td>201-450</td><td>20%</td></tr><tr><td>>450</td><td>25%</td></tr></table> (ii) the amount of existing soft landscaping prior to the development occurring.
PO 13.2 Ancillary buildings and structures do not impede on-site functional requirements such as private open space provision or car parking requirements and do not result in over-development of the site.	DTS/DPF 13.2 Ancillary buildings and structures do not result in: (a) less private open space than specified in Design in Urban Areas Table 1 - Private Open Space (b) less on-site car parking than specified in Transport, Access and Parking Table 1 - General Off-Street Car Parking Requirements or Table 2 - Off-Street Car Parking Requirements in Designated Areas.
PO 13.3 Fixed plant and equipment in the form of pumps and/or filtration systems for a swimming pool or spa is positioned and/or housed to not cause unreasonable noise nuisance to adjacent sensitive receivers.	DTS/DPF 13.3 The pump and/or filtration system is ancillary to a dwelling erected on the same site and is: (a) enclosed in a solid acoustic structure that is located at least 5m from the nearest habitable room located on an adjoining allotment or (b) located at least 12m from the nearest habitable room located on an adjoining allotment.
Garage appearance	
PO 14.1 Garaging is designed to not detract from the streetscape or appearance of a dwelling.	DTS/DPF 14.1 Garages and carports facing a street: (a) are situated so that no part of the garage or carport is in front of any part of the building line of the dwelling

	(b) are set back at least 5.5m from the boundary of the primary street (c) have a garage door / opening not exceeding 7m in width (d) have a garage door /opening width not exceeding 50% of the site frontage unless the dwelling has two or more building levels at the building line fronting the same public street.
Massing	
PO 15.1 The visual mass of larger buildings is reduced when viewed from adjoining allotments or public streets.	DTS/DPF 15.1 None are applicable
Dwelling additions	
PO 16.1 Dwelling additions are sited and designed to not detract from the streetscape or amenity of adjoining properties and do not impede on-site functional requirements.	DTS / DPF 16.1 Dwelling additions: (a) are not constructed, added to or altered so that any part is situated closer to a public street (b) do not result in: (i) excavation exceeding a vertical height of 1m (ii) filling exceeding a vertical height of 1m (iii) a total combined excavation and filling vertical height of 2m or more (iv) less Private Open Space than specified in Design Table 1 - Private Open Space (v) less on-site parking than specified in Transport Access and Parking Table 1 - General Off-Street Car Parking Requirements or Table 2 - Off-Street Car Parking Requirements in Designated Areas (vi) upper level windows facing side or rear boundaries unless: A. they are permanently obscured to a height of 1.5m above finished floor level that is fixed or not capable of being opened more than 200mm or B. have sill heights greater than or equal to 1.5m above finished floor level or C. incorporate screening to a height of 1.5m above finished floor level (vii) all sides of balconies or terraces on upper building levels are permanently obscured by screening with a maximum 25% transparency/openings fixed to a minimum height of: A. 1.5m above finished floor level where the balcony is located at least 15 metres from the nearest habitable window of a dwelling on adjacent land B. 1.7m above finished floor level in all other cases.
Private Open Space	

PO 17.1 Dwellings are provided with suitable sized areas of usable private open space to meet the needs of occupants.	DTS/DPF 17.1 Private open space is provided in accordance with Design Table 1 - Private Open Space.
Water Sensitive Design	
PO 18.1 Residential development creating a common driveway / access includes stormwater management systems that minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system, watercourses or other water bodies.	DTS/DPF 18.1 Residential development creating a common driveway / access that services 5 or more dwellings achieves the following stormwater runoff outcomes: (a) 80 per cent reduction in average annual total suspended solids (b) 60 per cent reduction in average annual total phosphorus (c) 45 per cent reduction in average annual total nitrogen.
PO 18.2 Residential development creating a common driveway / access includes a stormwater management system designed to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure that the development does not increase the peak flows in downstream systems.	DTS/DPF 18.2 Development creating a common driveway / access that services 5 or more dwellings: (a) maintains the pre-development peak flow rate from the site based upon a 0.35 runoff coefficient for the 18.1% AEP 30-minute storm and the stormwater runoff time to peak is not increased or captures and retains the difference in pre-development runoff volume (based upon a 0.35 runoff coefficient) vs post development runoff volume from the site for an 18.1% AEP 30-minute storm; and (b) manages site generated stormwater runoff up to and including the 1% AEP flood event to avoid flooding of buildings.
Car parking, access and manoeuvrability	
PO 19.1 Enclosed parking spaces are of a size and dimensions to be functional, accessible and convenient.	DTS/DPF 19.1 Residential car parking spaces enclosed by fencing, walls or other structures have the following internal dimensions (separate from any waste storage area): (a) single width car parking spaces: (i) a minimum length of 5.4m per space (ii) a minimum width of 3.0m (iii) a minimum garage door width of 2.4m (b) double width car parking spaces (side by side): (i) a minimum length of 5.4m (ii) a minimum width of 5.4m (iii) minimum garage door width of 2.4m per space.
PO 19.2 Uncovered parking spaces are of a size and dimensions to be functional, accessible and convenient.	DTS/DPF 19.2 Uncovered car parking spaces have: (a) a minimum length of 5.4m (b) a minimum width of 2.4m (c) a minimum width between the centre line of the space and any fence, wall or other obstruction of 1.5m

PO 19.3 Driveways are located and designed to facilitate safe access and egress while maximising land available for street tree planting, landscaped street frontages, domestic waste collection and on-street parking.	DTS/DPF 19.3 Driveways and access points on sites with a frontage to a public road of 10m or less have a width between 3.0 and 3.2 metres measured at the property boundary and are the only access point provided on the site.
PO 19.4 Vehicle access is safe, convenient, minimises interruption to the operation of public roads and does not interfere with street infrastructure or street trees.	DTS/DPF 19.4 Vehicle access to designated car parking spaces satisfy (a) or (b): (a) is provided via a lawfully existing or authorised access point or an access point for which consent has been granted as part of an application for the division of land (b) where newly proposed: (i) is set back 6m or more from the tangent point of an intersection of 2 or more roads (ii) is set back outside of the marked lines or infrastructure dedicating a pedestrian crossing (iii) does not involve the removal, relocation or damage to of mature street trees, street furniture or utility infrastructure services.
PO 19.5 Driveways are designed to enable safe and convenient vehicle movements from the public road to on-site parking spaces.	DTS/DPF 19.5 Driveways are designed and sited so that: (a) the gradient from the place of access on the boundary of the allotment to the finished floor level at the front of the garage or carport is not steeper than 1:4 on average (b) they are aligned relative to the street boundary so that there is no more than a 20 degree deviation from 90 degrees between the centreline of any dedicated car parking space to which it provides access (measured from the front of that space) and the street boundary (c) if located to provide access from an alley, lane or right of way - the alley, land or right or way is at least 6.2m wide along the boundary of the allotment / site
PO 19.6 Driveways and access points are designed and distributed to optimise the provision of on-street visitor parking.	DTS/DPF 19.6 Where on-street parking is available abutting the site's street frontage, on-street parking is retained in accordance with the following requirements: (a) minimum 0.33 on-street spaces per dwelling on the site (rounded up to the nearest whole number) (b) minimum car park length of 5.4m where a vehicle can enter or exit a space directly (c) minimum carpark length of 6m for an intermediate space located between two other parking spaces or to an end obstruction where the parking is indented.
Waste storage	
PO 20.1 Provision is made for the adequate and convenient storage of waste bins in a location screened from public view.	DTS/DPF 20.1 None are applicable.

Design of Transportable Dwellings	
PO 21.1 The sub-floor space beneath transportable buildings is enclosed to give the appearance of a permanent structure.	DTS/DPF 21.1 Buildings satisfy (a) or (b): (a) are not transportable or (b) the sub-floor space between the building and ground level is clad in a material and finish consistent with the building.
Group dwelling, residential flat buildings and battle-axe development	
Amenity	
PO 22.1 Dwellings are of a suitable size to accommodate a layout that is well organised and provides a high standard of amenity for occupants.	DTS/DPF 22.1 Dwellings have a minimum internal floor area in accordance with the following table: **Number of bedrooms** — **Minimum internal floor area** Studio — 35m^2 1 bedroom — 50m^2 2 bedroom — 65m^2 3+ bedrooms — 80m^2 and any dwelling over 3 bedrooms provides an additional 15m^2 for every additional bedroom
PO 22.2 The orientation and siting of buildings minimises impacts on the amenity, outlook and privacy of occupants and neighbours.	DTS/DPF 22.2 None are applicable.
PO 22.3 Development maximises the number of dwellings that face public open space and public streets and limits dwellings oriented towards adjoining properties.	DTS/DPF 22.3 None are applicable.
PO 22.4 Battle-axe development is appropriately sited and designed to respond to the existing neighbourhood context.	DTS/DPF 22.4 Dwelling sites/allotments are not in the form of a battle-axe arrangement.
Communal Open Space	
PO 23.1 Private open space provision may be substituted for communal open space which is designed and sited to meet the recreation and amenity needs of residents.	DTS/DPF 23.1 None are applicable.
PO 23.2 Communal open space is of sufficient size and dimensions to cater	DTS/DPF 23.2 Communal open space incorporates a minimum dimension of 5

for group recreation.	metres.
PO 23.3 Communal open space is designed and sited to: (a) be conveniently accessed by the dwellings which it services (b) have regard to acoustic, safety, security and wind effects.	DTS/DPF 23.3 None are applicable.
PO 23.4 Communal open space contains landscaping and facilities that are functional, attractive and encourage recreational use.	DTS/DPF 23.4 None are applicable.
PO 23.5 Communal open space is designed and sited to: (a) in relation to rooftop or elevated gardens, minimise overlooking into habitable room windows or onto the useable private open space of other dwellings (b) in relation to ground floor communal space, be overlooked by habitable rooms to facilitate passive surveillance.	DTS/DPF 23.5 None are applicable.
Carparking, access and manoeuvrability	
PO 24.1 Driveways and access points are designed and distributed to optimise the provision of on-street visitor parking.	DTS/DPF 24.1 Where on-street parking is available directly adjacent the site, on-street parking is retained adjacent the subject site in accordance with the following requirements: (a) minimum 0.33 on-street car parks per proposed dwellings (rounded up to the nearest whole number) (b) minimum car park length of 5.4m where a vehicle can enter or exit a space directly (c) minimum carpark length of 6m for an intermediate space located between two other parking spaces or to an end obstruction where the parking is indented.
PO 24.2 The number of vehicular access points onto public roads is minimised to reduce interruption of the footpath and positively contribute to public safety and walkability.	DTS/DPF 24.2 Access to group dwellings or dwellings within a residential flat building is provided via a single common driveway.
PO 24.3 Residential driveways that service more than one dwelling are designed to allow safe and convenient movement.	DTS/DPF 24.3 Driveways that service more than 1 dwelling or a dwelling on a battle-axe site: (a) have a minimum width of 3m (b) for driveways servicing more than 3 dwellings: (i) have a width of 5.5m or more and a length of 6m or more at the kerb of the primary street (ii) where the driveway length exceeds 30m, incorporate a passing point at least every 30 metres with a minimum width of 5.5m and a minimum length of 6m.
PO 24.4	DTS/DPF 24.4

Residential driveways in a battle-axe configuration are designed to allow safe and convenient movement.	Where in a battle-axe configuration, a driveway servicing one dwelling has a minimum width of 3m.
PO 24.5 Residential driveways that service more than one dwelling are designed to allow passenger vehicles to enter and exit the site and manoeuvre within the site in a safe and convenient manner.	DTS/DPF 24.5 Driveways providing access to more than one dwelling, or a dwelling on a battle-axe site, allow a B85 passenger vehicle to enter and exit the garages or parking spaces in no more than a three-point turn manoeuvre.
PO 24.6 Dwellings are adequately separated from common driveways and manoeuvring areas.	DTS/DPF 24.6 Dwelling walls with entry doors or ground level habitable room windows are set back at least 1.5m from any driveway or area designated for the movement and manoeuvring of vehicles.
Soft Landscaping	
PO 25.1 Soft landscaping is provided between dwellings and common driveways to improve the outlook for occupants and appearance of common areas.	DTS/DPF 25.1 Other than where located directly in front of a garage or a building entry, soft landscaping with a minimum dimension of 1m is provided between a dwelling and common driveway.
PO 25.2 Soft landscaping is provided that improves the appearance of common driveways.	DTS/DPF 25.2 Where a common driveway is located directly adjacent the side or rear boundary of the site, soft landscaping with a minimum dimension of 1m is provided between the driveway and site boundary (excluding along the perimeter of a passing point).
Site Facilities / Waste Storage	
PO 26.1 Provision is made for suitable mailbox facilities close to the major pedestrian entry to the site or conveniently located considering the nature of accommodation and mobility of occupants.	DTS/DPF 26.1 None are applicable.
PO 26.2 Provision is made for suitable external clothes drying facilities.	DTS/DPF 26.2 None are applicable.
PO 26.3 Provision is made for suitable household waste and recyclable material storage facilities which are: (a) located away, or screened, from public view, and (b) conveniently located in proximity to dwellings and the waste collection point.	DTS/DPF 26.3 None are applicable.
PO 26.4 Waste and recyclable material storage areas are located away from dwellings.	DTS/DPF 26.4 Dedicated waste and recyclable material storage areas are located at least 3m from any habitable room window.
PO 26.5 Where waste bins cannot be conveniently collected from the street, provision is made for on-site waste collection, designed to accommodate the safe and convenient access, egress and movement of waste collection vehicles.	DTS/DPF 26.5 None are applicable.

PO 26.6 Services including gas and water meters are conveniently located and screened from public view.	DTS/DPF 26.6 None are applicable.
Supported accommodation and retirement facilities	
Siting and Configuration	
PO 27.1 Supported accommodation and housing for aged persons and people with disabilities is located where on-site movement of residents is not unduly restricted by the slope of the land.	DTS/DPF 27.1 None are applicable.
Movement and Access	
PO 28.1 Development is designed to support safe and convenient access and movement for residents by providing: (a) ground-level access or lifted access to all units (b) level entry porches, ramps, paths, driveways, passenger loading areas and areas adjacent to footpaths that allow for the passing of wheelchairs and resting places (c) car parks with gradients no steeper than 1-in-40 and of sufficient area to provide for wheelchair manoeuvrability (d) kerb ramps at pedestrian crossing points.	DTS/DPF 28.1 None are applicable.
Communal Open Space	
PO 29.1 Development is designed to provide attractive, convenient and comfortable indoor and outdoor communal areas to be used by residents and visitors.	DTS/DPF 29.1 None are applicable.
PO 29.2 Private open space provision may be substituted for communal open space which is designed and sited to meet the recreation and amenity needs of residents.	DTS/DPF 29.2 None are applicable.
PO 29.3 Communal open space is of sufficient size and dimensions to cater for group recreation.	DTS/DPF 29.3 Communal open space incorporates a minimum dimension of 5 metres.
PO 29.4 Communal open space is designed and sited to: (a) be conveniently accessed by the dwellings which it services (b) have regard to acoustic, safety, security and wind effects.	DTS/DPF 29.4 None are applicable.
PO 29.5 Communal open space contains landscaping and facilities that are functional, attractive and encourage recreational use.	DTS/DPF 29.5 None are applicable.
PO 29.6 Communal open space is designed and sited to:	DTS/DPF 29.6 None are applicable.

(a) in relation to rooftop or elevated gardens, minimise overlooking into habitable room windows or onto the useable private open space of other dwellings (b) in relation to ground floor communal space, be overlooked by habitable rooms to facilitate passive surveillance.	
Site Facilities / Waste Storage	
PO 30.1 Development is designed to provide storage areas for personal items and specialised equipment such as small electric powered vehicles, including facilities for the recharging of small electric powered vehicles.	DTS/DPF 30.1 None are applicable.
PO 30.2 Provision is made for suitable mailbox facilities close to the major pedestrian entry to the site or conveniently located considering the nature of accommodation and mobility of occupants.	DTS/DPF 30.2 None are applicable.
PO 30.3 Provision is made for suitable external clothes drying facilities.	DTS/DPF 28.3 None are applicable.
PO 30.4 Provision is made for suitable household waste and recyclable material storage facilities conveniently located and screened from public view.	DTS/DPF 30.4 None are applicable.
PO 30.5 Waste and recyclable material storage areas are located away from dwellings.	DTS/DPF 30.5 Dedicated waste and recyclable material storage areas are located at least 3m from any habitable room window.
PO 30.6 Provision is made for on-site waste collection where 10 or more bins are to be collected at any one time.	DTS/DPF 30.6 None are applicable.
PO 30.7 Services including gas and water meters are conveniently located and screened from public view.	DTS/DPF 30.7 None are applicable.
All non-residential development	
Water Sensitive Design	
PO 31.1 Development likely to result in significant risk of export of litter, oil or grease includes stormwater management systems designed to minimise pollutants entering stormwater.	DTS/DPF 31.1 None are applicable.
PO 31.2 Water discharged from a development site is of a physical, chemical and biological condition equivalent to or better than its pre-developed state.	DTS/DPF 31.2 None are applicable.
Wash-down and Waste Loading and Unloading	

PO 32.1	DTS/DPF 32.1
Areas for activities including loading and unloading, storage of waste refuse bins in commercial and industrial development or wash-down areas used for the cleaning of vehicles, vessels, plant or equipment are: (a) designed to contain all wastewater likely to pollute stormwater within a bunded and roofed area to exclude the entry of external surface stormwater run-off (b) paved with an impervious material to facilitate wastewater collection (c) of sufficient size to prevent 'splash-out' or 'over-spray' of wastewater from the wash-down area (d) designed to drain wastewater to either: (i) a treatment device such as a sediment trap and coalescing plate oil separator with subsequent disposal to a sewer, private or Community Wastewater Management Scheme or (ii) a holding tank and its subsequent removal off-site on a regular basis.	None are applicable.

Table 1 - Private Open Space

Dwelling Type	Minimum Rate
Dwelling (at ground level)	Total private open space area: (a) Site area <301m2: 24m2 located behind the building line. (b) Site area ≥ 301m2: 60m2 located behind the building line. Minimum directly accessible from a living room: 16m2 / with a minimum dimension 3m.
Dwelling (above ground level)	Studio (no separate bedroom): 4m^2 with a minimum dimension 1.8m One bedroom: 8m^2 with a minimum dimension 2.1m Two bedroom dwelling: 11m^2 with a minimum dimension 2.4m Three + bedroom dwelling: 15m^2 with a minimum dimension 2.6m
Cabin or caravan (permanently fixed to the ground) in a residential park or a caravan and tourist park	Total area: 16m^2, which may be used as second car parking space, provided on each site intended for residential occupation.

Design in Urban Areas

Assessment Provisions (AP)

Desired Outcome	
DO 1	Development is: (a) contextual - by considering, recognising and carefully responding to its natural surroundings or built environment and positively contributing to the character of the locality (b) durable - fit for purpose, adaptable and long lasting (c) inclusive - by integrating landscape design to optimise pedestrian and cyclist usability, privacy and equitable access and promoting the provision of quality spaces integrated with the public realm that can be used for access and recreation and help optimise security and safety both internally and within the public realm, for occupants and visitors (d) sustainable - by integrating sustainable techniques into the design and siting of development and landscaping to improve community health, urban heat, water management, environmental performance, biodiversity and local amenity and to minimise energy consumption.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
All Development	
External Appearance	
PO 1.1 Buildings reinforce corners through changes in setback, articulation, materials, colour and massing (including height, width, bulk, roof form and slope).	DTS/DPF 1.1 None are applicable.
PO 1.2 Where zero or minor setbacks are desirable, development provides shelter over footpaths (in the form of verandahs, awnings, canopies and the like, with adequate lighting) to positively contribute to the walkability, comfort and safety of the public realm.	DTS/DPF 1.2 None are applicable.
PO 1.3 Building elevations facing the primary street (other than ancillary buildings) are designed and detailed to convey purpose, identify main access points and complement the streetscape.	DTS/DPF 1.3 None are applicable.
PO 1.4 Plant, exhaust and intake vents and other technical equipment are integrated into the building design to minimise visibility from the public realm and negative impacts on residential amenity by: (a) positioning plant and equipment discretely, in unobtrusive locations as viewed from public roads and spaces (b) screening rooftop plant and equipment from view (c) when located on the roof of non-residential development, locating the plant and equipment as far as practicable from adjacent sensitive land uses.	DTS/DPF 1.4 Development does not incorporate any structures that protrude beyond the roofline.
PO 1.5 The negative visual impact of outdoor storage, waste management, loading and service areas is minimised by integrating them into the building design and screening them from public view (such as	DTS/DPF 1.5 None are applicable.

fencing, landscaping and built form), taking into account the form of development contemplated in the relevant zone.	
Safety	
PO 2.1 Development maximises opportunities for passive surveillance of the public realm by providing clear lines of sight, appropriate lighting and the use of visually permeable screening wherever practicable.	DTS/DPF 2.1 None are applicable.
PO 2.2 Development is designed to differentiate public, communal and private areas.	DTS/DPF 2.2 None are applicable.
PO 2.3 Buildings are designed with safe, perceptible and direct access from public street frontages and vehicle parking areas.	DTS/DPF 2.3 None are applicable.
PO 2.4 Development at street level is designed to maximise opportunities for passive surveillance of the adjacent public realm.	DTS/DPF 2.4 None are applicable.
PO 2.5 Common areas and entry points of buildings (such as the foyer areas of residential buildings) and non-residential land uses at street level, maximise passive surveillance from the public realm to the inside of the building at night.	DTS/DPF 2.5 None are applicable.
Landscaping	
PO 3.1 Soft landscaping and tree planting are incorporated to: (a) minimise heat absorption and reflection (b) maximise shade and shelter (c) maximise stormwater infiltration (d) enhance the appearance of land and streetscapes.	DTS/DPF 3.1 None are applicable.
Environmental Performance	
PO 4.1 Buildings are sited, oriented and designed to maximise natural sunlight access and ventilation to main activity areas, habitable rooms, common areas and open spaces.	DTS/DPF 4.1 None are applicable.
PO 4.2 Buildings are sited and designed to maximise passive environmental performance and minimise energy consumption and reliance on mechanical systems, such as heating and cooling.	DTS/DPF 4.2 None are applicable.
PO 4.3 Buildings incorporate climate responsive techniques and features such as building and window orientation, use of eaves, verandahs and shading structures, water harvesting, at ground landscaping, green walls, green roofs and photovoltaic cells.	DTS/DPF 4.3 None are applicable.

Water Sensitive Design	
PO 5.1 Development is sited and designed to maintain natural hydrological systems without negatively impacting: (a) the quantity and quality of surface water and groundwater (b) the depth and directional flow of surface water and groundwater (c) the quality and function of natural springs.	DTS/DPF 5.1 None are applicable.
On-site Waste Treatment Systems	
PO 6.1 Dedicated on-site effluent disposal areas do not include any areas to be used for, or could be reasonably foreseen to be used for, private open space, driveways or car parking.	DTS/DPF 6.1 Effluent disposal drainage areas do not: (a) encroach within an area used as private open space or result in less private open space than that specified in Design in Urban Areas Table 1 - Private Open Space (b) use an area also used as a driveway (c) encroach within an area used for on-site car parking or result in less on-site car parking than that specified in Transport, Access and Parking Table 1 - General Off-Street Car Parking Requirements or Table 2 - Off-Street Car Parking Requirements in Designated Areas.
Car parking appearance	
PO 7.1 Development facing the street is designed to minimise the negative impacts of any semi-basement and undercroft car parking on streetscapes through techniques such as: (a) limiting protrusion above finished ground level (b) screening through appropriate planting, fencing and mounding (c) limiting the width of openings and integrating them into the building structure.	DTS/DPF 7.1 None are applicable.
PO 7.2 Vehicle parking areas appropriately located, designed and constructed to minimise impacts on adjacent sensitive receivers through measures such as ensuring they are attractively developed and landscaped, screen fenced and the like.	DTS/DPF 7.2 None are applicable.
PO 7.3 Safe, legible, direct and accessible pedestrian connections are provided between parking areas and the development.	DTS/DPF 7.3 None are applicable.
PO 7.4 Street-level vehicle parking areas incorporate tree planting to provide shade, reduce solar heat absorption and reflection.	DTS/DPF 7.4 Vehicle parking areas that are open to the sky and comprise 10 or more car parking spaces include a shade tree with a mature canopy of 4m diameter spaced for each 10 car parking spaces provided and a landscaped strip on any road frontage of a minimum dimension of 1m.
PO 7.5 Street level parking areas incorporate soft landscaping to improve	DTS/DPF 7.5 Vehicle parking areas comprising 10 or more car parking spaces

visual appearance when viewed from within the site and from public places.	include soft landscaping with a minimum dimension of: (a) 1m along all public road frontages and allotment boundaries (b) 1m between double rows of car parking spaces.
PO 7.6 Vehicle parking areas and associated driveways are landscaped to provide shade and positively contribute to amenity.	DTS/DPF 7.6 None are applicable.
PO 7.7 Vehicle parking areas and access ways incorporate integrated stormwater management techniques such as permeable or porous surfaces, infiltration systems, drainage swales or rain gardens that integrate with soft landscaping.	DTS/DPF 7.7 None are applicable.
Earthworks and sloping land	
PO 8.1 Development, including any associated driveways and access tracks, minimises the need for earthworks to limit disturbance to natural topography.	DTS/DPF 8.1 Development does not involve any of the following: (a) excavation exceeding a vertical height of 1m (b) filling exceeding a vertical height of 1m (c) a total combined excavation and filling vertical height of 2m or more.
PO 8.2 Driveways and access tracks designed and constructed to allow safe and convenient access on sloping land.	DTS/DPF 8.2 Driveways and access tracks on sloping land (with a gradient exceeding 1 in 8) satisfy (a) and (b): (a) do not have a gradient exceeding 25% (1-in-4) at any point along the driveway (b) are constructed with an all-weather trafficable surface.
PO 8.3 Driveways and access tracks on sloping land (with a gradient exceeding 1 in 8): (a) do not contribute to the instability of embankments and cuttings (b) provide level transition areas for the safe movement of people and goods to and from the development (c) are designed to integrate with the natural topography of the land.	DTS/DPF 8.3 None are applicable.
PO 8.4 Development on sloping land (with a gradient exceeding 1 in 8) avoids the alteration of natural drainage lines and includes on site drainage systems to minimise erosion.	DTS/DPF 8.4 None are applicable.
PO 8.5 Development does not occur on land at risk of landslip or increase the potential for landslip or land surface instability.	DTS/DPF 8.5 None are applicable.
Fences and walls	

PO 9.1 Fences, walls and retaining walls of sufficient height maintain privacy and security without unreasonably impacting visual amenity and adjoining land's access to sunlight or the amenity of public places.	DTS/DPF 9.1 None are applicable.
PO 9.2 Landscaping is incorporated on the low side of retaining walls that are visible from public roads and public open space to minimise visual impacts.	DTS/DPF 9.2 A vegetated landscaped strip 1m wide or more is provided against the low side of a retaining wall.
Overlooking / Visual Privacy (low rise buildings)	
PO 10.1 Development mitigates direct overlooking from upper level windows to habitable rooms and private open spaces of adjoining residential uses in neighbourhood-type zones.	DTS/DPF 10.1 Upper level windows facing side or rear boundaries shared with a residential use in a neighbourhood-type zone: (a) are permanently obscured to a height of 1.5m above finished floor level and are fixed or not capable of being opened more than 125mm (b) have sill heights greater than or equal to 1.5m above finished floor level (c) incorporate screening with a maximum of 25% openings, permanently fixed no more than 500mm from the window surface and sited adjacent to any part of the window less than 1.5 m above the finished floor level.
PO 10.2 Development mitigates direct overlooking from balconies to habitable rooms and private open space of adjoining residential uses in neighbourhood type zones.	DTS/DPF 10.2 One of the following is satisfied: (a) the longest side of the balcony or terrace will face a public road, public road reserve or public reserve that is at least 15m wide in all places faced by the balcony or terrace or (b) all sides of balconies or terraces on upper building levels are permanently obscured by screening with a maximum 25% transparency/openings fixed to a minimum height of: (i) 1.5m above finished floor level where the balcony is located at least 15 metres from the nearest habitable window of a dwelling on adjacent land or (ii) 1.7m above finished floor level in all other cases
Site Facilities / Waste Storage (excluding low rise residential development)	
PO 11.1 Development provides a dedicated area for on-site collection and sorting of recyclable materials and refuse, green organic waste and wash bay facilities for the ongoing maintenance of bins that is adequate in size considering the number and nature of the activities they will serve and the frequency of collection.	DTS/DPF 11.1 None are applicable.
PO 11.2 Communal waste storage and collection areas are located, enclosed and designed to be screened from view from the public domain, open space and dwellings.	DTS/DPF 11.2 None are applicable.
PO 11.3 Communal waste storage and collection areas are designed to be well ventilated and located away from habitable rooms.	DTS/DPF 11.3 None are applicable.
PO 11.4	DTS/DPF 11.4

Communal waste storage and collection areas are designed to allow waste and recycling collection vehicles to enter and leave the site without reversing.	None are applicable.
PO 11.5 For mixed use developments, non-residential waste and recycling storage areas and access provide opportunities for on-site management of food waste through composting or other waste recovery as appropriate.	DTS/DPF 11.5 None are applicable.
All Development - Medium and High Rise	
External Appearance	
PO 12.1 Buildings positively contribute to the character of the local area by responding to local context.	DTS/DPF 12.1 None are applicable.
PO 12.2 Architectural detail at street level and a mixture of materials at lower building levels near the public interface are provided to reinforce a human scale.	DTS/DPF 12.2 None are applicable.
PO 12.3 Buildings are designed to reduce visual mass by breaking up building elevations into distinct elements.	DTS/DPF 12.3 None are applicable.
PO 12.4 Boundary walls visible from public land include visually interesting treatments to break up large blank elevations.	DTS/DPF 12.4 None are applicable.
PO 12.5 External materials and finishes are durable and age well to minimise ongoing maintenance requirements.	DTS/DPF 12.5 Buildings utilise a combination of the following external materials and finishes: (a) masonry (b) natural stone (c) pre-finished materials that minimise staining, discolouring or deterioration.
PO 12.6 Street-facing building elevations are designed to provide attractive, high quality and pedestrian-friendly street frontages.	DTS/DPF 12.6 Building street frontages incorporate: (a) active uses such as shops or offices (b) prominent entry areas for multi-storey buildings (where it is a common entry) (c) habitable rooms of dwellings (d) areas of communal public realm with public art or the like, where consistent with the zone and/or subzone provisions.
PO 12.7 Entrances to multi-storey buildings are safe, attractive, welcoming, functional and contribute to streetscape character.	DTS/DPF 12.7 Entrances to multi-storey buildings are: (a) oriented towards the street (b) clearly visible and easily identifiable from the street and vehicle parking areas (c) designed to be prominent, accentuated and a welcoming feature if there are no active or occupied ground floor

	uses (d) designed to provide shelter, a sense of personal address and transitional space around the entry (e) located as close as practicable to the lift and / or lobby access to minimise the need for long access corridors (f) designed to avoid the creation of potential areas of entrapment.
PO 12.8 Building services, plant and mechanical equipment are screened from the public realm.	DTS/DPF 12.8 None are applicable.
Landscaping	
PO 13.1 Development facing a street provides a well landscaped area that contains a deep soil space to accommodate a tree of a species and size adequate to provide shade, contribute to tree canopy targets and soften the appearance of buildings.	DTS/DPF 13.1 Buildings provide a 4m by 4m deep soil space in front of the building that accommodates a medium to large tree, except where no building setback from front property boundaries is desired.
PO 13.2 Deep soil zones are provided to retain existing vegetation or provide areas that can accommodate new deep root vegetation, including tall trees with large canopies to provide shade and soften the appearance of multi-storey buildings.	DTS/DPF 13.2 Multi-storey development provides deep soil zones and incorporates trees at not less than the following rates, except in a location or zone where full site coverage is desired.

Site area	Minimum deep soil area	Minimum dimension	Tree / deep soil zones
<300 m^2	10 m^2	1.5m	1 small tree / 10 m^2
300-1500 m^2	7% site area	3m	1 medium tree / 30 m^2
>1500 m^2	7% site area	6m	1 large or medium tree / 60 m^2

Tree size and site area definitions	
Small tree	4-6m mature height and 2-4m canopy spread
Medium tree	6-12m mature height and 4-8m canopy spread
Large tree	12m mature height and >8m canopy spread
Site area	The total area for development site, not average area per dwelling

PO 13.3 Deep soil zones with access to natural light are provided to assist in maintaining vegetation health.	DTS/DPF 13.3 None are applicable.

PO 13.4 Unless separated by a public road or reserve, development sites adjacent to any zone that has a primary purpose of accommodating low-rise residential development incorporate a deep soil zone along the common boundary to enable medium to large trees to be retained or established to assist in screening new buildings of 3 or more building levels in height.	DTS/DPF 13.4 Building elements of 3 or more building levels in height are set back at least 6m from a zone boundary in which a deep soil zone area is incorporated.
Environmental	
PO 14.1 Development minimises detrimental micro-climatic impacts on adjacent land and buildings.	DTS/DPF 14.1 None are applicable.
PO 14.2 Development incorporates sustainable design techniques and features such as window orientation, eaves and shading structures, water harvesting and use, green walls and roof designs that enable the provision of rain water tanks (where they are not provided elsewhere on site), green roofs and photovoltaic cells.	DTS/DPF 14.2 None are applicable.
PO 14.3 Development of 5 or more building levels, or 21m or more in height (as measured from natural ground level and excluding roof-mounted mechanical plant and equipment) is designed to minimise the impacts of wind through measures such as: (a) a podium at the base of a tall tower and aligned with the street to deflect wind away from the street (b) substantial verandahs around a building to deflect downward travelling wind flows over pedestrian areas (c) the placement of buildings and use of setbacks to deflect the wind at ground level (d) avoiding tall shear elevations that create windy conditions at street level.	DTS/DPF 14.3 None are applicable.
Car Parking	
PO 15.1 Multi-level vehicle parking structures are designed to contribute to active street frontages and complement neighbouring buildings.	DTS/DPF 15.1 Multi-level vehicle parking structures within buildings: (a) provide land uses such as commercial, retail or other non-car parking uses along ground floor street frontages (b) incorporate facade treatments in building elevations facing along major street frontages that are sufficiently enclosed and detailed to complement adjacent buildings.
PO 15.2 Multi-level vehicle parking structures within buildings complement the surrounding built form in terms of height, massing and scale.	DTS/DPF 15.2 None are applicable.
Overlooking/Visual Privacy	
PO 16.1 Development mitigates direct overlooking of habitable rooms and private open spaces of adjacent residential uses in neighbourhood-	DTS/DPF 16.1 None are applicable.

type zones through measures such as: (a) appropriate site layout and building orientation (b) off-setting the location of balconies and windows of habitable rooms or areas with those of other buildings so that views are oblique rather than direct to avoid direct line of sight (c) building setbacks from boundaries (including building boundary to boundary where appropriate) that interrupt views or that provide a spatial separation between balconies or windows of habitable rooms (d) screening devices that are integrated into the building design and have minimal negative effect on residents' or neighbours' amenity.	
All residential development	
Front elevations and passive surveillance	
PO 17.1 Dwellings incorporate windows facing primary street frontages to encourage passive surveillance and make a positive contribution to the streetscape.	DTS/DPF 17.1 Each dwelling with a frontage to a public street: (a) includes at least one window facing the primary street from a habitable room that has a minimum internal room dimension of 2.4m (b) has an aggregate window area of at least $2m^2$ facing the primary street.
PO 17.2 Dwellings incorporate entry doors within street frontages to address the street and provide a legible entry point for visitors.	DTS/DPF 17.2 Dwellings with a frontage to a public street have an entry door visible from the primary street boundary.
Outlook and Amenity	
PO 18.1 Living rooms have an external outlook to provide a high standard of amenity for occupants.	DTS/DPF 18.1 A living room of a dwelling incorporates a window with an external outlook of the street frontage, private open space, public open space, or waterfront areas.
PO 18.2 Bedrooms are separated or shielded from active communal recreation areas, common access areas and vehicle parking areas and access ways to mitigate noise and artificial light intrusion.	DTS/DPF 18.2 None are applicable.
Ancillary Development	
PO 19.1 Residential ancillary buildings are sited and designed to not detract from the streetscape or appearance of primary residential buildings on the site or neighbouring properties.	DTS/DPF 19.1 Ancillary buildings: (a) are ancillary to a dwelling erected on the same site (b) have a floor area not exceeding 60m2 (c) are not constructed, added to or altered so that any part is situated: (i) in front of any part of the building line of the dwelling to which it is ancillary or (ii) within 900mm of a boundary of the allotment with a secondary street (if the land has boundaries on two or more roads)

(d) in the case of a garage or carport, the garage or carport:

(i) is set back at least 5.5m from the boundary of the primary street

(ii) when facing a primary street or secondary street, has a total door / opening not exceeding:

A. for dwellings of single building level - 7m in width or 50% of the site frontage, whichever is the lesser

B. for dwellings comprising two or more building levels at the building line fronting the same public street - 7m in width

(e) if situated on a boundary (not being a boundary with a primary street or secondary street), do not exceed a length of 11.5m unless:

(i) a longer wall or structure exists on the adjacent site and is situated on the same allotment boundary

and

(ii) the proposed wall or structure will be built along the same length of boundary as the existing adjacent wall or structure to the same or lesser extent

(f) if situated on a boundary of the allotment (not being a boundary with a primary street or secondary street), all walls or structures on the boundary will not exceed 45% of the length of that boundary

(g) will not be located within 3m of any other wall along the same boundary unless on an adjacent site on that boundary there is an existing wall of a building that would be adjacent to or about the proposed wall or structure

(h) have a wall height or post height not exceeding 3m above natural ground level

(i) have a roof height where no part of the roof is more than 5m above the natural ground level

(j) if clad in sheet metal, is pre-colour treated or painted in a non-reflective colour

(k) retains a total area of soft landscaping in accordance with (i) or (ii), whichever is less:

(i) a total area as determined by the following table:

Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m^2)	Minimum percentage of site
<150	10%
150-200	15%
201-450	20%
>450	25%

(ii) the amount of existing soft landscaping prior to the development occurring.

PO 19.2 Ancillary buildings and structures do not impede on-site functional requirements such as private open space provision, car parking requirements or result in over-development of the site.	DTS/DPF 19.2 Ancillary buildings and structures do not result in: (a) less private open space than specified in Design in Urban Areas Table 1 - Private Open Space (b) less on-site car parking than specified in Transport, Access and Parking Table 1 - General Off-Street Car Parking Requirements or Table 2 - Off-Street Car Parking Requirements in Designated Areas.
PO 19.3 Fixed plant and equipment in the form of pumps and/or filtration systems for a swimming pool or spa positioned and/or housed to not cause unreasonable noise nuisance to adjacent sensitive receivers.	DTS/DPF 19.3 The pump and/or filtration system is ancillary to a dwelling erected on the same site and is: (a) enclosed in a solid acoustic structure that is located at least 5m from the nearest habitable room located on an adjoining allotment or (b) located at least 12m from the nearest habitable room located on an adjoining allotment.
Residential Development - Low Rise	
External appearance	
PO 20.1 Garaging is designed to not detract from the streetscape or appearance of a dwelling.	DTS/DPF 20.1 Garages and carports facing a street: (a) are situated so that no part of the garage or carport will be in front of any part of the building line of the dwelling (b) are set back at least 5.5m from the boundary of the primary street (c) have a garage door / opening width not exceeding 7m (d) have a garage door / opening width not exceeding 50% of the site frontage unless the dwelling has two or more building levels at the building line fronting the same public street.
PO 20.2 Dwelling elevations facing public streets and common driveways make a positive contribution to the streetscape and the appearance of common driveway areas.	DTS/DPF 20.2 Each dwelling includes at least 3 of the following design features within the building elevation facing a primary street, and at least 2 of the following design features within the building elevation facing any other public road (other than a laneway) or a common driveway: (a) a minimum of 30% of the building wall is set back an additional 300mm from the building line (b) a porch or portico projects at least 1m from the building wall (c) a balcony projects from the building wall (d) a verandah projects at least 1m from the building wall (e) eaves of a minimum 400mm width extend along the width of the front elevation (f) a minimum 30% of the width of the upper level projects forward from the lower level primary building line by at least 300mm (g) a minimum of two different materials or finishes are incorporated on the walls of the front building elevation,

	with a maximum of 80% of the building elevation in a single material or finish.
PO 20.3 The visual mass of larger buildings is reduced when viewed from adjoining allotments or public streets.	DTS/DPF 20.3 None are applicable
Private Open Space	
PO 21.1 Dwellings are provided with suitable sized areas of usable private open space to meet the needs of occupants.	DTS/DPF 21.1 Private open space is provided in accordance with Design in Urban Areas Table 1 - Private Open Space.
PO 21.2 Private open space is positioned to provide convenient access from internal living areas.	DTS/DPF 21.2 Private open space is directly accessible from a habitable room.
Landscaping	
PO 22.1 Soft landscaping is incorporated into development to: (a) minimise heat absorption and reflection (b) contribute shade and shelter (c) provide for stormwater infiltration and biodiversity (d) enhance the appearance of land and streetscapes.	DTS/DPF 22.1 Residential development incorporates soft landscaping with a minimum dimension of 700mm provided in accordance with (a) and (b): (a) a total area as determined by the following table: **Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m^2)** / **Minimum percentage of site** <150 / 10% 150-200 / 15% >200-450 / 20% >450 / 25% (b) at least 30% of any land between the primary street boundary and the primary building line.
Car parking, access and manoeuvrability	
PO 23.1 Enclosed car parking spaces are of dimensions to be functional, accessible and convenient.	DTS/DPF 23.1 Residential car parking spaces enclosed by fencing, walls or other structures have the following internal dimensions (separate from any waste storage area): (a) single width car parking spaces: (i) a minimum length of 5.4m per space

	(ii) a minimum width of 3.0m (iii) a minimum garage door width of 2.4m (b) double width car parking spaces (side by side): (i) a minimum length of 5.4m (ii) a minimum width of 5.4m (iii) minimum garage door width of 2.4m per space.
PO 23.2 Uncovered car parking space are of dimensions to be functional, accessible and convenient.	DTS/DPF 23.2 Uncovered car parking spaces have: (a) a minimum length of 5.4m (b) a minimum width of 2.4m (c) a minimum width between the centre line of the space and any fence, wall or other obstruction of 1.5m.
PO 23.3 Driveways and access points are located and designed to facilitate safe access and egress while maximising land available for street tree planting, domestic waste collection, landscaped street frontages and on-street parking.	DTS/DPF 23.3 Driveways and access points satisfy (a) or (b): (a) sites with a frontage to a public road of 10m or less, have a width between 3.0 and 3.2 metres measured at the property boundary and are the only access point provided on the site (b) sites with a frontage to a public road greater than 10m: (i) have a maximum width of 5m measured at the property boundary and are the only access point provided on the site; (ii) have a width between 3.0 metres and 3.2 metres measured at the property boundary and no more than two access points are provided on site, separated by no less than 1m.
PO 23.4 Vehicle access is safe, convenient, minimises interruption to the operation of public roads and does not interfere with street infrastructure or street trees.	DTS/DPF 23.4 Vehicle access to designated car parking spaces satisfy (a) or (b): (a) is provided via a lawfully existing or authorised access point or an access point for which consent has been granted as part of an application for the division of land (b) where newly proposed, is set back: (i) 0.5m or more from any street furniture, street pole, infrastructure services pit, or other stormwater or utility infrastructure unless consent is provided from the asset owner (ii) 2m or more from the base of the trunk of a street tree unless consent is provided from the tree owner for a lesser distance (iii) 6m or more from the tangent point of an intersection of 2 or more roads (iv) outside of the marked lines or infrastructure dedicating a pedestrian crossing.
PO 23.5 Driveways are designed to enable safe and convenient vehicle movements from the public road to on-site parking spaces.	DTS/DPF 23.5 Driveways are designed and sited so that: (a) the gradient from the place of access on the boundary of

	the allotment to the finished floor level at the front of the garage or carport is not steeper than 1-in-4 on average (b) they are aligned relative to the street so that there is no more than a 20 degree deviation from 90 degrees between the centreline of any dedicated car parking space to which it provides access (measured from the front of that space) and the road boundary. (c) if located so as to provide access from an alley, lane or right of way - the alley, lane or right or way is at least 6.2m wide along the boundary of the allotment / site
PO 23.6 Driveways and access points are designed and distributed to optimise the provision of on-street visitor parking.	DTS/DPF 23.6 Where on-street parking is available abutting the site's street frontage, on-street parking is retained in accordance with the following requirements: (a) minimum 0.33 on-street spaces per dwelling on the site (rounded up to the nearest whole number) (b) minimum car park length of 5.4m where a vehicle can enter or exit a space directly (c) minimum carpark length of 6m for an intermediate space located between two other parking spaces or to an end obstruction where the parking is indented.
Waste storage	
PO 24.1 Provision is made for the convenient storage of waste bins in a location screened from public view.	DTS/DPF 24.1 Where dwellings abut both side boundaries a waste bin storage area is provided behind the building line of each dwelling that: (a) has a minimum area of $2m^2$ with a minimum dimension of 900mm (separate from any designated car parking spaces or private open space); and (b) has a continuous unobstructed path of travel (excluding moveable objects like gates, vehicles and roller doors) with a minimum width of 800mm between the waste bin storage area and the street.
Design of Transportable Buildings	
PO 25.1 The sub-floor space beneath transportable buildings is enclosed to give the appearance of a permanent structure.	DTS/DPF 25.1 Buildings satisfy (a) or (b): (a) are not transportable (b) the sub-floor space between the building and ground level is clad in a material and finish consistent with the building.
Residential Development - Medium and High Rise (including serviced apartments)	
Outlook and Visual Privacy	
PO 26.1 Ground level dwellings have a satisfactory short range visual outlook to public, communal or private open space.	DTS/DPF 26.1 Buildings: (a) provide a habitable room at ground or first level with a window facing toward the street (b) limit the height / extent of solid walls or fences facing the street to 1.2m high above the footpath level or, where higher, to 50% of the site frontage.

PO 26.2 The visual privacy of ground level dwellings within multi-level buildings is protected.	DTS/DPF 26.2 The finished floor level of ground level dwellings in multi-storey developments is raised by up to 1.2m.
Private Open Space	
PO 27.1 Dwellings are provided with suitable sized areas of usable private open space to meet the needs of occupants.	DTS/DPF 27.1 Private open space provided in accordance with Design in Urban Areas Table 1 - Private Open Space.
Residential amenity in multi-level buildings	
PO 28.1 Residential accommodation within multi-level buildings have habitable rooms, windows and balconies designed and positioned to be separated from those of other dwellings and accommodation to provide visual and acoustic privacy and allow for natural ventilation and the infiltration of daylight into interior and outdoor spaces.	DTS/DPF 28.1 Habitable rooms and balconies of independent dwellings and accommodation are separated by at least 6m from one another where there is a direct line of sight between them and 3m or more from a side or rear property boundary.
PO 28.2 Balconies are designed, positioned and integrated into the overall architectural form and detail of the development to: (a) respond to daylight, wind, and acoustic conditions to maximise comfort and provide visual privacy (b) allow views and casual surveillance of the street while providing for safety and visual privacy of nearby living spaces and private outdoor areas.	DTS/DPF 28.2 Balconies utilise one or a combination of the following design elements: (a) sun screens (b) pergolas (c) louvres (d) green facades (e) openable walls.
PO 28.3 Balconies are of sufficient size and depth to accommodate outdoor seating and promote indoor / outdoor living.	DTS/DPF 28.3 Balconies open directly from a habitable room and incorporate a minimum dimension of 2m.
PO 28.4 Dwellings are provided with sufficient space for storage to meet likely occupant needs.	DTS/DPF 28.4 Dwellings (not including student accommodation or serviced apartments) are provided with storage at the following rates with at least 50% or more of the storage volume to be provided within the dwelling: (a) studio: not less than $6m^3$ (b) 1 bedroom dwelling / apartment: not less than $8m^3$ (c) 2 bedroom dwelling / apartment: not less than $10m^3$ (d) 3+ bedroom dwelling / apartment: not less than $12m^3$.
PO 28.5 Dwellings that use light wells for access to daylight, outlook and ventilation for habitable rooms, are designed to ensure a reasonable living amenity is provided.	DTS/DPF 28.5 Light wells: (a) are not used as the primary source of outlook for living rooms (b) up to 18m in height have a minimum horizontal dimension of 3m, or 6m if overlooked by bedrooms (c) above 18m in height have a minimum horizontal dimension of 6m, or 9m if overlooked by bedrooms.
PO 28.6	DTS/DPF 28.6

Attached or abutting dwellings are designed to minimise the transmission of sound between dwellings and, in particular, to protect bedrooms from possible noise intrusions.	None are applicable.
PO 28.7 Dwellings are designed so that internal structural columns correspond with the position of internal walls to ensure that the space within the dwelling/apartment is useable.	DTS/DPF 28.7 None are applicable.
Dwelling Configuration	
PO 29.1 Buildings containing in excess of 10 dwellings provide a variety of dwelling sizes and a range in the number of bedrooms per dwelling to contribute to housing diversity.	DTS/DPF 29.1 Buildings containing in excess of 10 dwellings provide at least one of each of the following: (a) studio (where there is no separate bedroom) (b) 1 bedroom dwelling / apartment with a floor area of at least $50m^2$ (c) 2 bedroom dwelling / apartment with a floor area of at least $65m^2$ (d) 3+ bedroom dwelling / apartment with a floor area of at least $80m^2$, and any dwelling over 3 bedrooms provides an additional $15m^2$ for every additional bedroom.
PO 29.2 Dwellings located on the ground floor of multi-level buildings with 3 or more bedrooms have the windows of their habitable rooms overlooking internal courtyard space or other public space, where possible.	DTS/DPF 29.2 None are applicable.
Common Areas	
PO 30.1 The size of lifts, lobbies and corridors is sufficient to accommodate movement of bicycles, strollers, mobility aids and visitor waiting areas.	DTS/DPF 30.1 Common corridor or circulation areas: (a) have a minimum ceiling height of 2.7m (b) provide access to no more than 8 dwellings (c) incorporate a wider section at apartment entries where the corridors exceed 12m in length from a core.
Group Dwellings, Residential Flat Buildings and Battle axe Development	
Amenity	
PO 31.1 Dwellings are of a suitable size to provide a high standard of amenity for occupants.	DTS/DPF 31.1 Dwellings have a minimum internal floor area in accordance with the following table:

Number of bedrooms	**Minimum internal floor area**
Studio	$35m^2$
1 bedroom	$50m^2$
2 bedroom	$65m^2$

	3+ bedrooms	80m^2 and any dwelling over 3 bedrooms provides an additional 15m^2 for every additional bedroom

PO 31.2 The orientation and siting of buildings minimises impacts on the amenity, outlook and privacy of occupants and neighbours.	DTS/DPF 31.2 None are applicable.
PO 31.3 Development maximises the number of dwellings that face public open space and public streets and limits dwellings oriented towards adjoining properties.	DTS/DPF 31.3 None are applicable.
PO 31.4 Battle-axe development is appropriately sited and designed to respond to the existing neighbourhood context.	DTS/DPF 31.4 Dwelling sites/allotments are not in the form of a battle-axe arrangement.
Communal Open Space	
PO 32.1 Private open space provision may be substituted for communal open space which is designed and sited to meet the recreation and amenity needs of residents.	DTS/DPF 32.1 None are applicable.
PO 32.2 Communal open space is of sufficient size and dimensions to cater for group recreation.	DTS/DPF 32.2 Communal open space incorporates a minimum dimension of 5 metres.
PO 32.3 Communal open space is designed and sited to: (a) be conveniently accessed by the dwellings which it services (b) have regard to acoustic, safety, security and wind effects.	DTS/DPF 32.3 None are applicable.
PO 32.4 Communal open space contains landscaping and facilities that are functional, attractive and encourage recreational use.	DTS/DPF 32.4 None are applicable.
PO 32.5 Communal open space is designed and sited to: (a) in relation to rooftop or elevated gardens, minimise overlooking into habitable room windows or onto the useable private open space of other dwellings (b) in relation to ground floor communal space, be overlooked by habitable rooms to facilitate passive surveillance.	DTS/DPF 32.5 None are applicable.
Car parking, access and manoeuvrability	
PO 33.1 Driveways and access points are designed and distributed to optimise the provision of on-street visitor parking.	DTS/DPF 33.1 Where on-street parking is available directly adjacent the site, on-street parking is retained adjacent the subject site in accordance with the following requirements: (a) minimum 0.33 on-street car parks per proposed dwelling (rounded up to the nearest whole number)

	(b) minimum car park length of 5.4m where a vehicle can enter or exit a space directly (c) minimum carpark length of 6m for an intermediate space located between two other parking spaces or to an end obstruction where the parking is indented.
PO 33.2 The number of vehicular access points onto public roads is minimised to reduce interruption of the footpath and positively contribute to public safety and walkability.	DTS/DPF 33.2 Access to group dwellings or dwellings within a residential flat building is provided via a single common driveway.
PO 33.3 Residential driveways that service more than one dwelling are designed to allow safe and convenient movement.	DTS/DPF 33.3 Driveways that service more than 1 dwelling or a dwelling on a battle-axe site: (a) have a minimum width of 3m (b) for driveways servicing more than 3 dwellings: (i) have a width of 5.5m or more and a length of 6m or more at the kerb of the primary street (ii) where the driveway length exceeds 30m, incorporate a passing point at least every 30 metres with a minimum width of 5.5m and a minimum length of 6m.
PO 33.4 Residential driveways that service more than one dwelling or a dwelling on a battle-axe site are designed to allow passenger vehicles to enter and exit and manoeuvre within the site in a safe and convenient manner.	DTS/DPF 33.4 Driveways providing access to more than one dwelling, or a dwelling on a battle-axe site, allow a B85 passenger vehicle to enter and exit the garages or parking spaces in no more than a three-point turn manoeuvre.
PO 33.5 Dwellings are adequately separated from common driveways and manoeuvring areas.	DTS/DPF 33.5 Dwelling walls with entry doors or ground level habitable room windows are set back at least 1.5m from any driveway or area designated for the movement and manoeuvring of vehicles.
Soft landscaping	
PO 34.1 Soft landscaping is provided between dwellings and common driveways to improve the outlook for occupants and appearance of common areas.	DTS/DPF 34.1 Other than where located directly in front of a garage or building entry, soft landscaping with a minimum dimension of 1m is provided between a dwelling and common driveway.
PO 34.2 Battle-axe or common driveways incorporate landscaping and permeability to improve appearance and assist in stormwater management.	DTS/DPF 34.2 Battle-axe or common driveways satisfy (a) and (b): (a) are constructed of a minimum of 50% permeable or porous material (b) where the driveway is located directly adjacent the side or rear boundary of the site, soft landscaping with a minimum dimension of 1m is provided between the driveway and site boundary (excluding along the perimeter of a passing point).
Site Facilities / Waste Storage	
PO 35.1	DTS/DPF 35.1

Provision is made for suitable mailbox facilities close to the major pedestrian entry to the site or conveniently located considering the nature of accommodation and mobility of occupants.	None are applicable.
PO 35.2 Provision is made for suitable external clothes drying facilities.	DTS/DPF 35.2 None are applicable.
PO 35.3 Provision is made for suitable household waste and recyclable material storage facilities which are: (a) located away, or screened, from public view, and (b) conveniently located in proximity to dwellings and the waste collection point.	DTS/DPF 35.3 None are applicable.
PO 35.4 Waste and recyclable material storage areas are located away from dwellings.	DTS/DPF 35.4 Dedicated waste and recyclable material storage areas are located at least 3m from any habitable room window.
PO 35.5 Where waste bins cannot be conveniently collected from the street, provision is made for on-site waste collection, designed to accommodate the safe and convenient access, egress and movement of waste collection vehicles.	DTS/DPF 35.5 None are applicable.
PO 35.6 Services including gas and water meters are conveniently located and screened from public view.	DTS/DPF 35.6 None are applicable.
Water sensitive urban design	
PO 36.1 Residential development creating a common driveway / access includes stormwater management systems that minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system, watercourses or other water bodies.	DTS/DPF 36.1 None are applicable.
PO 36.2 Residential development creating a common driveway / access includes a stormwater management system designed to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure that the development does not increase the peak flows in downstream systems.	DTS/DPF 36.2 None are applicable.
Supported Accommodation and retirement facilities	
Siting, Configuration and Design	
PO 37.1 Supported accommodation and housing for aged persons and people with disabilities is located where on-site movement of residents is not unduly restricted by the slope of the land.	DTS/DPF 37.1 None are applicable.
PO 37.2 Universal design features are incorporated to provide options for	DTS/DPF 37.2 None are applicable.

people living with disabilities or limited mobility and / or to facilitate ageing in place.	
Movement and Access	
PO 38.1 Development is designed to support safe and convenient access and movement for residents by providing: (a) ground-level access or lifted access to all units (b) level entry porches, ramps, paths, driveways, passenger loading areas and areas adjacent to footpaths that allow for the passing of wheelchairs and resting places (c) car parks with gradients no steeper than 1-in-40, and of sufficient area to provide for wheelchair manoeuvrability (d) kerb ramps at pedestrian crossing points.	DTS/DPF 38.1 None are applicable.
Communal Open Space	
PO 39.1 Development is designed to provide attractive, convenient and comfortable indoor and outdoor communal areas to be used by residents and visitors.	DTS/DPF 39.1 None are applicable.
PO 39.2 Private open space provision may be substituted for communal open space which is designed and sited to meet the recreation and amenity needs of residents.	DTS/DPF 39.2 None are applicable.
PO 39.3 Communal open space is of sufficient size and dimensions to cater for group recreation.	DTS/DPF 39.3 Communal open space incorporates a minimum dimension of 5 metres.
PO 39.4 Communal open space is designed and sited to: (a) be conveniently accessed by the dwellings which it services (b) have regard to acoustic, safety, security and wind effects.	DTS/DPF 39.4 None are applicable.
PO 39.5 Communal open space contains landscaping and facilities that are functional, attractive and encourage recreational use.	DTS/DPF 39.5 None are applicable.
PO 39.6 Communal open space is designed and sited to: (a) in relation to rooftop or elevated gardens, minimise overlooking into habitable room windows or onto the useable private open space of other dwellings (b) in relation to ground floor communal space, be overlooked by habitable rooms to facilitate passive surveillance.	DTS/DPF 39.6 None are applicable.
Site Facilities / Waste Storage	
PO 40.1 Development is designed to provide storage areas for personal	DTS/DPF 40.1 None are applicable.

items and specialised equipment such as small electric powered vehicles, including facilities for the recharging of small electric-powered vehicles.	
PO 40.2 Provision is made for suitable mailbox facilities close to the major pedestrian entry to the site or conveniently located considering the nature of accommodation and mobility of occupants.	DTS/DPF 40.2 None are applicable.
PO 40.3 Provision is made for suitable external clothes drying facilities.	DTS/DPF 40.3 None are applicable.
PO 40.4 Provision is made for suitable household waste and recyclable material storage facilities conveniently located away, or screened, from view.	DTS/DPF 40.4 None are applicable.
PO 40.5 Waste and recyclable material storage areas are located away from dwellings.	DTS/DPF 40.5 Dedicated waste and recyclable material storage areas are located at least 3m from any habitable room window.
PO 406 Provision is made for on-site waste collection where 10 or more bins are to be collected at any one time.	DTS/DPF 40.6 None are applicable.
PO 40.7 Services, including gas and water meters, are conveniently located and screened from public view.	DTS/DPF 40.7 None are applicable.
Student Accommodation	
PO 41.1 Student accommodation is designed to provide safe, secure, attractive, convenient and comfortable living conditions for residents, including an internal layout and facilities that are designed to provide sufficient space and amenity for the requirements of student life and promote social interaction.	DTS/DPF 41.1 Student accommodation provides: (a) a range of living options to meet a variety of accommodation needs, such as one-bedroom, two-bedroom and disability access units (b) common or shared facilities to enable a more efficient use of space, including: (i) shared cooking, laundry and external drying facilities (ii) internal and external communal and private open space provided in accordance with Design in Urban Areas Table 1 - Private Open Space (iii) common storage facilities at the rate of $8m^3$ for every 2 dwellings or students (iv) common on-site parking in accordance with Transport, Access and Parking Table 1 - General Off-Street Car Parking Requirements or Table 2 - Off-Street Car Parking Requirements in Designated Areas (v) bicycle parking at the rate of one space for every 2 students.
PO 41.2	DTS/DPF 41.2

Student accommodation is designed to provide easy adaptation of the building to accommodate an alternative use of the building in the event it is no longer required for student housing.	None are applicable.
All non-residential development	
Water Sensitive Design	
PO 42.1 Development likely to result in risk of export of sediment, suspended solids, organic matter, nutrients, oil and grease include stormwater management systems designed to minimise pollutants entering stormwater.	DTS/DPF 42.1 None are applicable.
PO 42.2 Water discharged from a development site is of a physical, chemical and biological condition equivalent to or better than its pre-developed state.	DTS/DPF 42.2 None are applicable.
PO 42.3 Development includes stormwater management systems to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure that development does not increase peak flows in downstream systems.	DTS/DPF 42.3 None are applicable.
Wash-down and Waste Loading and Unloading	
PO 43.1 Areas for activities including loading and unloading, storage of waste refuse bins in commercial and industrial development or wash-down areas used for the cleaning of vehicles, plant or equipment are: (a) designed to contain all wastewater likely to pollute stormwater within a bunded and roofed area to exclude the entry of external surface stormwater run-off (b) paved with an impervious material to facilitate wastewater collection (c) of sufficient size to prevent 'splash-out' or 'over-spray' of wastewater from the wash-down area (d) are designed to drain wastewater to either: (i) a treatment device such as a sediment trap and coalescing plate oil separator with subsequent disposal to a sewer, private or Community Wastewater Management Scheme or (ii) a holding tank and its subsequent removal off-site on a regular basis.	DTS/DPF 43.1 None are applicable.
Laneway Development	
Infrastructure and Access	
PO 44.1 Development with a primary street comprising a laneway, alley, lane, right of way or similar minor thoroughfare only occurs where: (a) existing utility infrastructure and services are capable of	DTS/DPF 44.1 Development with a primary street frontage that is not an alley, lane, right of way or similar public thoroughfare.

accommodating the development (b) the primary street can support access by emergency and regular service vehicles (such as waste collection) (c) it does not require the provision or upgrading of infrastructure on public land (such as footpaths and stormwater management systems) (d) safety of pedestrians or vehicle movement is maintained (e) any necessary grade transition is accommodated within the site of the development to support an appropriate development intensity and orderly development of land fronting minor thoroughfares.	

Table 1 - Private Open Space

Dwelling Type	Dwelling / Site Configuration	Minimum Rate
Dwelling (at ground level, other than a residential flat building that includes above ground dwellings)		Total private open space area: (a) Site area <301m2: 24m2 located behind the building line. (b) Site area ≥ 301m2: 60m2 located behind the building line. Minimum directly accessible from a living room: 16m2 / with a minimum dimension 3m.
Cabin or caravan (permanently fixed to the ground) in a residential park or caravan and tourist park		Total area: 16m^2, which may be uses as second car parking space, provided on each site intended for residential occupation.
Dwelling in a residential flat building or mixed use building which incorporate above ground level dwellings	Dwellings at ground level:	15m^2 / minimum dimension 3m
	Dwellings above ground level:	
	Studio (no separate bedroom)	4m^2 / minimum dimension 1.8m
	One bedroom dwelling	8m^2 / minimum dimension 2.1m
	Two bedroom dwelling	11m^2 / minimum dimension 2.4m
	Three + bedroom dwelling	15 m^2 / minimum dimension 2.6m

Forestry

Assessment Provisions (AP)

Desired Outcome	
DO 1	Commercial forestry is designed and sited to maximise economic benefits whilst managing potential negative impacts on the environment, transport networks, surrounding land uses and landscapes.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Siting	
PO 1.1 Commercial forestry plantations are established where there is no detrimental effect on the physical environment or scenic quality of the rural landscape.	DTS/DPF 1.1 None are applicable.
PO 1.2 Commercial forestry plantations are established on slopes that are stable to minimise the risk of soil erosion.	DTS/DPF 1.2 Commercial forestry plantations are not located on land with a slope exceeding 20% (1-in-5).
PO 1.3 Commercial forestry plantations and operations associated with their establishment, management and harvesting are appropriately set back from any sensitive receiver to minimise fire risk and noise disturbance.	DTS/DPF 1.3 Commercial forestry plantations and operations associated with their establishment, management and harvesting are set back 50m or more from any sensitive receiver.
PO 1.4 Commercial forestry plantations are separated from reserves gazetted under the *National Parks and Wildlife Act 1972* and/or *Wilderness Protection Act 1992* to minimise fire risk and potential for weed infestation.	DTS/DPF 1.4 Commercial forestry plantations and operations associated with their establishment, management and harvesting are set back 50m or more from a reserve gazetted under the *National Parks and Wildlife Act 1972* and/or *Wilderness Protection Act 1992*.
Water Protection	
PO 2.1 Commercial forestry plantations incorporate artificial drainage lines (i.e. culverts, runoffs and constructed drains) integrated with natural drainage lines to minimise concentrated water flows onto or from plantation areas.	DTS/DPF 2.1 None are applicable.
PO 2.2 Appropriate siting, layout and design measures are adopted to minimise the impact of commercial forestry plantations on surface water resources.	DTS/DPF 2.2 Commercial forestry plantations: (a) do not involve cultivation (excluding spot cultivation) in drainage lines (b) are set back 20m or more from the banks of any major watercourse (a third order or higher watercourse), lake, reservoir, wetland or sinkhole (with direct connection to an aquifer) (c) are set back 10m or more from the banks of any first or

	second order watercourse or sinkhole (with no direct connection to an aquifer).
Fire Management	
PO 3.1 Commercial forestry plantations incorporate appropriate firebreaks and fire management design elements.	DTS/DPF 3.1 Commercial forestry plantations provide: (a) 7m or more wide external boundary firebreaks for plantations of 40ha or less (b) 10m or more wide external boundary firebreaks for plantations of between 40ha and 100ha (c) 20m or more wide external boundary firebreaks, or 10m with an additional 10m or more of fuel-reduced plantation, for plantations of 100ha or greater.
PO 3.2 Commercial forestry plantations incorporate appropriate fire management access tracks.	DTS/DPF 3.2 Commercial forestry plantation fire management access tracks: (a) are incorporated within all firebreaks (b) are 7m or more wide with a vertical clearance of 4m or more (c) are aligned to provide straight through access at junctions, or if they are a no through access track are appropriately signposted and provide suitable turnaround areas for fire-fighting vehicles (d) partition the plantation into units of 40ha or less in area.
Power-line Clearances	
PO 4.1 Commercial forestry plantations achieve and maintain appropriate clearances from aboveground powerlines.	DTS/DPF 4.1 Commercial forestry plantations incorporating trees with an expected mature height of greater than 6m meet the clearance requirements listed in the following table:

Voltage of transmission line	Tower or Pole	Minimum horizontal clearance distance between plantings and transmission lines
500 kV	Tower	38m
275 kV	Tower	25m
132 kV	Tower	30m
132 kV	Pole	20m
66 kV	Pole	20m
Less than 66 kV	Pole	20m

Housing Renewal

Assessment Provisions (AP)

Desired Outcome	
DO 1	Renewed residential environments replace older social housing and provide new social housing infrastructure and other housing options and tenures to enhance the residential amenity of the local area.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Land Use and Intensity	
PO 1.1 Residential development provides a range of housing choices.	DTS/DPF 1.1 Development comprises one or more of the following: (a) detached dwellings (b) semi-detached dwellings (c) row dwellings (d) group dwellings (e) residential flat buildings.
PO 1.2 Medium-density housing options or higher are located in close proximity to public transit, open space and/or activity centres.	DTS/DPF 1.2 None are applicable.
Building Height	
PO 2.1 Buildings generally do not exceed 3 building levels unless in locations close to public transport, centres and/or open space.	DTS/DPF 2.1 Building height (excluding garages, carports and outbuildings) does not exceed 3 building levels and 12m and wall height does not exceed 9m (not including a gable end).
PO 2.2 Medium or high rise residential flat buildings located within or at the interface with zones which restrict heights to a maximum of 2 building levels transition down in scale and height towards the boundary of that zone, other than where it is a street boundary.	DTS/DPF 2.2 None are applicable.
Primary Street Setback	
PO 3.1 Buildings are set back from the primary street boundary to contribute to an attractive streetscape character.	DTS/DPF 3.1 Buildings are no closer to the primary street (excluding any balcony, verandah, porch, awning or similar structure) than 3m.
Secondary Street Setback	

PO 4.1 Buildings are set back from secondary street boundaries to maintain separation between building walls and public streets and contribute to a suburban streetscape character.	DTS/DPF 4.1 Buildings are set back at least 900mm from the boundary of the allotment with a secondary street frontage.
Boundary Walls	
PO 5.1 Boundary walls are limited in height and length to manage visual impacts and access to natural light and ventilation.	DTS/DPF 5.1 Except where the dwelling is located on a central site within a row dwelling or terrace arrangement, dwellings with side boundary walls are sited on only one side boundary and satisfy (a) or (b): (a) adjoin or abut a boundary wall of a building on adjoining land for the same length and height (b) do not: (i) exceed 3.2m in height from the lower of the natural or finished ground level (ii) exceed 11.5m in length (iii) when combined with other walls on the boundary of the subject development site, a maximum 45% of the length of the boundary (iv) encroach within 3 metres of any other existing or proposed boundary walls on the subject land.
PO 5.2 Dwellings in a semi-detached, row or terrace arrangement maintain space between buildings consistent with a suburban streetscape character.	DTS/DPF 5.2 Dwellings in a semi-detached or row arrangement are set back 900mm or more from side boundaries shared with allotments outside the development site, except for a carport or garage.
Side Boundary Setback	
PO 6.1 Buildings are set back from side boundaries to provide: (a) separation between dwellings in a way that contributes to a suburban character (b) access to natural light and ventilation for neighbours.	DTS/DPF 6.1 Other than walls located on a side boundary, buildings are set back from side boundaries: (a) at least 900mm where the wall height is up to 3m (b) other than for a wall facing a southern side boundary, at least 900mm plus 1/3 of the wall height above 3m (c) at least 1.9m plus 1/3 of the wall height above 3m for walls facing a southern side boundary.
Rear Boundary Setback	
PO 7.1 Buildings are set back from rear boundaries to provide: (a) separation between dwellings in a way that contributes to a suburban character (b) access to natural light and ventilation for neighbours (c) private open space (d) space for landscaping and vegetation.	DTS/DPF 7.1 Dwellings are set back from the rear boundary: (a) 3m or more for the first building level (b) 5m or more for any subsequent building level.
Buildings elevation design	
PO 8.1 Dwelling elevations facing public streets and common driveways	DTS/DPF 8.1 Each dwelling includes at least 3 of the following design features

make a positive contribution to the streetscape and common driveway areas.	within the building elevation facing a primary street, and at least 2 of the following design features within the building elevation facing any other public road (other than a laneway) or a common driveway: (a) a minimum of 30% of the building elevation is set back an additional 300mm from the building line (b) a porch or portico projects at least 1m from the building elevation (c) a balcony projects from the building elevation (d) a verandah projects at least 1m from the building elevation (e) eaves of a minimum 400mm width extend along the width of the front elevation (f) a minimum 30% of the width of the upper level projects forward from the lower level primary building line by at least 300mm. (g) a minimum of two different materials or finishes are incorporated on the walls of the building elevation, with a maximum of 80% of the building elevation in a single material or finish.
PO 8.2 Dwellings incorporate windows along primary street frontages to encourage passive surveillance and make a positive contribution to the streetscape.	DTS/DPF 8.2 Each dwelling with a frontage to a public street: (a) includes at least one window facing the primary street from a habitable room that has a minimum internal room dimension of 2.4m (b) has an aggregate window area of at least $2m^2$ facing the primary street
PO 8.3 The visual mass of larger buildings is reduced when viewed from adjoining allotments or public streets.	DTS/DPF 8.3 None are applicable.
PO 8.4 Built form considers local context and provides a quality design response through scale, massing, materials, colours and architectural expression.	DTS/DPF 8.4 None are applicable.
PO 8.5 Entrances to multi-storey buildings are: (a) oriented towards the street (b) visible and easily identifiable from the street (c) designed to include a common mail box structure.	DTS/DPF 8.5 None are applicable.
Outlook and amenity	
PO 9.1 Living rooms have an external outlook to provide a high standard of amenity for occupants.	DTS/DPF 9.1 A living room of a dwelling incorporates a window with an external outlook towards the street frontage or private open space.
PO 9.2 Bedrooms are separated or shielded from active communal recreation areas, common access areas and vehicle parking areas and access ways to mitigate noise and artificial light intrusion.	DTS/DPF 9.2 None are applicable.

<table>
<tr><td colspan="2">Private Open Space</td></tr>
<tr><td>PO 10.1

Dwellings are provided with suitable sized areas of usable private open space to meet the needs of occupants.</td><td>DTS/DPF 10.1

Private open space is provided in accordance with the following table:

<table>
<tr><th>Dwelling Type</th><th>Dwelling / Site Configuration</th><th>Minimum Rate</th></tr>
<tr><td>Dwelling (at ground level)</td><td></td><td>Total area: 24m^2 located behind the building line

Minimum adjacent to a living room: 16m^2 with a minimum dimension 3m</td></tr>
<tr><td rowspan="4">Dwelling (above ground level)</td><td>Studio</td><td>4m^2 / minimum dimension 1.8m</td></tr>
<tr><td>One bedroom dwelling</td><td>8m^2 / minimum dimension 2.1m</td></tr>
<tr><td>Two bedroom dwelling</td><td>11m^2 / minimum dimension 2.4m</td></tr>
<tr><td>Three + bedroom dwelling</td><td>15 m^2 / minimum dimension 2.6m</td></tr>
</table>
</td></tr>
<tr><td>PO 10.2

Private open space positioned to provide convenient access from internal living areas.</td><td>DTS/DPF 10.2

At least 50% of the required area of private open space is accessible from a habitable room.</td></tr>
<tr><td>PO 10.3

Private open space is positioned and designed to:

(a) provide useable outdoor space that suits the needs of occupants;
(b) take advantage of desirable orientation and vistas; and
(c) adequately define public and private space.</td><td>DTS/DPF 10.3

None are applicable.</td></tr>
<tr><td colspan="2">Visual privacy</td></tr>
<tr><td>PO 11.1

Development mitigates direct overlooking from upper level windows to habitable rooms and private open spaces of adjoining residential uses.</td><td>DTS/DPF 11.1

Upper level windows facing side or rear boundaries shared with another residential allotment/site satisfy one of the following:

(a) are permanently obscured to a height of 1.5m above finished floor level and are fixed or not capable of being opened more than 200mm
(b) have sill heights greater than or equal to 1.5m above finished floor level</td></tr>
</table>

	(c) incorporate screening with a maximum of 25% openings, permanently fixed no more than 500mm from the window surface and sited adjacent to any part of the window less than 1.5m above the finished floor.
PO 11.2 Development mitigates direct overlooking from upper level balconies and terraces to habitable rooms and private open space of adjoining residential uses.	DTS/DPF 11.2 One of the following is satisfied: (a) the longest side of the balcony or terrace will face a public road, public road reserve or public reserve that is at least 15m wide in all places faced by the balcony or terrace or (b) all sides of balconies or terraces on upper building levels are permanently obscured by screening with a maximum 25% transparency/openings fixed to a minimum height of: (i) 1.5m above finished floor level where the balcony is located at least 15 metres from the nearest habitable window of a dwelling on adjacent land or (ii) 1.7m above finished floor level in all other cases
Landscaping	
PO 12.1 Soft landscaping is incorporated into development to: (a) minimise heat absorption and reflection (b) maximise shade and shelter (c) maximise stormwater infiltration and biodiversity (d) enhance the appearance of land and streetscapes.	DTS/DPF 12.1 Residential development incorporates pervious areas for soft landscaping with a minimum dimension of 700mm provided in accordance with (a) and (b): (a) a total area as determined by the following table: Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m^2) — Minimum percentage of site <150 — 10% <200 — 15% 200-450 — 20% >450 — 25% (b) at least 30% of land between the road boundary and the building line.
Water Sensitive Design	
PO 13.1 Residential development is designed to capture and use stormwater to: (a) maximise efficient use of water resources (b) manage peak stormwater runoff flows and volume to ensure the carrying capacities of downstream systems are not overloaded (c) manage runoff quality to maintain, as close as practical, pre-development conditions.	DTS/DPF 13.1 None are applicable.
Car Parking	
PO 14.1	DTS/DPF 14.1

On-site car parking is provided to meet the anticipated demand of residents, with less on-site parking in areas in close proximity to public transport.	On-site car parking is provided at the following rates per dwelling: (a) 2 or fewer bedrooms - 1 car parking space (b) 3 or more bedrooms - 2 car parking spaces.
PO 14.2 Enclosed car parking spaces are of dimensions to be functional, accessible and convenient.	DTS/DPF 14.2 Residential parking spaces enclosed by fencing, walls or other obstructions with the following internal dimensions (separate from any waste storage area): (a) single parking spaces: (i) a minimum length of 5.4m (ii) a minimum width of 3.0m (iii) a minimum garage door width of 2.4m (b) double parking spaces (side by side): (i) a minimum length of 5.4m (ii) a minimum width of 5.5m (iii) minimum garage door width of 2.4m per space.
PO 14.3 Uncovered car parking spaces are of dimensions to be functional, accessible and convenient.	DTS/DPF 14.3 Uncovered car parking spaces have: (a) a minimum length of 5.4m (b) a minimum width of 2.4m (c) a minimum width between the centre line of the space and any fence, wall or other obstruction of 1.5m.
PO 14.4 Residential flat buildings and group dwelling developments provide sufficient on-site visitor car parking to cater for anticipated demand.	DTS/DPF 14.4 Visitor car parking for group and residential flat buildings incorporating 4 or more dwellings is provided on-site at a minimum ratio of 0.25 car parking spaces per dwelling.
PO 14.5 Residential flat buildings provide dedicated areas for bicycle parking.	DTS/DPF 14.5 Residential flat buildings provide one bicycle parking space per dwelling.
Overshadowing	
PO 15.1 Development minimises overshadowing of the private open spaces of adjoining land by ensuring that ground level open space associated with residential buildings receive direct sunlight for a minimum of 2 hours between 9am and 3pm on 21 June.	DTS/DPF 15.1 None are applicable.
Waste	
PO 16.1 Provision is made for the convenient storage of waste bins in a location screened from public view.	DTS/DPF 16.1 A waste bin storage area is provided behind the primary building line that: (a) has a minimum area of $2m^2$ with a minimum dimension of 900mm (separate from any designated car parking spaces or private open space).; and (b) has a continuous unobstructed path of travel (excluding

	moveable objects like gates, vehicles and roller doors) with a minimum width of 800mm between the waste bin storage area and the street.
PO 16.2 Residential flat buildings provide a dedicated area for the on-site storage of waste which is: (a) easily and safely accessible for residents and for collection vehicles (b) screened from adjoining land and public roads (c) of sufficient dimensions to be able to accommodate the waste storage needs of the development considering the intensity and nature of the development and the frequency of collection.	DTS/DPF 16.2 None are applicable.
Vehicle Access	
PO 17.1 Driveways are located and designed to facilitate safe access and egress while maximising land available for street tree planting, landscaped street frontages and on-street parking.	DTS/DPF 17.1 None are applicable.
PO 17.2 Vehicle access is safe, convenient, minimises interruption to the operation of public roads and does not interfere with street infrastructure or street trees.	DTS/DPF 17.2 Vehicle access to designated car parking spaces satisfy (a) or (b): (a) is provided via a lawfully existing or authorised access point or an access point for which consent has been granted as part of an application for the division of land (b) where newly proposed, is set back: (i) 0.5m or more from any street furniture, street pole, infrastructure services pit, or other stormwater or utility infrastructure unless consent is provided from the asset owner (ii) 2m or more from the base of the trunk of a street tree unless consent is provided from the tree owner for a lesser distance (iii) 6m or more from the tangent point of an intersection of 2 or more roads (iv) outside of the marked lines or infrastructure dedicating a pedestrian crossing.
PO 17.3 Driveways are designed to enable safe and convenient vehicle movements from the public road to on-site parking spaces.	DTS/DPF 17.3 Driveways are designed and sited so that: (a) the gradient from the place of access on the boundary of the allotment to the finished floor level at the front of the garage or carport is not more than 1-in-4 on average (b) they are aligned relative to the street so that there is no more than a 20 degree deviation from 90 degrees between the centreline of any dedicated car parking space to which it provides access (measured from the front of that space) and the road boundary. (c) if located so as to provide access from an alley, lane or right of way - the alley, lane or right or way is at least 6.2m wide along the boundary of the allotment / site.
PO 17.4	DTS/DPF 17.4

Driveways and access points are designed and distributed to optimise the provision of on-street parking.	Where on-street parking is available abutting the site's street frontage, on-street parking is retained in accordance with the following requirements: 1. minimum 0.33 on-street spaces per dwelling on the site (rounded up to the nearest whole number) 2. Minimum car park length of 5.4m where a vehicle can enter or exit a space directly 3. minimum car park length of 6m for an intermediate space located between two other parking spaces.
PO 17.5 Residential driveways that service more than one dwelling of a dimension to allow safe and convenient movement.	DTS/DPF 17.5 Where on-street parking is available abutting the site's street frontage, on-street parking is retained in accordance with the following requirements: (a) minimum 0.33 on-street spaces per dwelling on the site (rounded up to the nearest whole number) (b) minimum car park length of 5.4m where a vehicle can enter or exit a space directly (c) minimum carpark length of 6m for an intermediate space located between two other parking spaces or to an end obstruction where the parking is indented.
PO 17.6 Residential driveways that service more than one dwelling are designed to allow passenger vehicles to enter and exit the site and manoeuvre within the site in a safe and convenient manner.	DTS/DPF 17.6 Driveways providing access to more than one dwelling, or a dwelling on a battle-axe site, allow a B85 passenger vehicle to enter and exit the garages or parking spaces in no more than a three-point turn manoeuvre
PO 17.7 Dwellings are adequately separated from common driveways and manoeuvring areas.	DTS/DPF 17.7 Dwelling walls with entry doors or ground level habitable room windows are set back at least 1.5m from any driveway or area designated for the movement and manoeuvring of vehicles.
Storage	
PO 18.1 Dwellings are provided with sufficient and accessible space for storage to meet likely occupant needs.	DTS/DPF 18.1 Dwellings are provided with storage at the following rates and 50% or more of the storage volume is provided within the dwelling: (a) studio: not less than $6m^3$ (b) 1 bedroom dwelling / apartment: not less than $8m^3$ (c) 2 bedroom dwelling / apartment: not less than $10m^3$ (d) 3+ bedroom dwelling / apartment: not less than $12m^3$.
Earthworks	
PO 19.1 Development, including any associated driveways and access tracks, minimises the need for earthworks to limit disturbance to natural topography.	DTS/DPF 19.1 The development does not involve: (a) excavation exceeding a vertical height of 1m or (b) filling exceeding a vertical height of 1m or (c) a total combined excavation and filling vertical height exceeding 2m.

Service connections and infrastructure	
PO 20.1 Dwellings are provided with appropriate service connections and infrastructure.	DTS/DPF 20.1 The site and building: (a) have the ability to be connected to a permanent potable water supply (b) have the ability to be connected to a sewerage system, or a wastewater system approved under the *South Australian Public Health Act 2011* (c) have the ability to be connected to electricity supply (d) have the ability to be connected to an adequate water supply (and pressure) for fire-fighting purposes (e) would not be contrary to the Regulations prescribed for the purposes of Section 86 of the *Electricity Act 1996*.
Site contamination	
PO 21.1 Land that is suitable for sensitive land uses to provide a safe environment.	DTS/DPF 21.1 Development satisfies (a), (b), (c) or (d): (a) does not involve a change in the use of land (b) involves a change in the use of land that does not constitute a change to a more sensitive use (c) involves a change in the use of land to a more sensitive use on land at which site contamination does not exist (as demonstrated in a site contamination declaration form) (d) involves a change in the use of land to a more sensitive use on land at which site contamination exists, or may exist (as demonstrated in a site contamination declaration form), and satisfies both of the following: (i) a site contamination audit report has been prepared under Part 10A of the *Environment Protection Act 1993* in relation to the land within the previous 5 years which states that A. site contamination does not exist (or no longer exists) at the land or B. the land is suitable for the proposed use or range of uses (without the need for any further remediation) or C. where remediation is, or remains, necessary for the proposed use (or range of uses), remediation work has been carried out or will be carried out (and the applicant has provided a written undertaking that the remediation works will be implemented in association with the development) and (ii) no other class 1 activity or class 2 activity has taken place at the land since the preparation of the site contamination audit report (as demonstrated in a site contamination declaration form).

Infrastructure and Renewable Energy Facilities

Assessment Provisions (AP)

Desired Outcome	
DO 1	Efficient provision of infrastructure networks and services, renewable energy facilities and ancillary development in a manner that minimises hazard, is environmentally and culturally sensitive and manages adverse visual impacts on natural and rural landscapes and residential amenity.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
General	
PO 1.1 Development is located and designed to minimise hazard or nuisance to adjacent development and land uses.	DTS/DPF 1.1 None are applicable.
Visual Amenity	
PO 2.1 The visual impact of above-ground infrastructure networks and services (excluding high voltage transmission lines), renewable energy facilities (excluding wind farms), energy storage facilities and ancillary development is minimised from townships, scenic routes and public roads by: (a) utilising features of the natural landscape to obscure views where practicable (b) siting development below ridgelines where practicable (c) avoiding visually sensitive and significant landscapes (d) using materials and finishes with low-reflectivity and colours that complement the surroundings (e) using existing vegetation to screen buildings (f) incorporating landscaping or landscaped mounding around the perimeter of a site and between adjacent allotments accommodating or zoned to primarily accommodate sensitive receivers.	DTS/DPF 2.1 None are applicable.
PO 2.2 Pumping stations, battery storage facilities, maintenance sheds and other ancillary structures incorporate vegetation buffers to reduce adverse visual impacts on adjacent land.	DTS/DPF 2.2 None are applicable.
PO 2.3	DTS/DPF 2.3

Surfaces exposed by earthworks associated with the installation of storage facilities, pipework, penstock, substations and other ancillary plant are reinstated and revegetated to reduce adverse visual impacts on adjacent land.	None are applicable.
Rehabilitation	
PO 3.1 Progressive rehabilitation (incorporating revegetation) of disturbed areas, ahead of or upon decommissioning of areas used for renewable energy facilities and transmission corridors.	DTS/DPF 3.1 None are applicable.
Hazard Management	
PO 4.1 Infrastructure and renewable energy facilities and ancillary development located and operated to not adversely impact maritime or air transport safety, including the operation of ports, airfields and landing strips.	DTS/DPF 4.1 None are applicable.
PO 4.2 Facilities for energy generation, power storage and transmission are separated as far as practicable from dwellings, tourist accommodation and frequently visited public places (such as viewing platforms / lookouts) to reduce risks to public safety from fire or equipment malfunction.	DTS/DPF 4.2 None are applicable.
PO 4.3 Bushfire hazard risk is minimised for renewable energy facilities by providing appropriate access tracks, safety equipment and water tanks and establishing cleared areas around substations, battery storage and operations compounds.	DTS/DPF 4.3 None are applicable.
Electricity Infrastructure and Battery Storage Facilities	
PO 5.1 Electricity infrastructure is located to minimise visual impacts through techniques including: (a) siting utilities and services: (i) on areas already cleared of native vegetation (ii) where there is minimal interference or disturbance to existing native vegetation or biodiversity (b) grouping utility buildings and structures with non-residential development, where practicable.	DTS/DPF 5.1 None are applicable.
PO 5.2 Electricity supply (excluding transmission lines) serving new development in urban areas and townships installed underground, excluding lines having a capacity exceeding	DTS/DPF 5.2 None are applicable.

or equal to 33kV.	
PO 5.3 Battery storage facilities are co-located with substation infrastructure where practicable to minimise the development footprint and reduce environmental impacts.	DTS/DPF 5.3 None are applicable.
Telecommunication Facilities	
PO 6.1 The proliferation of telecommunications facilities in the form of towers/monopoles in any one locality is managed, where technically feasible, by co-locating a facility with other communications facilities to mitigate impacts from clutter on visual amenity.	DTS/DPF 6.1 None are applicable.
PO 6.2 Telecommunications antennae are located as close as practicable to support structures to manage overall bulk and mitigate impacts on visual amenity.	DTS/DPF 6.2 None are applicable.
PO 6.3 Telecommunications facilities, particularly towers/monopoles, are located and sized to mitigate visual impacts by the following methods: (a) where technically feasible, incorporating the facility within an existing structure that may serve another purpose or all of the following: (b) using existing buildings and landscape features to obscure or interrupt views of a facility from nearby public roads, residential areas and places of high public amenity to the extent practical without unduly hindering the effective provision of telecommunications services (c) using materials and finishes that complement the environment (d) screening using landscaping and vegetation, particularly for equipment shelters and huts.	DTS/DPF 6.3 None are applicable.
Renewable Energy Facilities	
PO 7.1 Renewable energy facilities are located as close as practicable to existing transmission infrastructure to facilitate connections and minimise environmental impacts as a result of extending transmission infrastructure.	DTS/DPF 7.1 None are applicable.
Renewable Energy Facilities (Wind Farm)	
PO 8.1 Visual impact of wind turbine generators on the amenity of residential and tourist development is reduced through appropriate separation.	DTS/DPF 8.1 Wind turbine generators are: (a) set back at least 2000m from the base of a turbine to any of the

	following zones: (i) Rural Settlement Zone (ii) Township Zone (iii) Rural Living Zone (iv) Rural Neighbourhood Zone with an additional 10m setback per additional metre over 150m overall turbine height (measured from the base of the turbine). (b) set back at least 1500m from the base of the turbine to non-associated (non-stakeholder) dwellings and tourist accommodation
PO 8.2 The visual impact of wind turbine generators on natural landscapes is managed by: (a) designing wind turbine generators to be uniform in colour, size and shape (b) coordinating blade rotation and direction (c) mounting wind turbine generators on tubular towers as opposed to lattice towers.	DTS/DPF 8.2 None are applicable.
PO 8.3 Wind turbine generators and ancillary development minimise potential for bird and bat strike.	DTS/DPF 8.3 None are applicable.
PO 8.4 Wind turbine generators incorporate recognition systems or physical markers to minimise the risk to aircraft operations.	DTS/DPF 8.4 No Commonwealth air safety (CASA / ASA) or Defence requirement is applicable.
PO 8.5 Meteorological masts and guidewires are identifiable to aircraft through the use of colour bands, marker balls, high visibility sleeves or flashing strobes.	DTS/DPF 8.5 None are applicable.
Renewable Energy Facilities (Solar Power)	
PO 9.1 Ground mounted solar power facilities generating 5MW or more are not located on land requiring the clearance of areas of intact native vegetation or on land of high environmental, scenic or cultural value.	DTS/DPF 9.1 None are applicable.
PO 9.2 Ground mounted solar power facilities allow for movement of wildlife by: (a) incorporating wildlife corridors and habitat refuges (b) avoiding the use of extensive security or perimeter fencing or incorporating fencing that enables the passage of small animals without unreasonably compromising the security of the facility.	DTS/DPF 9.2 None are applicable.
PO 9.3	DTS/DPF 9.3

<table>
<tr>
<td>Amenity impacts of solar power facilities are minimised through separation from conservation areas and sensitive receivers in other ownership.</td>
<td>Ground mounted solar power facilities are set back from land boundaries, conservation areas and relevant zones in accordance with the following criteria:
<table>
<tr><th>Generation Capacity</th><th>Approximate size of array</th><th>Setback from adjoining land boundary</th><th>Setback from conservation areas</th><th>Setback from Township, Rural Settlement, Rural Neighbourhood and Rural Living Zones[1]</th></tr>
<tr><td>50MW></td><td>80ha+</td><td>30m</td><td>500m</td><td>2km</td></tr>
<tr><td>10MW<50MW</td><td>16ha-<80ha</td><td>25m</td><td>500m</td><td>1.5km</td></tr>
<tr><td>5MW<10MW</td><td>8ha to <16ha</td><td>20m</td><td>500m</td><td>1km</td></tr>
<tr><td>1MW<5MW</td><td>1.6ha to <8ha</td><td>15m</td><td>500m</td><td>500m</td></tr>
<tr><td>100kW<1MW</td><td>0.5ha<1.6ha</td><td>10m</td><td>500m</td><td>100m</td></tr>
<tr><td><100kW</td><td><0.5ha</td><td>5m</td><td>500m</td><td>25m</td></tr>
</table>
Notes:

1. Does not apply when the site of the proposed ground mounted solar power facility is located within one of these zones.</td>
</tr>
<tr>
<td>PO 9.4

Ground mounted solar power facilities incorporate landscaping within setbacks from adjacent road frontages and boundaries of adjacent allotments accommodating non-host dwellings, where balanced with infrastructure access and bushfire safety considerations.</td>
<td>DTS/DPF 9.4

None are applicable.</td>
</tr>
<tr>
<td colspan="2">Hydropower / Pumped Hydropower Facilities</td>
</tr>
<tr>
<td>PO 10.1

Hydropower / pumped hydropower facility storage is designed and operated to minimise the risk of storage dam failure.</td>
<td>DTS/DPF 10.1

None are applicable.</td>
</tr>
<tr>
<td>PO 10.2

Hydropower / pumped hydropower facility storage is designed and operated to minimise water loss through increased evaporation or system leakage, with the incorporation of appropriate liners, dam covers, operational measures or detection systems.</td>
<td>DTS/DPF 10.2

None are applicable.</td>
</tr>
<tr>
<td>PO 10.3</td>
<td>DTS/DPF 10.3</td>
</tr>
</table>

Hydropower / pumped hydropower facilities on existing or former mine sites minimise environmental impacts from site contamination, including from mine operations or water sources subject to such processes, now or in the future.	None are applicable.
Water Supply	
PO 11.1 Development is connected to an appropriate water supply to meet the ongoing requirements of the intended use.	DTS/DPF 11.1 Development is connected, or will be connected, to a reticulated water scheme or mains water supply with the capacity to meet the on-going requirements of the development.
PO 11.2 Dwellings are connected to a reticulated water scheme or mains water supply with the capacity to meet the requirements of the intended use. Where this is not available an appropriate rainwater tank or storage system for domestic use is provided.	DTS/DPF 11.2 A dwelling is connected, or will be connected, to a reticulated water scheme or mains water supply with the capacity to meet the requirements of the development. Where this is not available it is serviced by a rainwater tank or tanks capable of holding at least 50,000 litres of water which is: (a) exclusively for domestic use (b) connected to the roof drainage system of the dwelling.
Wastewater Services	
PO 12.1 Development is connected to an approved common wastewater disposal service with the capacity to meet the requirements of the intended use. Where this is not available an appropriate on-site service is provided to meet the ongoing requirements of the intended use in accordance with the following: (a) it is wholly located and contained within the allotment of the development it will service (b) in areas where there is a high risk of contamination of surface, ground, or marine water resources from on-site disposal of liquid wastes, disposal systems are included to minimise the risk of pollution to those water resources (c) septic tank effluent drainage fields and other wastewater disposal areas are located away from watercourses and flood prone, sloping, saline or poorly drained land to minimise environmental harm.	DTS/DPF 12.1 Development is connected, or will be connected, to an approved common wastewater disposal service with the capacity to meet the requirements of the development. Where this is not available it is instead capable of being serviced by an on-site waste water treatment system in accordance with the following: (a) the system is wholly located and contained within the allotment of development it will service; and (b) the system will comply with the requirements of the South Australian Public Health Act 2011.
PO 12.2 Effluent drainage fields and other wastewater disposal areas are maintained to ensure the effective operation of waste systems and minimise risks to human health and the environment.	DTS/DPF 12.2 Development is not built on, or encroaches within, an area that is, or will be, required for a sewerage system or waste control system.
Temporary Facilities	
PO 13.1 In rural and remote locations, development that is likely to generate significant waste material during construction, including packaging waste, makes provision for a	DTS/DPF 13.1 A waste collection and disposal service is used to dispose of the volume of waste at the rate it is generated.

temporary on-site waste storage enclosure to minimise the incidence of wind-blown litter.	
PO 13.2 Temporary facilities to support the establishment of renewable energy facilities (including borrow pits, concrete batching plants, laydown, storage, access roads and worker amenity areas) are sited and operated to minimise environmental impact.	DTS/DPF 13.2 None are applicable.

Intensive Animal Husbandry and Dairies

Assessment Provisions (AP)

Desired Outcome	
DO 1	Development of intensive animal husbandry and dairies in locations that are protected from encroachment by sensitive receivers and in a manner that minimises their adverse effects on amenity and the environment.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Siting and Design	
PO 1.1 Intensive animal husbandry, dairies and associated activities are sited, designed, constructed and managed to not unreasonably impact on the environment or amenity of the locality.	DTS/DPF 1.1 None are applicable.
PO 1.2 Intensive animal husbandry, dairies and associated activities are sited, designed, constructed and managed to prevent the potential transmission of disease to other operations where animals are kept.	DTS/DPF 1.2 None are applicable.
PO 1.3 Intensive animal husbandry and associated activities such as wastewater lagoons and liquid/solid waste disposal areas are sited, designed, constructed and managed to not unreasonably impact on sensitive receivers in other ownership in terms of noise and air emissions.	DTS/DPF 1.3 None are applicable.
PO 1.4 Dairies and associated activities such as wastewater lagoons and liquid/solid waste disposal areas are sited, designed, constructed	DTS/DPF 1.4 Dairies, associated wastewater lagoon(s) and liquid/solid waste storage and disposal facilities are located 500m or more from the

and managed to not unreasonably impact on sensitive receivers in other ownership in terms of noise and air emissions.	nearest sensitive receiver in other ownership.
PO 1.5 Lagoons for the storage or treatment of milking shed effluent is adequately separated from roads to minimise impacts from odour on the general public.	DTS/DPF 1.5 Lagoons for the storage or treatment of milking shed effluent are set back 20m or more from public roads.
Waste	
PO 2.1 Storage of manure, used litter and other wastes (other than waste water lagoons) is sited, designed, constructed and managed to: (a) avoid attracting and harbouring vermin (b) avoid polluting water resources (c) be located outside 1% AEP flood event areas.	DTS/DPF 2.1 None are applicable.
Soil and Water Protection	
PO 3.1 To avoid environmental harm and adverse effects on water resources, intensive animal husbandry operations are appropriately set back from: (a) public water supply reservoirs (b) major watercourses (third order or higher stream) (c) any other watercourse, bore or well used for domestic or stock water supplies.	DTS/DPF 3.1 Intensive animal husbandry operations are set back: (a) 800m or more from a public water supply reservoir (b) 200m or more from a major watercourse (third order or higher stream) (c) 100m or more from any other watercourse, bore or well used for domestic or stock water supplies.
PO 3.2 Intensive animal husbandry operations and dairies incorporate appropriately designed effluent and run-off facilities that: (a) have sufficient capacity to hold effluent and runoff from the operations on site (b) ensure effluent does not infiltrate and pollute groundwater, soil or other water resources.	DTS/DPF 3.2 None are applicable.

Interface between Land Uses

Assessment Provisions (AP)

Desired Outcome	
DO 1	Development is located and designed to mitigate adverse effects on or from neighbouring and proximate land uses.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

<table>
<tr><th>Performance Outcome</th><th>Deemed-to-Satisfy Criteria / Designated Performance Feature</th></tr>
<tr><td colspan="2">General Land Use Compatibility</td></tr>
<tr><td>PO 1.1

Sensitive receivers are designed and sited to protect residents and occupants from adverse impacts generated by lawfully existing land uses (or lawfully approved land uses) and land uses desired in the zone.</td><td>DTS/DPF 1.1

None are applicable.</td></tr>
<tr><td>PO 1.2

Development adjacent to a site containing a sensitive receiver (or lawfully approved sensitive receiver) or zone primarily intended to accommodate sensitive receivers is designed to minimise adverse impacts.</td><td>DTS/DPF 1.2

None are applicable.</td></tr>
<tr><td colspan="2">Hours of Operation</td></tr>
<tr><td>PO 2.1

Non-residential development does not unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers) or an adjacent zone primarily for sensitive receivers through its hours of operation having regard to:

(a) the nature of the development
(b) measures to mitigate off-site impacts
(c) the extent to which the development is desired in the zone
(d) measures that might be taken in an adjacent zone primarily for sensitive receivers that mitigate adverse impacts without unreasonably compromising the intended use of that land.</td><td>DTS/DPF 2.1

Development operating within the following hours:

<table><tr><th>Class of Development</th><th>Hours of operation</th></tr><tr><td>Consulting room</td><td>7am to 9pm, Monday to Friday

8am to 5pm, Saturday</td></tr><tr><td>Office</td><td>7am to 9pm, Monday to Friday

8am to 5pm, Saturday</td></tr><tr><td>Shop, other than any one or combination of the following:

(a) restaurant
(b) cellar door in the Productive Rural Landscape Zone, Rural Zone or Rural Horticulture Zone</td><td>7am to 9pm, Monday to Friday

8am to 5pm, Saturday and Sunday</td></tr></table></td></tr>
<tr><td colspan="2">Overshadowing</td></tr>
<tr><td>PO 3.1

Overshadowing of habitable room windows of adjacent residential land uses in:

a. a neighbourhood-type zone is minimised to maintain access to direct winter sunlight
b. other zones is managed to enable access to direct winter</td><td>DTS/DPF 3.1

North-facing windows of habitable rooms of adjacent residential land uses in a neighbourhood-type zone receive at least 3 hours of direct sunlight between 9.00am and 3.00pm on 21 June.</td></tr>
</table>

sunlight.	
PO 3.2 Overshadowing of the primary area of private open space or communal open space of adjacent residential land uses in: a. a neighbourhood type zone is minimised to maintain access to direct winter sunlight b. other zones is managed to enable access to direct winter sunlight.	DTS/DPF 3.2 Development maintains 2 hours of direct sunlight between 9.00 am and 3.00 pm on 21 June to adjacent residential land uses in a neighbourhood-type zone in accordance with the following: a. for ground level private open space, the smaller of the following: i. half the existing ground level open space or ii. 35m2 of the existing ground level open space (with at least one of the area's dimensions measuring 2.5m) b. for ground level communal open space, at least half of the existing ground level open space.
PO 3.3 Development does not unduly reduce the generating capacity of adjacent rooftop solar energy facilities taking into account: (a) the form of development contemplated in the zone (b) the orientation of the solar energy facilities (c) the extent to which the solar energy facilities are already overshadowed.	DTS/DPF 3.3 None are applicable.
PO 3.4 Development that incorporates moving parts, including windmills and wind farms, are located and operated to not cause unreasonable nuisance to nearby dwellings and tourist accommodation caused by shadow flicker.	DTS/DPF 3.4 None are applicable.
Activities Generating Noise or Vibration	
PO 4.1 Development that emits noise (other than music) does not unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers).	DTS/DPF 4.1 Noise that affects sensitive receivers achieves the relevant Environment Protection (Noise) Policy criteria.
PO 4.2 Areas for the on-site manoeuvring of service and delivery vehicles, plant and equipment, outdoor work spaces (and the like) are designed and sited to not unreasonably impact the amenity of adjacent sensitive receivers (or lawfully approved sensitive receivers) and zones primarily intended to accommodate sensitive receivers due to noise and vibration by adopting techniques including: (a) locating openings of buildings and associated services away from the interface with the adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers (b) when sited outdoors, locating such areas as far as practicable from adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers (c) housing plant and equipment within an enclosed structure	DTS/DPF 4.2 None are applicable.

or acoustic enclosure (d) providing a suitable acoustic barrier between the plant and / or equipment and the adjacent sensitive receiver boundary or zone.	
PO 4.3 Fixed plant and equipment in the form of pumps and/or filtration systems for a swimming pool or spa are positioned and/or housed to not cause unreasonable noise nuisance to adjacent sensitive receivers (or lawfully approved sensitive receivers).	DTS/DPF 4.3 The pump and/or filtration system ancillary to a dwelling erected on the same site is: (a) enclosed in a solid acoustic structure located at least 5m from the nearest habitable room located on an adjoining allotment or (b) located at least 12m from the nearest habitable room located on an adjoining allotment.
PO 4.4 External noise into bedrooms is minimised by separating or shielding these rooms from service equipment areas and fixed noise sources located on the same or an adjoining allotment.	DTS/DPF 4.4 Adjacent land is used for residential purposes.
PO 4.5 Outdoor areas associated with licensed premises (such as beer gardens or dining areas) are designed and/or sited to not cause unreasonable noise impact on existing adjacent sensitive receivers (or lawfully approved sensitive receivers).	DTS/DPF 4.5 None are applicable.
PO 4.6 Development incorporating music achieves suitable acoustic amenity when measured at the boundary of an adjacent sensitive receiver (or lawfully approved sensitive receiver) or zone primarily intended to accommodate sensitive receivers.	DTS/DPF 4.6 Development incorporating music includes noise attenuation measures that will achieve the following noise levels: **Assessment location** / **Music noise level** Externally at the nearest existing or envisaged noise sensitive location / Less than 8dB above the level of background noise ($L_{90,15min}$) in any octave band of the sound spectrum (LOCT10,15 < LOCT90,15 + 8dB)
Air Quality	
PO 5.1 Development with the potential to emit harmful or nuisance-generating air pollution incorporates air pollution control measures to prevent harm to human health or unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers) within the locality and zones primarily intended to accommodate sensitive receivers.	DTS/DPF 5.1 None are applicable.
PO 5.2 Development that includes chimneys or exhaust flues (including cafes, restaurants and fast food outlets) is designed to minimise nuisance or adverse health impacts to sensitive receivers (or lawfully approved sensitive receivers) by: (a) incorporating appropriate treatment technology before	DTS/DPF 5.2 None are applicable.

exhaust emissions are released (b) locating and designing chimneys or exhaust flues to maximise the dispersion of exhaust emissions, taking into account the location of sensitive receivers.	
Light Spill	
PO 6.1 External lighting is positioned and designed to not cause unreasonable light spill impact on adjacent sensitive receivers (or lawfully approved sensitive receivers).	DTS/DPF 6.1 None are applicable.
PO 6.2 External lighting is not hazardous to motorists and cyclists.	DTS/DPF 6.2 None are applicable.
Solar Reflectivity / Glare	
PO 7.1 Development is designed and comprised of materials and finishes that do not unreasonably cause a distraction to adjacent road users and pedestrian areas or unreasonably cause heat loading and micro-climatic impacts on adjacent buildings and land uses as a result of reflective solar glare.	DTS/DPF 7.1 None are applicable.
Electrical Interference	
PO 8.1 Development in rural and remote areas does not unreasonably diminish or result in the loss of existing communication services due to electrical interference.	DTS/DPF 8.1 The building or structure: (a) is no greater than 10m in height, measured from existing ground level or (b) is not within a line of sight between a fixed transmitter and fixed receiver (antenna) other than where an alternative service is available via a different fixed transmitter or cable.
Interface with Rural Activities	
PO 9.1 Sensitive receivers are located and designed to mitigate impacts from lawfully existing horticultural and farming activities (or lawfully approved horticultural and farming activities), including spray drift and noise and do not prejudice the continued operation of these activities.	DTS/DPF 9.1 None are applicable.
PO 9.2 Sensitive receivers are located and designed to mitigate potential impacts from lawfully existing intensive animal husbandry activities and do not prejudice the continued operation of these activities.	DTS/DPF 9.2 None are applicable.
PO 9.3 Sensitive receivers are located and designed to mitigate potential impacts from lawfully existing land-based aquaculture activities and do not prejudice the continued operation of these activities.	DTS/DPF 9.3 Sensitive receivers are located at least 200m from the boundary of a site used for land-based aquaculture and associated components in other ownership.
PO 9.4	DTS/DPF 9.4

Sensitive receivers are located and designed to mitigate potential impacts from lawfully existing dairies including associated wastewater lagoons and liquid/solid waste storage and disposal facilities and do not prejudice the continued operation of these activities.	Sensitive receivers are sited at least 500m from the boundary of a site used for a dairy and associated wastewater lagoon(s) and liquid/solid waste storage and disposal facilities in other ownership.
PO 9.5 Sensitive receivers are located and designed to mitigate the potential impacts from lawfully existing facilities used for the handling, transportation and storage of bulk commodities (recognising the potential for extended hours of operation) and do not prejudice the continued operation of these activities.	DTS/DPF 9.5 Sensitive receivers are located away from the boundary of a site used for the handling, transportation and/or storage of bulk commodities in other ownership in accordance with the following: (a) 300m or more, where it involves the handling of agricultural crop products, rock, ores, minerals, petroleum products or chemicals to or from any commercial storage facility (b) 300m or more, where it involves the handling of agricultural crop products, rock, ores, minerals, petroleum products or chemicals at a wharf or wharf side facility (including sea-port grain terminals) where the handling of these materials into or from vessels does not exceed 100 tonnes per day (c) 500m or more, where it involves the storage of bulk petroleum in individual containers with a capacity up to 200 litres and a total on-site storage capacity not exceeding 1000 cubic metres (d) 500m or more, where it involves the handling of coal with a capacity up to 1 tonne per day or a storage capacity up to 50 tonnes (e) 1000m or more, where it involves the handling of coal with a capacity exceeding 1 tonne per day but not exceeding 100 tonnes per day or a storage capacity exceeding 50 tonnes but not exceeding 5000 tonnes.
PO 9.6 Setbacks and vegetation plantings along allotment boundaries should be incorporated to mitigate the potential impacts of spray drift and other impacts associated with agricultural and horticultural activities.	DTS/DPF 9.6 None are applicable.
PO 9.7 Urban development does not prejudice existing agricultural and horticultural activities through appropriate separation and design techniques.	DTS/DPF 9.7 None are applicable.
Interface with Mines and Quarries (Rural and Remote Areas)	
PO 10.1 Sensitive receivers are separated from existing mines to minimise the adverse impacts from noise, dust and vibration.	DTS/DPF 10.1 Sensitive receivers are located no closer than 500m from the boundary of a Mining Production Tenement under the *Mining Act 1971.*

Land Division

Assessment Provisions (AP)

Desired Outcome	
DO 1	Land division: (a) creates allotments with the appropriate dimensions and shape for their intended use (b) allows efficient provision of new infrastructure and the optimum use of underutilised infrastructure (c) integrates and allocates adequate and suitable land for the preservation of site features of value, including significant vegetation, watercourses, water bodies and other environmental features (d) facilitates solar access through allotment orientation (e) creates a compact urban form that supports active travel, walkability and the use of public transport (f) avoids areas of high natural hazard risk.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
All land division	
Allotment configuration	
PO 1.1 Land division creates allotments suitable for their intended use.	DTS/DPF 1.1 Division of land satisfies (a) or (b): (a) reflects the site boundaries illustrated and approved in an operative or existing development authorisation for residential development under the *Development Act 1993* or *Planning, Development and Infrastructure Act 2016* where the allotments are used or are proposed to be used solely for residential purposes (b) is proposed as part of a combined land division application with deemed-to-satisfy dwellings on the proposed allotments.
PO 1.2 Land division considers the physical characteristics of the land, preservation of environmental and cultural features of value and the prevailing context of the locality.	DTS/DPF 1.2 None are applicable.
Design and Layout	
PO 2.1 Land division results in a pattern of development that minimises the likelihood of future earthworks and retaining walls.	DTS/DPF 2.1 None are applicable.
PO 2.2 Land division enables the appropriate management of interface impacts between potentially conflicting land uses and/or zones.	DTS/DPF 2.2 None are applicable.
PO 2.3 Land division maximises the number of allotments that face public open space and public streets.	DTS/DPF 2.3 None are applicable.
PO 2.4 Land division is integrated with site features, adjacent land uses, the	DTS/DPF 2.4 None are applicable.

existing transport network and available infrastructure.	
PO 2.5 Development and infrastructure is provided and staged in a manner that supports an orderly and economic provision of land, infrastructure and services.	DTS/DPF 2.5 None are applicable.
PO 2.6 Land division results in watercourses being retained within open space and development taking place on land not subject to flooding.	DTS/DPF 2.6 None are applicable.
PO 2.7 Land division results in legible street patterns connected to the surrounding street network.	DTS/DPF 2.7 None are applicable.
PO 2.8 Land division is designed to preserve existing vegetation of value including native vegetation and regulated and significant trees.	DTS/DPF 2.8 None are applicable.
Roads and Access	
PO 3.1 Land division provides allotments with access to an all-weather public road.	DTS/DPF 3.1 None are applicable.
PO 3.2 Street patterns and intersections are designed to enable the safe and efficient movement of pedestrian, cycle and vehicular traffic.	DTS/DPF 3.2 None are applicable.
PO 3.3 Land division does not impede access to publicly owned open space and/or recreation facilities.	DTS/DPF 3.3 None are applicable.
PO 3.4 Road reserves provide for safe and convenient movement and parking of projected volumes of vehicles and allow for the efficient movement of service and emergency vehicles.	DTS/DPF 3.4 None are applicable.
PO 3.5 Road reserves are designed to accommodate pedestrian and cycling infrastructure, street tree planting, landscaping and street furniture.	DTS/DPF 3.5 None are applicable.
PO 3.6 Road reserves accommodate stormwater drainage and public utilities.	DTS/DPF 3.6 None are applicable.
PO 3.7 Road reserves provide unobstructed vehicular access and egress to and from individual allotments and sites.	DTS/DPF 3.7 None are applicable.
PO 3.8	DTS/DPF 3.8

Street patterns and intersections are designed to enable the safe and efficient movement of pedestrian, cycle and vehicular traffic.	None are applicable.
PO 3.9 Roads, open space and thoroughfares provide safe and convenient linkages to the surrounding open space and transport network.	DTS/DPF 3.9 None are applicable.
PO 3.10 Public streets are designed to enable tree planting to provide shade and enhance the amenity of streetscapes.	DTS/DPF 3.10 None are applicable.
PO 3.11 Local streets are designed to create low-speed environments that are safe for cyclists and pedestrians.	DTS/DPF 3.11 None are applicable.
Infrastructure	
PO 4.1 Land division incorporates public utility services within road reserves or dedicated easements.	DTS/DPF 4.1 None are applicable.
PO 4.2 Waste water, sewage and other effluent is capable of being disposed of from each allotment without risk to public health or the environment.	DTS/DPF 4.2 Each allotment can be connected to: (a) a waste water treatment plant that has the hydraulic volume and pollutant load treatment and disposal capacity for the maximum predicted wastewater volume generated by subsequent development of the proposed allotment or (b) a form of on-site waste water treatment and disposal that meets relevant public health and environmental standards.
PO 4.3 Septic tank effluent drainage fields and other waste water disposal areas are maintained to ensure the effective operation of waste systems and minimise risks to human health and the environment.	DTS/DPF 4.3 Development is not built on, or encroaches within, an area that is or will be, required for a sewerage system or waste control system.
PO 4.4 Constructed wetland systems, including associated detention and retention basins, are sited and designed to ensure public health and safety is protected, including by minimising potential public health risks arising from the breeding of mosquitoes.	DTS/DPF 4.4 None are applicable.
PO 4.5 Constructed wetland systems, including associated detention and retention basins, are sited and designed to allow sediments to settle prior to discharge into watercourses or the marine environment.	DTS/DPF 4.5 None are applicable.
PO 4.6 Constructed wetland systems, including associated detention and retention basins, are sited and designed to function as a landscape feature.	DTS/DPF 4.6 None are applicable.
Minor Land Division (Under 20 Allotments)	

Open Space	
PO 5.1 Land division proposing an additional allotment under 1 hectare provides or supports the provision of open space.	DTS/DPF 5.1 None are applicable.
Solar Orientation	
PO 6.1 Land division for residential purposes facilitates solar access through allotment orientation.	DTS/DPF 6.1 None are applicable.
Water Sensitive Design	
PO 7.1 Land division creating a new road or common driveway includes stormwater management systems that minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system, watercourses or other water bodies.	DTS/DPF 7.1 None are applicable.
PO 7.2 Land division designed to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure that the development does not increase the peak flows in downstream systems.	DTS/DPF 7.2 None are applicable.
Battle-Axe Development	
PO 8.1 Battle-axe development appropriately responds to the existing neighbourhood context.	DTS/DPF 8.1 Allotments are not in the form of a battle-axe arrangement.
PO 8.2 Battle-axe development designed to allow safe and convenient movement.	DTS/DPF 8.2 The handle of a battle-axe development: (a) has a minimum width of 4m or (b) where more than 3 allotments are proposed, a minimum width of 5.5m.
PO 8.3 Battle-axe allotments and/or common land are of a suitable size and dimension to allow passenger vehicles to enter and exit and manoeuvre within the site in a safe and convenient manner.	DTS/DPF 8.3 Battle-axe development allows a B85 passenger vehicle to enter and exit parking spaces in no more than a three-point turn manoeuvre.
PO 8.4 Battle-axe or common driveways incorporate landscaping and permeability to improve appearance and assist in stormwater management.	DTS/DPF 8.4 Battle-axe or common driveways satisfy (a) and (b): (a) are constructed of a minimum of 50% permeable or porous material (b) where the driveway is located directly adjacent the side or rear boundary of the site, soft landscaping with a minimum dimension of 1m is provided between the driveway and site boundary (excluding along the perimeter of a passing point).
Major Land Division (20+ Allotments)	
Open Space	

PO 9.1 Land division allocates or retains evenly distributed, high quality areas of open space to improve residential amenity and provide urban heat amelioration.	DTS/DPF 9.1 None are applicable.
PO 9.2 Land allocated for open space is suitable for its intended active and passive recreational use considering gradient and potential for inundation.	DTS/DPF 9.2 None are applicable.
PO 9.3 Land allocated for active recreation has dimensions capable of accommodating a range of active recreational activities.	DTS/DPF 9.3 None are applicable.
Water Sensitive Design	
PO 10.1 Land division creating 20 or more residential allotments includes a stormwater management system designed to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure that the development does not increase the peak flows in downstream systems.	DTS/DPF 10.1 None are applicable.
PO 10.2 Land division creating 20 or more non-residential allotments includes a stormwater management system designed to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure that the development does not increase the peak flows in downstream systems.	DTS/DPF 10.2 None are applicable.
PO 10.3 Land division creating 20 or more allotments includes stormwater management systems that minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system, watercourses or other water bodies.	DTS/DPF 10.3 None are applicable.
Solar Orientation	
PO 11.1 Land division creating 20 or more allotments for residential purposes facilitates solar access through allotment orientation and allotment dimensions.	DTS/DPF 11.1 None are applicable.

Marinas and On-Water Structures

Assessment Provisions (AP)

Desired Outcome	
DO 1	

	Marinas and on-water structures are located and designed to minimise the impairment of commercial, recreational and navigational activities and adverse impacts on the environment.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Navigation and Safety	
PO 1.1 Safe public access is provided or maintained to the waterfront, public infrastructure and recreation areas.	DTS/DPF 1.1 None are applicable.
PO 1.2 The operation of wharves is not impaired by marinas and on-water structures.	DTS/DPF 1.2 None are applicable.
PO 1.3 Navigation and access channels are not impaired by marinas and on-water structures.	DTS/DPF 1.3 None are applicable.
PO 1.4 Commercial shipping lanes are not impaired by marinas and on-water structures.	DTS/DPF 1.4 Marinas and on-water structures are set back 250m or more from commercial shipping lanes.
PO 1.5 Marinas and on-water structures are located to avoid interfering with the operation or function of a water supply pumping station.	DTS/DPF 1.5 On-water structures are set back: (a) 3km or more from upstream water supply pumping station take-off points (b) 500m or more from downstream water supply pumping station take-off points.
PO 1.6 Maintenance of on-water infrastructure, including revetment walls, is not impaired by marinas and on-water structures.	DTS/DPF 1.6 None are applicable.
Environmental Protection	
PO 2.1 Development is sited and designed to facilitate water circulation and exchange.	DTS/DPF 2.1 None are applicable.

Open Space and Recreation

Assessment Provisions (AP)

Desired Outcome	
DO 1	Pleasant, functional and accessible open space and recreation facilities are provided at State, regional, district, neighbourhood and local levels for active and passive recreation, biodiversity, community health, urban cooling, tree canopy cover, visual amenity, gathering spaces, wildlife and waterway corridors, and a range of other functions and at a range of sizes that reflect the purpose of that open space.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Land Use and Intensity	
PO 1.1 Recreation facilities are compatible with surrounding land uses and activities.	DTS/DPF 1.1 None are applicable.
PO 1.2 Open space areas include natural or landscaped areas using locally indigenous plant species and large trees.	DTS/DPF 1.2 None are applicable.
Design and Siting	
PO 2.1 Open space and recreation facilities address adjacent public roads to optimise pedestrian access and visibility.	DTS/DPF 2.1 None are applicable.
PO 2.2 Open space and recreation facilities incorporate park furniture, shaded areas and resting places.	DTS/DPF 2.2 None are applicable.
PO 2.3 Open space and recreation facilities link habitats, wildlife corridors and existing open spaces and recreation facilities.	DTS/DPF 2.3 None are applicable.
Pedestrians and Cyclists	
PO 3.1 Open space incorporates: (a) pedestrian and cycle linkages to other open spaces, centres, schools and public transport nodes; (b) safe crossing points where pedestrian routes intersect the road network; (c) easily identified access points.	DTS/DPF 3.1 None are applicable.
Usability	
PO 4.1	DTS/DPF 4.1

Land allocated for open space is suitable for its intended active and passive recreational use taking into consideration its gradient and potential for inundation.	None are applicable.
Safety and Security	
PO 5.1 Open space is overlooked by housing, commercial or other development to provide casual surveillance where possible.	DTS/DPF 5.1 None are applicable.
PO 5.2 Play equipment is located to maximise opportunities for passive surveillance.	DTS/DPF 5.2 None are applicable.
PO 5.3 Landscaping provided in open space and recreation facilities maximises opportunities for casual surveillance throughout the park.	DTS/DPF 5.3 None are applicable.
PO 5.4 Fenced parks and playgrounds have more than one entrance or exit to minimise potential entrapment.	DTS/DPF 5.4 None are applicable.
PO 5.5 Adequate lighting is provided around toilets, telephones, seating, litter bins, bicycle storage, car parks and other such facilities.	DTS/DPF 5.5 None are applicable.
PO 5.6 Pedestrian and bicycle movement after dark is focused along clearly defined, adequately lit routes with observable entries and exits.	DTS/DPF 5.6 None are applicable.
Signage	
PO 6.1 Signage is provided at entrances to and within the open space and recreation facilities to provide clear orientation to major points of interest such as the location of public toilets, telephones, safe routes, park activities and the like.	DTS/DPF 6.1 None are applicable.
Buildings and Structures	
PO 7.1 Buildings and car parking areas in open space areas are designed, located and of a scale to be unobtrusive.	DTS/DPF 7.1 None are applicable.
PO 7.2 Buildings and structures in open space areas are clustered where practical to ensure that the majority of the site remains open.	DTS/DPF 7.2 None are applicable.
PO 7.3 Development in open space is constructed to minimise the extent of impervious surfaces.	DTS/DPF 7.3 None are applicable.
PO 7.4 Development that abuts or includes a coastal reserve or Crown land	DTS/DPF 7.4 None are applicable.

used for scenic, conservation or recreational purposes is located and designed to have regard to the purpose, management and amenity of the reserve.	
Landscaping	
PO 8.1 Open space and recreation facilities provide for the planting and retention of large trees and vegetation.	DTS/DPF 8.1 None are applicable.
PO 8.2 Landscaping in open space and recreation facilities provides shade and windbreaks: (a) along cyclist and pedestrian routes; (b) around picnic and barbecue areas; (c) in car parking areas.	DTS/DPF 8.2 None are applicable.
PO 8.3 Landscaping in open space facilitates habitat for local fauna and facilitates biodiversity.	DTS/DPF 8.3 None are applicable.
PO 8.4 Landscaping including trees and other vegetation passively watered with local rainfall run-off, where practicable.	DTS/DPF 8.4 None are applicable.

Out of Activity Centre Development

Assessment Provisions (AP)

Desired Outcome	
DO1	The role of Activity Centres in contributing to the form and pattern of development and enabling equitable and convenient access to a range of shopping, administrative, cultural, entertainment and other facilities in a single trip is maintained and reinforced.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
PO 1.1 Non-residential development outside Activity Centres of a scale and type that does not diminish the role of Activity Centres: (a) as primary locations for shopping, administrative, cultural, entertainment and community services (b) as a focus for regular social and business gatherings (c) in contributing to or maintaining a pattern of development that supports equitable community access to services and facilities.	DTS/DPF 1.1 None are applicable.
PO 1.2 Out-of-activity centre non-residential development complements	DTS/DPF 1.2 None are applicable.

Activity Centres through the provision of services and facilities: (a) that support the needs of local residents and workers, particularly in underserviced locations (b) at the edge of Activities Centres where they cannot readily be accommodated within an existing Activity Centre to expand the range of services on offer and support the role of the Activity Centre.	

Resource Extraction

Assessment Provisions (AP)

Desired Outcome	
DO 1	Resource extraction activities are developed in a manner that minimises human and environmental impacts.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Land Use and Intensity	
PO 1.1 Resource extraction activities minimise landscape damage outside of those areas unavoidably disturbed to access and exploit a resource and provide for the progressive reclamation and betterment of disturbed areas.	DTS/DPF 1.1 None are applicable.
PO 1.2 Resource extraction activities avoid damage to cultural sites or artefacts.	DTS/DPF 1.2 None are applicable.
Water Quality	
PO 2.1 Stormwater and/or wastewater from resource extraction activities is diverted into appropriately sized treatment and retention systems to enable reuse on site.	DTS/DPF 2.1 None are applicable.
Separation Treatments, Buffers and Landscaping	
PO 3.1 Resource extraction activities minimise adverse impacts upon sensitive receivers through incorporation of separation distances and/or mounding/vegetation.	DTS/DPF 3.1 None are applicable.

PO 3.2 Resource extraction activities are screened from view from adjacent land by perimeter landscaping and/or mounding.	DTS/DPF 3.2 None are applicable.

Site Contamination

Assessment Provisions (AP)

Desired Outcome	
DO 1	Ensure land is suitable for the proposed use in circumstances where it is, or may have been, subject to site contamination.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
PO 1.1 Ensure land is suitable for use when land use changes to a more sensitive use.	DTS/DPF 1.1 Development satisfies (a), (b), (c) or (d): (a) does not involve a change in the use of land (b) involves a change in the use of land that does not constitute a change to a more sensitive use (c) involves a change in the use of land to a more sensitive use on land at which site contamination is unlikely to exist (as demonstrated in a site contamination declaration form) (d) involves a change in the use of land to a more sensitive use on land at which site contamination exists, or may exist (as demonstrated in a site contamination declaration form), and satisfies both of the following: (i) a site contamination audit report has been prepared under Part 10A of the *Environment Protection Act 1993* in relation to the land within the previous 5 years which states that- A. site contamination does not exist (or no longer exists) at the land or B. the land is suitable for the proposed use or range of uses (without the need for any further remediation) or C. where remediation is, or remains, necessary for the proposed use (or range of uses), remediation work has been carried out or will be carried out (and the applicant has provided a written undertaking that the remediation works will be implemented in association with the development) and (ii) no other class 1 activity or class 2 activity has taken place at the land since the preparation of the site contamination audit report (as

	demonstrated in a site contamination declaration form).

Tourism Development

Assessment Provisions (AP)

Desired Outcome	
DO 1	Tourism development is built in locations that cater to the needs of visitors and positively contributes to South Australia's visitor economy.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
General	
PO 1.1 Tourism development complements and contributes to local, natural, cultural or historical context where: (a) it supports immersive natural experiences (b) it showcases South Australia's landscapes and produce (c) its events and functions are connected to local food, wine and nature.	DTS/DPF 1.1 None are applicable.
PO 1.2 Tourism development comprising multiple accommodation units (including any facilities and activities for use by guests and visitors) is clustered to minimise environmental and contextual impact.	DTS/DPF 1.2 None are applicable.
Caravan and Tourist Parks	
PO 2.1 Potential conflicts between long-term residents and short-term tourists are minimised through suitable siting and design measures.	DTS/DPF 2.1 None are applicable.
PO 2.2 Occupants are provided privacy and amenity through landscaping and fencing.	DTS/DPF 2.2 None are applicable.
PO 2.3 Communal open space and centrally located recreation facilities are provided for guests and visitors.	DTS/DPF 2.3 12.5% or more of a caravan park comprises clearly defined communal open space, landscaped areas and areas for recreation.

PO 2.4 Perimeter landscaping is used to enhance the amenity of the locality.	DTS/DPF 2.4 None are applicable.
PO 2.5 Amenity blocks (showers, toilets, laundry and kitchen facilities) are sufficient to serve the full occupancy of the development.	DTS/DPF 2.5 None are applicable.
PO 2.6 Long-term occupation does not displace tourist accommodation, particularly in important tourist destinations such as coastal and riverine locations.	DTS/DPF 2.6 None are applicable.
Tourist accommodation in areas constituted under the National Parks and Wildlife Act 1972	
PO 3.1 Tourist accommodation avoids delicate or environmentally sensitive areas such as sand dunes, cliff tops, estuaries, wetlands or substantially intact strata of native vegetation (including regenerated areas of native vegetation lost through bushfire).	DTS/DPF 3.1 None are applicable.
PO 3.2 Tourist accommodation is sited and designed in a manner that is subservient to the natural environment and where adverse impacts on natural features, landscapes, habitats and cultural assets are avoided.	DTS/DPF 3.2 None are applicable.
PO 3.3 Tourist accommodation and recreational facilities, including associated access ways and ancillary structures, are located on cleared (other than where cleared as a result of bushfire) or degraded areas or where environmental improvements can be achieved.	DTS/DPF 3.3 None are applicable.
PO 3.4 Tourist accommodation is designed to prevent conversion to private dwellings through: (a) comprising a minimum of 10 accommodation units (b) clustering separated individual accommodation units (c) being of a size unsuitable for a private dwelling (d) ensuring functional areas that are generally associated with a private dwelling such as kitchens and laundries are excluded from, or physically separated from individual accommodation units, or are of a size unsuitable for a private dwelling.	DTS/DPF 3.4 None are applicable.

Transport, Access and Parking

Assessment Provisions (AP)

Desired Outcome	
DO 1	A comprehensive, integrated and connected transport system that is safe, sustainable, efficient, convenient and accessible to all users.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Movement Systems	
PO 1.1 Development is integrated with the existing transport system and designed to minimise its potential impact on the functional performance of the transport system.	DTS/DPF 1.1 None are applicable.
PO 1.2 Development is designed to discourage commercial and industrial vehicle movements through residential streets and adjacent other sensitive receivers.	DTS/DPF 1.2 None are applicable.
PO 1.3 Industrial, commercial and service vehicle movements, loading areas and designated parking spaces are separated from passenger vehicle car parking areas to ensure efficient and safe movement and minimise potential conflict.	DTS/DPF 1.3 None are applicable.
PO 1.4 Development is sited and designed so that loading, unloading and turning of all traffic avoids interrupting the operation of and queuing on public roads and pedestrian paths.	DTS/DPF 1.4 All vehicle manoeuvring occurs onsite.
Sightlines	
PO 2.1 Sightlines at intersections, pedestrian and cycle crossings, and crossovers to allotments for motorists, cyclists and pedestrians are maintained or enhanced to ensure safety for all road users and pedestrians.	DTS/DPF 2.1 None are applicable.
PO 2.2 Walls, fencing and landscaping adjacent to driveways and corner sites are designed to provide adequate sightlines between vehicles and pedestrians.	DTS/DPF 2.2 None are applicable.
Vehicle Access	
PO 3.1 Safe and convenient access minimises impact or interruption on the	DTS/DPF 3.1 The access is:

operation of public roads.	(a) provided via a lawfully existing or authorised driveway or access point or an access point for which consent has been granted as part of an application for the division of land or (b) not located within 6m of an intersection of 2 or more roads or a pedestrian activated crossing.
PO 3.2 Development incorporating vehicular access ramps ensures vehicles can enter and exit a site safely and without creating a hazard to pedestrians and other vehicular traffic.	DTS/DPF 3.2 None are applicable.
PO 3.3 Access points are sited and designed to accommodate the type and volume of traffic likely to be generated by the development or land use.	DTS/DPF 3.3 None are applicable.
PO 3.4 Access points are sited and designed to minimise any adverse impacts on neighbouring properties.	DTS/DPF 3.4 None are applicable.
PO 3.5 Access points are located so as not to interfere with street trees, existing street furniture (including directional signs, lighting, seating and weather shelters) or infrastructure services to maintain the appearance of the streetscape, preserve local amenity and minimise disruption to utility infrastructure assets.	DTS/DPF 3.5 Vehicle access to designated car parking spaces satisfy (a) or (b): (a) is provided via a lawfully existing or authorised access point or an access point for which consent has been granted as part of an application for the division of land (b) where newly proposed, is set back: (i) 0.5m or more from any street furniture, street pole, infrastructure services pit, or other stormwater or utility infrastructure unless consent is provided from the asset owner (ii) 2m or more from the base of the trunk of a street tree unless consent is provided from the tree owner for a lesser distance (iii) 6m or more from the tangent point of an intersection of 2 or more roads (iv) outside of the marked lines or infrastructure dedicating a pedestrian crossing.
PO 3.6 Driveways and access points are separated and minimised in number to optimise the provision of on-street visitor parking (where on-street parking is appropriate).	DTS/DPF 3.6 Driveways and access points: (a) for sites with a frontage to a public road of 20m or less, one access point no greater than 3.5m in width is provided (b) for sites with a frontage to a public road greater than 20m: (i) a single access point no greater than 6m in width is provided or (ii) not more than two access points with a width of 3.5m each are provided.
PO 3.7 Access points are appropriately separated from level crossings to	DTS/DPF 3.7 Development does not involve a new or modified access or cause

avoid interference and ensure their safe ongoing operation.	an increase in traffic through an existing access that is located within the following distance from a railway crossing: (a) 80 km/h road - 110m (b) 70 km/h road - 90m (c) 60 km/h road - 70m (d) 50km/h or less road - 50m.
PO 3.8 Driveways, access points, access tracks and parking areas are designed and constructed to allow adequate movement and manoeuvrability having regard to the types of vehicles that are reasonably anticipated.	DTS/DPF 3.8 None are applicable.
PO 3.9 Development is designed to ensure vehicle circulation between activity areas occurs within the site without the need to use public roads.	DTS/DPF 3.9 None are applicable.
Access for People with Disabilities	
PO 4.1 Development is sited and designed to provide safe, dignified and convenient access for people with a disability.	DTS/DPF 4.1 None are applicable.
Vehicle Parking Rates	
PO 5.1 Sufficient on-site vehicle parking and specifically marked accessible car parking places are provided to meet the needs of the development or land use having regard to factors that may support a reduced on-site rate such as: (a) availability of on-street car parking (b) shared use of other parking areas (c) in relation to a mixed-use development, where the hours of operation of commercial activities complement the residential use of the site, the provision of vehicle parking may be shared (d) the adaptive reuse of a State or Local Heritage Place.	DTS/DPF 5.1 Development provides a number of car parking spaces on-site at a rate no less than the amount calculated using one of the following, whichever is relevant: (a) Transport, Access and Parking Table 1 - General Off-Street Car Parking Requirements (b) Transport, Access and Parking Table 2 - Off-Street Vehicle Parking Requirements in Designated Areas (c) if located in an area where a lawfully established carparking fund operates, the number of spaces calculated under (a) or (b) less the number of spaces offset by contribution to the fund.
Vehicle Parking Areas	
PO 6.1 Vehicle parking areas are sited and designed to minimise impact on the operation of public roads by avoiding the use of public roads when moving from one part of a parking area to another.	DTS/DPF 6.1 Movement between vehicle parking areas within the site can occur without the need to use a public road.
PO 6.2 Vehicle parking areas are appropriately located, designed and constructed to minimise impacts on adjacent sensitive receivers through measures such as ensuring they are attractively developed and landscaped, screen fenced, and the like.	DTS/DPF 6.2 None are applicable.
PO 6.3 Vehicle parking areas are designed to provide opportunity for	DTS/DPF 6.3 None are applicable.

integration and shared-use of adjacent car parking areas to reduce the total extent of vehicle parking areas and access points.	
PO 6.4 Pedestrian linkages between parking areas and the development are provided and are safe and convenient.	DTS/DPF 6.4 None are applicable.
PO 6.5 Vehicle parking areas that are likely to be used during non-daylight hours are provided with sufficient lighting to entry and exit points to ensure clear visibility to users.	DTS/DPF 6.5 None are applicable.
PO 6.6 Loading areas and designated parking spaces for service vehicles are provided within the boundary of the site.	DTS/DPF 6.6 Loading areas and designated parking spaces are wholly located within the site.
PO 6.7 On-site visitor parking spaces are sited and designed to be accessible to all visitors at all times.	DTS/DPF 6.7 None are applicable.
Undercroft and Below Ground Garaging and Parking of Vehicles	
PO 7.1 Undercroft and below ground garaging of vehicles is designed to enable safe entry and exit from the site without compromising pedestrian or cyclist safety or causing conflict with other vehicles.	DTS/DPF 7.1 None are applicable.
Internal Roads and Parking Areas in Residential Parks and Caravan and Tourist Parks	
PO 8.1 Internal road and vehicle parking areas are surfaced to prevent dust becoming a nuisance to park residents and occupants.	DTS/DPF 8.1 None are applicable.
PO 8.2 Traffic circulation and movement within the park is pedestrian friendly and promotes low speed vehicle movement.	DTS/DPF 8.2 None are applicable.
Bicycle Parking in Designated Areas	
PO 9.1 The provision of adequately sized on-site bicycle parking facilities encourages cycling as an active transport mode.	DTS/DPF 9.1 Areas and / or fixtures are provided for the parking and storage of bicycles at a rate not less than the amount calculated using Transport, Access and Parking Table 3 - Off Street Bicycle Parking Requirements.
PO 9.2 Bicycle parking facilities provide for the secure storage and tethering of bicycles in a place where casual surveillance is possible, is well lit and signed for the safety and convenience of cyclists and deters property theft.	DTS/DPF 9.2 None are applicable.
PO 9.3 Non-residential development incorporates end-of-journey facilities for employees such as showers, changing facilities and secure lockers, and signage indicating the location of the facilities to	DTS/DPF 9.3 None are applicable.

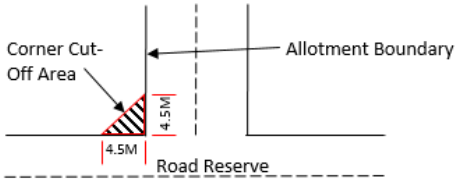
encourage cycling as a mode of journey-to-work transport.	
Corner Cut-Offs	
PO 10.1 Development is located and designed to ensure drivers can safely turn into and out of public road junctions.	DTS/DPF 10.1 Development does not involve building work, or building work is located wholly outside the land shown as Corner Cut-Off Area in the following diagram: 

Table 1 - General Off-Street Car Parking Requirements

The following parking rates apply and if located in an area where a lawfully established carparking fund operates, the number of spaces is reduced by an amount equal to the number of spaces offset by contribution to the fund.

Class of Development	Car Parking Rate (unless varied by Table 2 onwards) Where a development comprises more than one development type, then the overall car parking rate will be taken to be the sum of the car parking rates for each development type.
Residential Development	
Detached Dwelling	Dwelling with 1 bedroom (including rooms capable of being used as a bedroom) - 1 space per dwelling. Dwelling with 2 or more bedrooms (including rooms capable of being used as a bedroom) - 2 spaces per dwelling, 1 of which is to be covered.
Group Dwelling	Dwelling with 1 or 2 bedrooms (including rooms capable of being used as a bedroom) - 1 space per dwelling. Dwelling with 3 or more bedrooms (including rooms capable of being used as a bedroom) - 2 spaces per dwelling, 1 of which is to be covered. 0.33 spaces per dwelling for visitor parking where development involves 3 or more dwellings.
Residential Flat Building	Dwelling with 1 or 2 bedrooms (including rooms capable of being used as a bedroom) - 1 space per dwelling. Dwelling with 3 or more bedrooms (including rooms capable of being used as a bedroom) - 2 spaces per dwelling, 1 of which is to be covered. 0.33 spaces per dwelling for visitor parking where development involves 3 or more dwellings.
Row Dwelling where vehicle access is from the primary street	Dwelling with 1 bedroom (including rooms capable of being used as a bedroom) - 1 space per dwelling. Dwelling with 2 or more bedrooms (including rooms capable of being used as a bedroom) - 2 spaces per dwelling, 1 of which is to be covered.
	Dwelling with 1 or 2 bedrooms (including rooms capable of being used as a

Row Dwelling where vehicle access is not from the primary street (i.e. rear-loaded)	bedroom) - 1 space per dwelling. Dwelling with 3 or more bedrooms (including rooms capable of being used as a bedroom) - 2 spaces per dwelling, 1 of which is to be covered.
Semi-Detached Dwelling	Dwelling with 1 bedroom (including rooms capable of being used as a bedroom) - 1 space per dwelling. Dwelling with 2 or more bedrooms (including rooms capable of being used as a bedroom) - 2 spaces per dwelling, 1 of which is to be covered.
Aged / Supported Accommodation	
Retirement village	Dwelling with 1 or 2 bedrooms (including rooms capable of being used as a bedroom) - 1 space per dwelling. Dwelling with 3 or more bedrooms (including rooms capable of being used as a bedroom) - 2 spaces per dwelling. 0.2 spaces per dwelling for visitor parking.
Supported accommodation	0.3 spaces per bed.
Residential Development (Other)	
Ancillary accommodation	No additional requirements beyond those associated with the main dwelling.
Residential park	Dwelling with 1 or 2 bedrooms (including rooms capable of being used as a bedroom) - 1 space per dwelling. Dwelling with 3 or more bedrooms (including rooms capable of being used as a bedroom) - 2 spaces per dwelling. 0.2 spaces per dwelling for visitor parking.
Student accommodation	0.3 spaces per bed.
Workers' accommodation	0.5 spaces per bed plus 0.2 spaces per bed for visitor parking.
Tourist	
Caravan park / tourist park	Parks with 100 sites or less - a minimum of 1 space per 10 sites to be used for accommodation. Parks with more than 100 sites - a minimum of 1 space per 15 sites used for accommodation. A minimum of 1 space for every caravan (permanently fixed to the ground) or cabin.
Tourist accommodation	1 car parking space per accommodation unit / guest room.
Commercial Uses	
Auction room/ depot	1 space per 100m^2 of building floor area plus an additional 2 spaces.
Automotive collision repair	3 spaces per service bay.

Call centre	8 spaces per 100m^2 of gross leasable floor area.
Motor repair station	3 spaces per service bay.
Office	4 spaces per 100m^2 of gross leasable floor area.
Retail fuel outlet	3 spaces per 100m^2 gross leasable floor area.
Service trade premises	2.5 spaces per 100m^2 of gross leasable floor area 1 space per 100m^2 of outdoor area used for display purposes.
Shop (no commercial kitchen)	5.5 spaces per 100m^2 of gross leasable floor area where not located in an integrated complex containing two or more tenancies (and which may comprise more than one building) where facilities for off-street vehicle parking, vehicle loading and unloading, and the storage and collection of refuse are shared. 5 spaces per 100m^2 of gross leasable floor area where located in an integrated complex containing two or more tenancies (and which may comprise more than one building) where facilities for off-street vehicle parking, vehicle loading and unloading, and the storage and collection of refuse are shared.
Shop (in the form of a bulky goods outlet)	2.5 spaces per 100m2 of gross leasable floor area.
Shop (in the form of a restaurant or involving a commercial kitchen)	Premises with a dine-in service only (which may include a take-away component with no drive-through) - 0.4 spaces per seat. Premises with take-away service but with no seats - 12 spaces per 100m^2 of total floor area plus a drive-through queue capacity of ten vehicles measured from the pick-up point. Premises with a dine-in and drive-through take-away service - 0.3 spaces per seat plus a drive through queue capacity of 10 vehicles measured from the pick-up point.
Community and Civic Uses	
Childcare centre	0.25 spaces per child
Library	4 spaces per 100m^2 of total floor area.
Community facility	10 spaces per 100m^2 of total floor area.
Hall / meeting hall	0.2 spaces per seat.
Place of worship	1 space for every 3 visitor seats.
Pre-school	1 per employee plus 0.25 per child (drop off/pick up bays)

Educational establishment	For a primary school - 1.1 space per full time equivalent employee plus 0.25 spaces per student for a pickup/set down area either on-site or on the public realm within 300m of the site. For a secondary school - 1.1 per full time equivalent employee plus 0.1 spaces per student for a pickup/set down area either on-site or on the public realm within 300m of the site. For a tertiary institution - 0.4 per student based on the maximum number of students on the site at any time.
Health Related Uses	
Hospital	4.5 spaces per bed for a public hospital. 1.5 spaces per bed for a private hospital.
Consulting room	4 spaces per consulting room excluding ancillary facilities.
Recreational and Entertainment Uses	
Cinema complex	0.2 spaces per seat.
Concert hall / theatre	0.2 spaces per seat.
Hotel	1 space for every 2m^2 of total floor area in a public bar plus 1 space for every 6m^2 of total floor area available to the public in a lounge, beer garden plus 1 space per 2 gaming machines, plus 1 space per 3 seats in a restaurant.
Indoor recreation facility	6.5 spaces per 100m^2 of total floor area for a Fitness Centre 4.5 spaces per 100m^2 of total floor area for all other Indoor recreation facilities.
Industry/Employment Uses	
Fuel depot	1.5 spaces per 100m^2 total floor area 1 spaces per 100m^2 of outdoor area used for fuel depot activity purposes.
Industry	1.5 spaces per 100m^2 of total floor area.
Store	0.5 spaces per 100m^2 of total floor area.
Timber yard	1.5 spaces per 100m^2 of total floor area 1 space per 100m^2 of outdoor area used for display purposes.
Warehouse	0.5 spaces per 100m^2 total floor area.

Other Uses	
Funeral Parlour	1 space per 5 seats in the chapel plus 1 space for each vehicle operated by the parlour.
Radio or Television Station	5 spaces per 100m^2 of total building floor area.

Table 2 - Off-Street Car Parking Requirements in Designated Areas

The following parking rates apply in any zone, subzone or other area described in the 'Designated Areas' column subject to the following:

(a) the location of the development is unable to satisfy the requirements of Table 2 – Criteria (other than where a location is exempted from the application of those criteria)
or
(b) the development satisfies Table 2 – Criteria (or is exempt from those criteria) and is located in an area where a lawfully established carparking fund operates, in which case the number of spaces are reduced by an amount equal to the number of spaces offset by contribution to the fund.

Class of Development	**Car Parking Rate** **Where a development comprises more than one development type, then the overall car parking rate will be taken to be the sum of the car parking rates for each development type.**		**Designated Areas**
	Minimum number of spaces	**Maximum number of spaces**	
Development generally			
All classes of development	No minimum.	No maximum except in the Primary Pedestrian Area identified in the Primary Pedestrian Area Concept Plan, where the maximum is: 1 space for each dwelling with a total floor area less than 75 square metres 2 spaces for each dwelling with a total floor area between 75 square metres and 150 square metres 3 spaces for each dwelling with a total floor area greater than 150 square metres. Residential flat building or Residential component of a multi-storey building: 1 visitor space for each 6 dwellings.	Capital City Zone City Main Street Zone City Riverbank Zone Adelaide Park Lands Zone Business Neighbourhood Zone (within the City of Adelaide) The St Andrews Hospital Precinct Subzone and Women's and Children's Hospital Precinct Subzone of the Community Facilities Zone
Non-residential development			
Non-residential	3 spaces per 100m^2 of gross	5 spaces per 100m^2 of gross	City Living Zone

development excluding tourist accommodation	leasable floor area.	leasable floor area.	Urban Corridor (Boulevard) Zone Urban Corridor (Business) Zone Urban Corridor (Living) Zone Urban Corridor (Main Street) Zone Urban Neighbourhood Zone
Non-residential development excluding tourist accommodation	3 spaces per 100m^2 of gross leasable floor area.	6 spaces per 100m^2 of gross leasable floor area.	Strategic Innovation Zone Suburban Activity Centre Zone Suburban Business Zone Business Neighbourhood Zone Suburban Main Street Zone Urban Activity Centre Zone
Tourist accommodation	1 space for every 4 bedrooms up to 100 bedrooms plus 1 space for every 5 bedrooms over 100 bedrooms	1 space per 2 bedrooms up to 100 bedrooms and 1 space per 4 bedrooms over 100 bedrooms	City Living Zone Urban Activity Centre Zone Urban Corridor (Boulevard) Zone Urban Corridor (Business) Zone Urban Corridor (Living) Zone Urban Corridor (Main Street) Zone Urban Neighbourhood Zone
Residential development			
Residential component of a multi-storey building	Dwelling with no separate bedroom -0.25 spaces per dwelling 1 bedroom dwelling - 0.75 spaces per dwelling 2 bedroom dwelling - 1 space per dwelling 3 or more bedroom dwelling - 1.25 spaces per dwelling 0.25 spaces per dwelling for visitor parking.	None specified.	City Living Zone Strategic Innovation Zone Urban Activity Centre Zone Urban Corridor (Boulevard) Zone Urban Corridor (Business) Zone Urban Corridor (Living) Zone Urban Corridor (Main Street) Zone Urban Neighbourhood Zone
Residential flat building	Dwelling with no separate bedroom -0.25 spaces per dwelling 1 bedroom dwelling - 0.75 spaces per dwelling	None specified.	City Living Zone Urban Activity Centre Zone Urban Corridor (Boulevard) Zone Urban Corridor (Business) Zone

	2 bedroom dwelling - 1 space per dwelling 3 or more bedroom dwelling - 1.25 spaces per dwelling 0.25 spaces per dwelling for visitor parking.		Urban Corridor (Living) Zone Urban Corridor (Main Street) Zone Urban Neighbourhood Zone

Table 2 - Criteria:
The following criteria are used in conjunction with Table 2. The 'Exception' column identifies locations where the criteria do not apply and the car parking rates in Table 2 are applicable.

Criteria	Exceptions
The designated area is wholly located within Metropolitan Adelaide and any part of the development site satisfies one or more of the following: (a) is within 200 metres of any section of road reserve along which a bus service operates as a high frequency public transit service(2) (b) is within 400 metres of a bus interchange(1) (c) is within 400 metres of an O-Bahn interchange(1) (d) is within 400 metres of a passenger rail station(1) (e) is within 400 metres of a passenger tram station(1) (f) is within 400 metres of the Adelaide Parklands.	(a) All zones in the City of Adelaide (b) Strategic Innovation Zone in the following locations: (i) City of Burnside (ii) City of Marion (iii) City of Mitcham (c) Urban Corridor (Boulevard) Zone (d) Urban Corridor (Business) Zone (e) Urban Corridor (Living) Zone (f) Urban Corridor (Main Street) Zone (g) Urban Neighbourhood Zone

[NOTE(S): (1)Measured from an area that contains any platform(s), shelter(s) or stop(s) where people congregate for the purpose waiting to board a bus, tram or train, but does not include areas used for the parking of vehicles. (2) A high frequency public transit service is a route serviced every 15 minutes between 7.30am and 6.30pm Monday to Friday and every 30 minutes at night, Saturday, Sunday and public holidays until 10pm.]

Table 3 - Off-Street Bicycle Parking Requirements

The bicycle parking rates apply within designated areas located within parts of the State identified in the Schedule to Table 3.

Class of Development	Bicycle Parking Rate **Where a development comprises more than one development type, then the overall bicycle parking rate will be taken to be the sum of the bicycle parking rates for each development type.**
Consulting Room	1 space per 20 employees plus 1 space per 20 consulting rooms for customers.
Educational establishment	For a secondary school - 1 space per 20 full-time time employees plus 10 percent of the total number of employee spaces for visitors.

	For tertiary education - 1 space per 20 employees plus 1 space per 10 full time students.
Hospital	1 space per 15 beds plus 1 space per 30 beds for visitors.
Indoor recreation facility	1 space per 4 employees plus 1 space per 200m^2 of gross leasable floor area for visitors.
Licensed Premises	1 per 20 employees, plus 1 per 60 square metres total floor area, plus 1 per 40 square metres of bar floor area, plus 1 per 120 square metres lounge and beer garden floor area, plus 1 per 60 square metres dining floor area, plus 1 per 40 square metres gaming room floor area.
Office	1 space for every 200m^2 of gross leasable floor area plus 2 spaces plus 1 space per 1000m^2 of gross leasable floor area for visitors.
Pre-school	1 space per 20 full time employees plus 1 space per 40 full time children.
Recreation area	1 per 1500 spectator seats for employees plus 1 per 250 visitor and customers.
Residential flat building	Within the City of Adelaide 1 for every dwelling for residents with a total floor area less than 150 square metres, 2 for every dwelling for residents with a total floor area greater than 150 square metres, plus 1 for every 10 dwellings for visitors, and in all other cases 1 space for every 4 dwellings for residents plus 1 for every 10 dwellings for visitors.
Residential component of a multi-storey building	Within the City of Adelaide 1 for every dwelling for residents with a total floor area less than 150 square metres, 2 for every dwelling for residents with a total floor area greater than 150 square metres, plus 1 for every 10 dwellings for visitors, and in all other cases 1 space for every 4 dwellings for residents plus 1 space for every 10 dwellings for visitors.
Shop	1 space for every 300m^2 of gross leasable floor area plus 1 space for every 600m^2 of gross leasable floor area for customers.
Tourist accommodation	1 space for every 20 employees plus 2 for the first 40 rooms and 1 for every additional 40 rooms for visitors.

Schedule to Table 3

Designated Area	**Relevant part of the State** **The bicycle parking rate applies to a designated area located in a relevant part of the State described below.**
All zones	City of Adelaide
Business Neighbourhood Zone Strategic Innovation Zone Suburban Activity Centre Zone Suburban Business Zone	Metropolitan Adelaide

Suburban Main Street Zone Urban Activity Centre Zone Urban Corridor (Boulevard) Zone Urban Corridor (Business) Zone Urban Corridor (Living) Zone Urban Corridor (Main Street) Zone Urban Neighbourhood Zone	

Waste Treatment and Management Facilities

Assessment Provisions (AP)

Desired Outcome	
DO 1	Mitigation of the potential environmental and amenity impacts of waste treatment and management facilities.

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Siting	
PO 1.1 Waste treatment and management facilities incorporate separation distances and attenuation measures within the site between waste operations areas (including all closed, operating and future cells) and sensitive receivers and sensitive environmental features to mitigate off-site impacts from noise, air and dust emissions.	DTS/DPF 1.1 None are applicable.
Soil and Water Protection	
PO 2.1 Soil, groundwater and surface water are protected from contamination from waste treatment and management facilities through measures such as: (a) containing potential groundwater and surface water contaminants within waste operations areas (b) diverting clean stormwater away from waste operations areas and potentially contaminated areas (c) providing a leachate barrier between waste operations areas and underlying soil and groundwater.	DTS/DPF 2.1 None are applicable.

PO 2.2 Wastewater lagoons are set back from watercourses to minimise environmental harm and adverse effects on water resources.	DTS/DPF 2.2 Wastewater lagoons are set back 50m or more from watercourse banks.
PO 2.3 Wastewater lagoons are designed and sited to: (a) avoid intersecting underground waters; (b) avoid inundation by flood waters; (c) ensure lagoon contents do not overflow; (d) include a liner designed to prevent leakage.	DTS/DPF 2.3 None are applicable.
PO 2.4 Waste operations areas of landfills and organic waste processing facilities are set back from watercourses to minimise adverse impacts on water resources.	DTS/DPF 2.4 Waste operations areas are set back 100m or more from watercourse banks.
Amenity	
PO 3.1 Waste treatment and management facilities are screened, located and designed to minimise adverse visual impacts on amenity.	DTS/DPF 3.1 None are applicable.
PO 3.2 Access routes to waste treatment and management facilities via residential streets is avoided.	DTS/DPF 3.2 None are applicable.
PO 3.3 Litter control measures minimise the incidence of windblown litter.	DTS/DPF 3.3 None are applicable.
PO 3.4 Waste treatment and management facilities are designed to minimise adverse impacts on both the site and surrounding areas from weed and vermin infestation.	DTS/DPF 3.4 None are applicable.
Access	
PO 4.1 Traffic circulation movements within any waste treatment or management site are designed to enable vehicles to enter and exit the site in a forward direction.	DTS/DPF 4.1 None are applicable.
PO 4.2 Suitable access for emergency vehicles is provided to and within waste treatment or management sites.	DTS/DPF 4.2 None are applicable.
Fencing and Security	
PO 5.1 Security fencing provided around waste treatment and management facilities prevents unauthorised access to operations and potential hazard to the public.	DTS/DPF 5.1 Chain wire mesh or pre-coated painted metal fencing 2m or more in height is erected along the perimeter of the waste treatment or waste management facility site.
Landfill	

PO 6.1 Landfill gas emissions are managed in an environmentally acceptable manner.	DTS/DPF 6.1 None are applicable.
PO 6.2 Landfill facilities are separated from areas of environmental significance and land used for public recreation and enjoyment.	DTS/DPF 6.2 Landfill facilities are set back 250m or more from a public open space reserve, forest reserve, national park or Conservation Zone.
PO 6.3 Landfill facilities are located on land that is not subject to land slip.	DTS/DPF 6.3 None are applicable.
PO 6.4 Landfill facilities are separated from areas subject to flooding.	DTS/DPF 6.4 Landfill facilities are set back 500m or more from land inundated in a 1% AEP flood event.
Organic Waste Processing Facilities	
PO 7.1 Organic waste processing facilities are separated from the coast to avoid potential environment harm.	DTS/DPF 7.1 Organic waste processing facilities are set back 500m or more from the coastal high water mark.
PO 7.2 Organic waste processing facilities are located on land where the engineered liner and underlying seasonal water table cannot intersect.	DTS/DPF 7.2 None are applicable.
PO 7.3 Organic waste processing facilities are sited away from areas of environmental significance and land used for public recreation and enjoyment.	DTS/DPF 7.3 Organic waste processing facilities are set back 250m or more from a public open space reserve, forest reserve, national park or a Conservation Zone.
PO 7.4 Organic waste processing facilities are located on land that is not subject to land slip.	DTS/DPF 7.4 None are applicable.
PO 7.5 Organic waste processing facilities separated from areas subject to flooding.	DTS/DPF 7.5 Organic waste processing facilities are set back 500m or more from land inundated in a 1% AEP flood event.
Major Wastewater Treatment Facilities	
PO 8.1 Major wastewater treatment and disposal systems, including lagoons, are designed to minimise potential adverse odour impacts on sensitive receivers, minimise public and environmental health risks and protect water quality.	DTS/DPF 8.1 None are applicable.
PO 8.2 Artificial wetland systems for the storage of treated wastewater are designed and sited to minimise potential public health risks arising from the breeding of mosquitoes.	DTS/DPF 8.2 None are applicable.

Workers' accommodation and Settlements

Assessment Provisions (AP)

Desired Outcome	
DO 1	Appropriately designed and located accommodation for seasonal and short-term workers in rural areas that minimises environmental and social impacts.

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
PO 1.1 Workers' accommodation and settlements are obscured from scenic routes, tourist destinations and areas of conservation significance or otherwise designed to complement the surrounding landscape.	DTS/DPF 1.1 None are applicable.
PO 1.2 Workers' accommodation and settlements are sited and designed to minimise nuisance impacts on the amenity of adjacent users of land.	DTS/DPF 1.2 None are applicable.
PO 1.3 Workers' accommodation and settlements are built with materials and colours that blend with the landscape.	DTS/DPF 1.3 None are applicable.
PO 1.4 Workers' accommodation and settlements are supplied with service infrastructure such as power, water and effluent disposal sufficient to satisfy the living requirements of workers.	DTS/DPF 1.4 None are applicable.

No criteria applies to this land use. Please check the definition of the land use for further detail.