



Whitemark Wharf Shed

Development Application for demolition of existing shed,
construction of a new shed for use a multi-use
development

May 2018

COMMERCIAL PROJECT DELIVERY
Project + Construction Management



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1. Introduction

1.1 Purpose of the Report

Commercial Project Delivery (CPD) have been engaged on behalf of Quoin Holdings Pty Ltd to apply for planning approval to demolish the existing shed at Whitemark Wharf and redevelop with a new shed of larger size to be used as a multi-purpose centre.

The proponents have secured a 10 plus 10 year lease with Tasmanian Ports Corporation over a portion of the site as shown on A1-001 in the DA Plans at **Appendix A** to this report. Approval has already been granted for development of the existing shed (DA010-17) in late 2017 via a planning scheme amendment. However, further investigations have revealed that the structural integrity of the existing shed is compromised in terms of its use for commercial operations and therefore approval has been granted by TasPorts for demolition of the existing shed and construction of a new structure to house the café/bar/distillery/offices and function centre.

The existing shed is 25.1m x 8.6m whilst the proposed shed is 30.01m x 12.1m. The proposed uses contained within it are the same as per previous approval and the seating capacity at 90 is unchanged.

Enquiries relating to this application can be directed to:

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Commercial Project Delivery
1/47A Brisbane St
Launceston TAS 7250
0408 397 393

1.2 Statutory References

1.2.1 Name of Planning Instrument

The subject of the proposed amendment is the **Flinders Planning Scheme 1994** (hence forth referred to as the planning scheme).

1.2.2 Name of Planning Authority

The Planning Authority is the **Flinders Council**

1.3 Description of Proposed Development

It is proposed to demolish the existing shed and construct a new building at 16 Esplanade Whitemark, to develop it into a tourism 'hub' providing for the following range of uses:

- Distillery and bond store;
- Restaurant/café/bar;
- Provedore;
- Offices; and
- Function area.

The building will also have associated amenities, storage and loading areas contained within it.

A 19 space car park is to be provided on the northern side of the existing entrance partly within an existing cleared, levelled, informal car parking area.

To the north of this will be the on-site wastewater system required to service the facility. The on-site wastewater system. The Wastewater system has been modelled on a maximum of 118 equivalent persons on site at any one time, being a maximum restaurant/function capacity of 90 persons, offices of 20 people and staff of 8 persons.

Details of the proposed building works are summarised as follows:

- Demolish existing shed;
- Construction of a new shed (30.01m x 12.1m) with a maximum height of 7.6 metres;
- Ground floor to comprise distillery, loading bay, bond store, amenities, commercial kitchen, café, provedore and bar. Total floor area 360m²;
- Mezzanine floor to comprise four office spaces, storage areas and conference/function room. Total floor area 237m²;
- Ground level decking constructed on the western elevation for outdoor dining;
- Paved area along the northern and part of the eastern elevations;
- Building to be clad in zincale or corrugated iron;
- Partially cladding building in rough sawn timber battens to break up the bulk and provide aesthetic interest.
- Signage panels on the eastern [700mm(h) x 6500m(w)] and northern [700m (h) x 3400mm (w)] elevations.
- A roof sign 27.5m long by 2.5m high along the length of the roof intended to be on display for visitors arriving to the Island by air;
- Install four rainwater tanks along the southern end of the building;
- Install grease trap, WTP, balance tank and septic tank along southern end of the building in accordance with the STRATA wastewater and stormwater management reports.

It is proposed to remove/trim existing shrubs located between the building and the wharf to allow for views from the building to the coast.

Public access to the wharf will be maintained and it is clear from the proposal plans that the road linkage to the port will remain open and useable. It is a condition of the lease agreement that this public access be retained.

Tasmanian Ports Corporation own the land and operate the wharf and are unlikely to ever grant land owner approval for any development that interferes with this access point whilst the wharf is still operational.

A clause in the lease agreement regarding access reads as follows:

'You agree that the Lessor may grant easements or other rights over the Lessor's Land or affecting the Premises to a person on any terms and for any purpose unless the grant of that easement or right would substantially or seriously interfere with Your use and enjoyment of the Premises.'

You agree that the Lessor may:

- (a) *control the use of the Lessor's Land (other than the Premises); and*
- (b) *permit or carry out such activities on the Lessor's Land as it sees fit*

provided that such use or activity does not unreasonably interfere with Your access to or enjoyment of the Premises.

You may use the Common Areas provided that You comply with any rules or restrictions imposed by the Lessor, provided that these rules and restrictions shall not unreasonably interfere with Your access to and enjoyment of the Premises.

Your use of the Common Areas must not obstruct the use by any other party of any part of the Common Areas.'

Detailed proposal plans are included as **Appendix A**.

2. Subject Site

2.1 The Subject Land

The subject site is located on the western side of the Whitemark township, running between the coast and Esplanade. It is an irregular shaped allotment and includes the Whitemark wharf within it. The site is developed with the wharf facility, informal car parking area, the subject shed and some recreational facilities. Vehicular access to the site is from the Esplanade, with vehicular access through to the wharf enabled. The extent of the overall site subject to this amendment and development application is shown in Figure 1 above whilst the extent of the site in terms of title reference is shown in Figure 2 below.



Figure 2 - Site Plan



Figure 3 – Aerial

The land is zoned Port and subject to the Shoreline Waterbody overlay as shown in Figures 4 and 5. The land to the east comprises the Whitemark township and the site is within walking distance (300m) from the central area of Whitemark. The lease area has an extensive frontage to the coast and as such is afforded excellent views of Parry's Bay. The land immediately to the north and south comprises Whitemark Beach and its foreshore and is zoned Environmental Management Recreation.

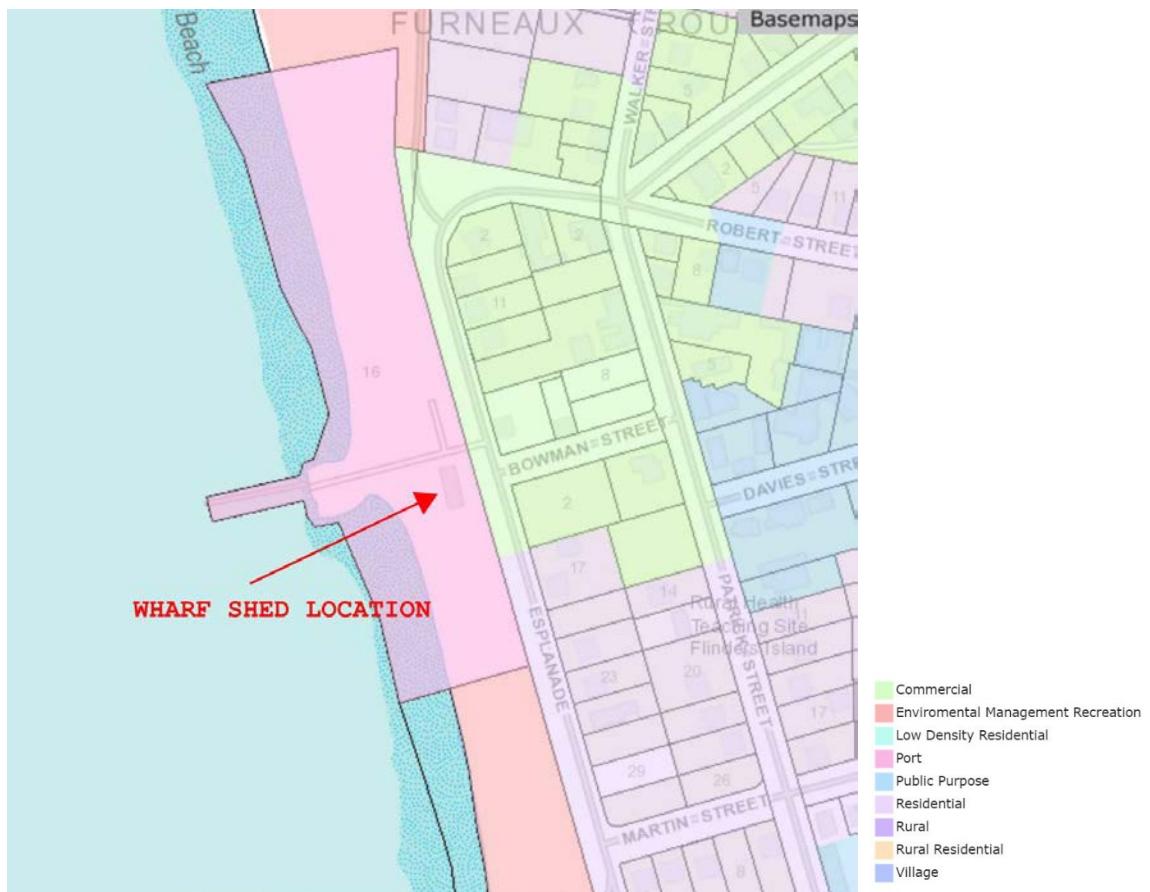


Figure 4 – Zoning Plan



Figure 5 – Special Area Overlays

2.2 Title Information

The proposed amendment and development application relates to the following titles:

Address	Owner(s)	Title Reference	Existing Land Area
16 Esplanade, Whitemark	Tasmanian Ports Corporation Pty Ltd	129006/1	3.617ha

Copies of relevant certificate of titles are contained at **Appendix B**. Owner's consent as required by Section 33(2A) of the Act is attached at **Appendix C**.

2.3 Servicing

The site is connected to reticulated water and the shed is connected to electricity.

There is no stormwater or wastewater infrastructure on site.

2.4 Photos



Figure 6 - View of wharf shed (northern end)



Figure 7 – view of informal parking area



Figure 8 – View of shed from access onto Esplanade

3. Development Application Assessment

3.1 Zoning

As described in section 2.1, the subject site is zoned Port Zone under the Flinders Planning Scheme 2000.

3.2 Use Categorisation

The proposed development encompasses a variety of use classes to operate out of the upgraded wharf shed as shown in Table 2 below:

USE	PLANNING SCHEME DEFINITION
Visitor Information Desk	<p>Tourist Operation</p> <p><i>Means the use or development of land specifically for integrated tourist purposes, providing accommodation, recreation, and/or entertainment, indoor or outdoor display of historical, natural or other interest, any other similar attraction. The definition does not include any specific type of recreational use or form of tourist accommodation elsewhere defined.</i></p>
Café/restaurant incl Commercial Kitchen	<p>Restaurant</p> <p><i>Means the use or development of land for the sale of meals and/or refreshments for consumption on that land.</i></p>
Producer Hub	<p>Not readily defined but would fall as ancillary to one of the other uses, particularly the café/restaurant as it is intended that producers can hire kitchen space to cook/bottle their products.</p>
Offices	<p>Office</p> <p><i>Means the use or development of land for the administration of a business or the carrying out of an agency, including an estate agent, bank, typist/secretarial service or the like but does not include a Home Occupation or Consulting Room.</i></p>
Conference Room	<p>Community Building</p> <p><i>Means the use or development of land (not being a dwelling unit) as a place in which people gather for the purpose of recreation, entertainment, religious or social activity, including an assembly room, meeting hall church, cinema, theatre, dance or concert hall, non-residential club, reception room, venue for indoor sports or games or the like, with or without a bar or drinking booth as an</i></p>

	<i>ancillary facility, and may include a licensed club as defined by the Liquor Accommodation Act 1990 but does not include Active Recreation, Licensed Establishment, Educational/Cultural Establishment or a Civic Building/Centre</i>
Provedore	<p>Local Shop (if floor area does not exceed 250m²)</p> <p><i>Means any land with unrestricted access to the general public (including minors) during trading hours that is used primarily for the retailing of food and/or convenience goods or personal services, the gross floor area of which is not in excess of 250m².</i></p>
Distillery	<p>Light Industry</p> <p><i>Means the use or development of land for an industry that does not or will not:</i></p> <p><i>(a) impose any undue load on any existing or projected utility service;</i></p> <p><i>(b) have a detrimental effect on the amenity of the environs by causing environmental harm by reason of air, noise or other pollution or waste product emanating from the land, the presence of vermin therein or through the creation of electrical interference,</i></p>

Table 2: Proposed Use Classes

3.3 Approval Status

All of the uses proposed (identified in Table 2) are afforded discretionary status in accordance with note (a) to Clause 5.7.5. The exception to this being the office component which in accordance with the table at Clause 5.7.5 is a permitted use class within the Port Zone.

The application for use and development also triggers the following discretions:

- 7.5.2 Shorelines, Waterbodies and Watercourses; and
- Signage
- Car Parking.

3.4 Port Zone Provisions

3.4.1 Zone Intent

5.7.1

Zone Intent

The areas under this zone are intended for development of uses directly related to the operation of Whitemark and Lady Barron as ports. Appropriate use or development

include storage, warehousing, marine-related office and sales outlets, marine maintenance and repair facilities and holding yards. Use or development for tourism/hospitality related purposes is supported in association with Whitemark Wharf.

The proposed development is consistent with the final element of the zone intent in that it is use and development for tourism/hospitality related purposes in association with Whitemark Wharf. It is submitted that given the existing building is no longer required by the Tasmanian Ports Corporation, that its demolition and redevelopment for a purpose that will support tourism on the island and offer users of pleasure craft somewhere to berth (existing wharf to remain) and have a meal/refreshments and shop for local produce. The proposed development will not preclude the ongoing use of the wharf nor public access to the wharf. The replacement shed is of a larger size than the existing shed and therefore if Tasports required it in the future for port purposes, it would still be fit for purpose.

3.4.2 Desired Zone Character and Zone Guidelines (Clause 5.7.2)

- a) *While acknowledging the design requirements of different port-related uses, development should nevertheless take all reasonable measures to limit conflict with the character of the surrounding area (including that under other zoning) and other uses.*

Response:

The proposed redevelopment of the existing 'Wharf Shed' into a retail, tourism and producer hub will not conflict with the surrounding area. The proposed development will complement the primary function of the Whitemark Wharf being for pleasure and fishing craft, offering visitors somewhere to get food and drink and obtain tourist information.

- b) *Use or development should be of modest scale and use traditional design elements and orientation to the street, where appropriate. Pitched roofs and broken form are preferred and long, high continuous walls are not appropriate.*

Response:

The proposed new shed is slightly larger than the existing shed but in terms of the overall site size is modest in scale and appearance. The proposed external façade works will bring the building more in line with the zone character as the façade will be broken by substantial glazing and the installation of timber battens on the northern, western and southern elevations. The existing pitched roof form will remain and it is submitted that the proposed works will significantly improve the visual appearance of the shed from the Esplanade and the water.

- c) *Advertising signs may be colourful but should be restrained in their overall impact. Typically, signs should be located on the building face or fence or in a low position if free standing. Large signs and those which are out of scale with the area or the building or structure on which they are located or relate to, as well as those above roof height are inappropriate.*

Response:

The two proposed wall signs are to be located on the northern and eastern elevations of the building. Their overall size is considered appropriate in the context of the size of the building and will not dominate the streetscape or the view of the building from the public wharf.

- d) Security fencing shall be kept to a minimum. Where required its visual impact should be minimised through such measures as use of dark coloured/finished wire mesh and screening vegetation, and where possible located behind the line of the building façade.

Response:

No security fencing is proposed.

3.4.3 Subdivision Standards (Clause 5.7.3)

Not applicable – subdivision does not form part of this proposal.

3.4.4 Development Standards (Clause 5.7.4)

- (a) The maximum height of buildings is 8.0 metres

Response:

Complies.

The maximum height of the building (at the pitch) will be 7.6 metres.

- (b) There are no minimum setback requirements except those necessary to meet the zone intent, protect the character of the surrounding area and protect the amenity of neighbouring properties.

Response:

Complies.

The building will be setback 13 metres from the Esplanade road boundary, 63 metres to the western waterfront boundary and in excess of 20 metres to the southern boundary and in excess of 40 metres to the northern boundary. The setbacks proposed will not impact on the amenity of neighbouring properties.

3.5 Part 6 – Use and Development Principles

Assessment against the Use and Development Principles at Part 6 of the Planning Scheme is provided as follows:

3.5.1 6.1 Use

- (a) use or development shall not unreasonably impact on any existing or intended use or development of neighbouring land.

- (b) subdivision of land shall be carried out in accordance with the subdivision provisions for the zone within which the land is located or where that is not appropriate in accordance with:

(i) the requirements of the intended use, and

(ii) the Zone Intent, or alternatively by

(iii) an approved Development Plan that has been adopted by Council and inserted as a provision in the Scheme.

- (c) Residential Zones shall be protected from encroachment by incompatible use or development.
- (d) Rural Industrial operations shall be appropriately located and designed to avoid any detrimental effects on neighbouring land use or development, particularly in respect of atmospheric emissions, solid waste disposal and water pollution, soil erosion, noise or visual quality.
- (e) Mining and quarrying operations shall be located and carried out in a form which does not conflict with surrounding land use or development, scenic values and the environment.

Response:

The proposed use of the site is entirely appropriate for a coastal location on the edge of an existing settlement. The proposed use will enhance the public's enjoyment of the coastal area without impacting on any adjoining sensitive uses.

No subdivision is proposed.

The proposed use and development does not constitute rural industrial operations.

No mining or quarrying is proposed.

3.5.2 6.2 Character

- (a) Use and development shall adequately respect the character of, and future intentions for the area in which it is to be located.
- (b) Subdivision layout, particularly roads, shall take adequate account of land contours and the need to avoid visual scarring.
- (c) Use or development (including public facilities and services) should adequately respect the surrounding streetscape and neighbouring use or development, particularly in relation to scale, setbacks, form (including roof shape), landscaping, materials, colours and fencing
- (d) Landscaping of use or development shall be of a type, form, variety(s) and character which is suited to the intention of the zone, the area and the nature of the use or development.
- (e) Where trees are an important element in the character of an area they should be retained.
- (f) Signs shall be consistent in type, scale and location, with the intention of the zone, the streetscape and the building or structure on which they are positioned or to which they otherwise relate.
- (g) Forestry use or development, particularly plantations, shall be appropriately sited and planned to protect the visual quality and character of the countryside generally, and from important viewing locations in particular

Response:

It is submitted that the proposed use and development will improve the visual amenity of the area and will have a positive impact on the local character. The use and development will increase usage and visitation to the foreshore and wharf and will turn the area into a vibrant meeting place.

No subdivision is proposed.

The new building is only slightly larger than the existing building will only result in a minor change to existing boundary setbacks. The slight increase in height is permitted in the zone. The aesthetics of the building will be improved as a result of the development.

No formal landscaping is proposed and if Council consider necessary it is submitted that a landscaping plan can be required as a condition of permit.

The proposed signs are of a size that is commensurate with the large façades on which they are located and will ensure their visibility from the Esplanade and the access to the site and wharf to enable identification of the site.

Forestry does not form part of this proposal.

3.6 6.3 Amenity

(a) *Adequate public open space shall be provided in areas of new subdivision, to meet the recreational and open space requirements of the community generally and particularly the new owners of the lots created by subdivision.*

(b) *Use or development shall accord all existing and/or future occupiers with adequate and reasonable levels of amenity, especially in relation to privacy, sunlight, aspect, views and noise disturbance.*

(c) *Dwellings shall provide an adequate amount and appropriate type of private open space, to meet the expected lifestyle requirements of occupants. Such private open space shall provide adequate privacy, be exposed to reasonable levels of sunshine and directly accessible from the dwelling to which it belongs.*

Response:

Subdivision is not proposed.

The building has been designed to maximise sunlight into all habitable spaces and take advantage of views to the coast. No overlooking of dwellings from the development will occur.

3.7 6.4 Environment

(a) *Use or development shall not be allowed to detrimentally affect the environment. All areas, and sensitive ecological and/or visual areas in particular, shall be developed in a manner and to an extent which is consistent with the protection of the values of the area.*

(b) *Use or Development and land management practices shall be directed towards achieving environmental sustainability, biodiversity and ecological balance, and avoiding environmental damage such as soil erosion, coastal dune erosion, loss of important animal and plant species and increases in vermin populations.*

Response:

The subject site is not within an ecological or visually sensitive area. The proposed use and development will not detrimentally impact on the environment.

(c) *Use or Development shall not be located in areas of unacceptable risk (eg. from fire, flood or landslip). In situations where risk may exist, use and development shall be appropriately sited and designed to provide an acceptable level of protection and safety for future users. In particular.*

i. *Lands subject to flood risk are those subject to a greater than one in a 100 year flood interval (1% probability), and land, the natural surface level of which is below 3 metres Australian Height Datum (AHD); and*

- ii. Land which comprises soils of known or suspected instability, has a slope greater than 1 in 4, or is filled or reclaimed land, are deemed to constitute an unstable land hazard; and*
- iii. Use and development in bushfire prone areas will comply with the provisions of Schedule 7 Development in Bushfire Prone Areas or some other provisions acceptable to Council and the Tasmania Fire Service.*

Response:

The subject site is not located in an area at risk from flooding or land instability. The building is existing and the provisions of Schedule 7 are not applicable.

(d) Potentially incompatible Uses or Developments shall be adequately and appropriately located, sited and designed to avoid conflict. Level 2 activities or sources of pollution shall be sited in accordance with the following:

i. Use or Development for a use of land that is a Level 2 activity under the provisions of the Environment Management and Pollution Control Act 1994 shall not be allowed within the lesser distance from a residential zone than that recommended by the Director of Environmental Management.

ii. Use or Development of land that is not a Level 2 activity, but which Council nonetheless considers will or has the potential for environmental harm, shall not be allowed within a lesser distance from a residential zone than that determined by Council after taking into account the advice from the Director of Environmental Management.

iii. A dwelling unit shall not be erected within a lesser distance of any established Level 2 activity or other use of land which Council considers a source of pollution, than that determined by Council taking into account the advice from the Director of Environmental Management. (e) Activities involving extensive site works, such as quarrying, shall be suitably sited, screened, and

Response:

The proposed use is not a level 2 activity.

(e) Activities involving extensive site works, such as quarrying, shall be suitably sited, screened and rehabilitated where appropriate, to protect the ecological and visual qualities of the area.

Response:

Not applicable.

(f) Use or development shall be of a suitable form and siting to avoid any adverse impact on any watercourse and vice versa. Use or development (including the siting of effluent disposal systems) shall be setback a minimum of 40 metres, or such distance as is required, from a watercourse to avoid degradation of water quality.

Response:

The on-site wastewater treatment system has been designed to ensure there will be no impact on water quality at the coast. Refer to **Appendix C** for additional details on the design of the Wastewater Treatment System.

(g) Use of land in the vicinity of those watercourses identified in Schedule 3 shall provide Riparian Reserves in an appropriate location and form.

Response:

The building slab is existing and does not require vegetation removal. Some vegetation removal will be required for the car park and absorption trenches associated with the wastewater treatment system.

3.8 6.5 Heritage

(a) *Use or Development shall be undertaken in areas and in a manner which conserves items, sites, areas and customs of historic and cultural value.*

(b) *Any Use or Development carried out on or in the vicinity of an item, site, area, feature or customary activity (including Aboriginal sites and shipwrecks) or conservation value, shall adequately respect its historic and cultural integrity.*

(c) *The protection and conservation of items, sites, areas, features and customary activities of historic and cultural importance applies to those previously identified and listed in the Scheme, and those which subsequently become known to Council.*

(d) *Where an item, site, area, feature or customary activity has or may have historic or cultural importance, Council may require a Statement of Cultural Significance to be prepared.*

(e) *Use or development shall be carried out in accordance with the principles and practices of the Burra Charter.*

(f) *Use or Development involving any historic building or group of buildings shall adequately respect the design and construction elements of the building(s) and particularly the relationship of spaces, orientation, form, mass, scale, fenestration, detailing, style, materials and colour.*

(g) *Areas of identified conservation value, including National Parks and Nature Reserves, shall be protected from inappropriate use or development and detrimental land management practices including land clearance, within such areas and adjacent areas outside them.*

Response:

The subject site and its buildings are not included on the Tasmanian Heritage Register. As the site is already developed and zoned for urban purposes, a search of the Aboriginal Heritage Register was not undertaken but it is anticipated that standard conditions in relation to any findings during construction would apply.

3.9 6.6 Access and Parking

(a) *All new lots must be provided with satisfactory pedestrian and vehicular access to a public street.*

(b) *All Use or Development shall provide satisfactory pedestrian and vehicular access which is suited to the volume and needs of future users.*

(c) *Buildings and spaces intended for public access shall provide for satisfactory use and access by the disabled; the requirements of the Building Regulations in relation to AS1428.1-1988 shall be met.*

(d) *Road widths shall be appropriate to the road function, expected traffic type and volume, and future subdivision potential of the subject and surrounding land.*

(e) *Footpaths shall normally be required in areas of new subdivision except where low vehicle traffic volumes are anticipated, in which case a footpath one side only or no footpath may be appropriate.*

- (f) Road intersections shall be kept to a minimum with the use of existing roads, service roads and/or shared driveways being encouraged where appropriate.
- (g) Intersections of roads, footpaths and foot crossings and driveways shall provide adequate safety for all users and shall satisfy the relevant requirements of Schedule 4.
- (h) New Use or Development shall provide a suitably constructed driveway of a width to provide for the safe ingress and egress of the anticipated volume of traffic associated with the Use or Development
- (i) New Use or Development shall provide adequate car parking to provide for the demand it generates and shall be capable of being safely accessed.
- (j) On site turning shall be provided for development involving significant traffic volumes, heavy vehicle types and/or on roads which carry significant amounts of traffic.
- (k) New Use or Development in Bushfire Prone Areas will require access that complies with the provisions of Schedule 7, Development in Bushfire Prone Areas.

Response:

The proposed 19 space car park is considered adequate to service the site. Whilst maximum capacity is 118 including function and offices space, it is unlikely that the capacity of the site will be fully utilised at any one time. It is likely that 90-100 people would be on-site for occasional functions and special events. There is more than adequate on-street capacity along the Esplanade to cater for additional demand when required.

3.10 6.7 Services

- (a) Use or Development shall be provided with adequate and appropriate services which are suited to the lifestyle requirements of people, the nature of the location, and the ability of the community to provide.
- (b) Lot size and arrangement shall be adequate and appropriate to ensure an acceptable level of servicing, particularly in relation to waste disposal.
- (c) In areas not serviced with water use or development shall provide adequate water supply and effluent disposal systems. Each dwelling shall provide a potable water storage facility (minimum capacity of 40kl) to provide for the anticipated number of occupants, and a wastewater disposal system approved by the Council's Environmental Health Officer
- (d) Use or Development in the bushfire prone areas will provide fire protection features and water supplies which comply with Schedule 7.
- (e) Use or Development shall be appropriately sited, designed and constructed to avoid conflict with service mains (including telephone, power, sewer, water and irrigation channels/pipelines). Buildings shall not be erected over any service main or within any easement providing for same whether utilised or not.
- (f) Servicing systems shall use adequate and appropriate design methods and materials to ensure an acceptable life span and allow for adequate maintenance requirements.
- (g) Use or Development shall optimise efficiency in the use of energy and resources. In particular, land should be subdivided on a generally sequential basis (ie. one area is substantially developed before the next is subdivided), common trenching should be used for different services where appropriate, and solar access maximised.

Response:

The subject site is connected to reticulated water. An on-site wastewater disposal system has been designed to cater for a maximum of 118 persons at the site and there is adequate area to provide for this with appropriate soil types as addressed in the wastewater report at **Appendix C**.

3.11 6.8 Social Interest

1. *Use or Development should demonstrate how it suits the community interest.*
2. *Use or Development shall have adequate and appropriate types and levels of access to social facilities and services (eg. shops, government agencies, telecommunication, health services and educational facilities).*

Response:

The proposed use and development has been demonstrated as being in the community interest. It fulfils a number of desired facilities to be provided on the Island as identified in the Destination Action Plan.

3.12 6.9 Administration

- (a) *In considering subdivision and/or rezoning proposals, an appropriate balance shall be maintained between current demand and stock available for use or development, and the number of new lots that would be created.*
- (b) *Use or Development proposals should only be approved where the cost to the public of providing and maintaining services is not exceeded by the economic benefit of the use or development to the community.*
- (c) *In considering any proposal, Council shall obtain the advice and opinion of other relevant group(s), individual(s) or organisation(s) with direct interest in the proposal.*
- (d) *A Development Plan for an integrated development may be prepared and adopted by Council for any area in this Scheme, A Development Plan shall include:*
 - i. *The intended use for the land for which the Development Plan has been created;*
 - ii. *The reason(s) for selection of the area;*
 - iii. *A map showing clearly the area subject to the Development Plan showing principal physical features, including existing use or development, hills/slopes, trees, watercourses and existing services buildings and improvements;*
 - iv. *The nature, form and capacity of proposed services including water, sewerage disposal, power, telephone, roads, footways and reserves;*
 - v. *A plan of subdivision with proposed staging showing lot sizes and layouts, building envelopes where appropriate, and physical features intended to be conserved;*
 - vi. *Any special provisions to be used to control land use and development in the area (eg. height, form, character, materials, colours etc.);*
 - vii. *Any other provisions intended to secure the intention of the Plan. A Development Plan shall be incorporated into the Scheme by way of a Scheme amendment in accordance with the Act*

Response:

Provision of additional services to the site (on-site wastewater) will be a cost borne by the developer and not the public.

It is submitted that adequate information has been included in this application to satisfy the requirements in terms of Development Plan.

3.13 Special Area Provisions

3.13.1 Visually Sensitive Areas

Not applicable as the subject site is not within a Visually Sensitive Areas on the Planning Scheme maps.

3.13.2 Ecologically Sensitive Areas

Not applicable because the subject site is not within an Ecologically Sensitive Area on the Planning Scheme maps.

3.13.3 Heritage Places

Not applicable because the subject site is not listed in Schedule 2.

3.13.4 Shorelines, Water Bodies and Watercourses

The subject site is mapped on the Planning Scheme maps as being a shoreline waterbody.

7.5.2 Development (other than that prohibited within the zone) which pertains to a Shoreline, Water Body or watercourse listed in Schedule 3 shall be considered as a discretionary Use or development in accordance with Clause 3.5.

Response:

The proposal is afforded discretionary status.

7.5.3 Before considering an application pursuant to Clause 7.5.2 Council may require additional information, prepared and submitted for Council's consideration by a suitably qualified person to ensure that the proposal is adequate in terms of:

- (a) contours and levels of the natural surfaces in relation to the range of water levels likely to occur in the vicinity of the proposed use or development;*
- (b) existing water quality and seasonal variations;*
- (c) quantities and qualities of water that are proposed to be abstracted from or discharged to the sea, a waterbody or a watercourse listed in Schedule 3;*
- (d) The likely impact of the proposed use or development on the quality of waters by reason of off-site effects such as erosion, siltation, salination, chemical spray drift, nutrient seepage, seed disposal or other emissions;*
- (e) the natural, ecological, cultural, recreational and aesthetic qualities of the site.*

Response:

The application is informed by a Site and Soil Assessment and Onsite Wastewater System Design prepared by Strata Consulting (copy included as **Appendix C**), and a Stormwater Management Plan (copy included as **Appendix D**).

Whilst some minor cut and fill if required to extend the slab given the width of the building is increasing slightly, it is noted that changes are largely to surfaces that have already been altered. The changes to ground level will not impact on water quality and through the use of retaining walls and grassed batters, any potential erosion can be managed.

It is noted that the main excavation is on the road side of the building which will be protected from wind which will assist in preventing erosion.

7.5.4 In considering an application for use or development in Shorelines, Water Bodies and Watercourses and whether to impose conditions Council shall consider the following matters:

- (a) *The siting, orientation, setback, bulk, form, height, scale, materials and external finishes of buildings and structures.*
- (b) *the impact upon water quality, foreshore or streamside vegetation and wildlife habitat of building, clearing, excavation, effluent disposal, access construction, fences, firebreaks or the deposition of fill;*
- (c) *whether land should be acquired by Council as a condition of subdivision or otherwise, to protect the items listed in Schedule 3;*
- (d) *whether additional fencing or any other special works or practices are required to protect the items listed in Schedule 3;*
- (e) *the design, content and location of signage and interpretative displays.*

Response:

The following response is made in relation to each of the matters listed above:

- (a) The slightly larger footprint of the new building will not impact on the Shoreline as the setback will still be in excess of 60 metres.
- (b) The only potential impact on terms of water quality of the proposed development is the on-site wastewater treatment system, details of which are outlined in the report at **Appendix C**. The system is designed to cater for the full load from the building and will ensure there is no impact on water quality. A plumbing permit will be required for the on-site wastewater system.
- (c) Not applicable.
- (d) No fencing is required to protect any shorelines or waterbodies from this proposed use and development.
- (e) Two wall signs are proposed that will not impact on water quality. They are to be erected on the façade of the proposed building.

3.13.5 Schedule 5 – Signs

In accordance with S5.4, the proposed wall signs are classified as discretionary. It is submitted that the proposed signs meet the conditions of S5.4 in that:

- The signs will not cause any loss of sunlight or daylight to a dwelling unit;
- Will not intrude in terms of size, colour, movement, illumination, position, shape or standard of construction.
- Will only be the proposed wall and roof signs and will not diminish the role of any statutory sign erected on or near the site.
- Will not be illuminated.

4. Conclusion

The proposed development meets all relevant development standards and its only discretionary is in relation to shorelines, water bodies and watercourses, signage and car parking numbers. In all instances it has been demonstrated that the exercise of discretion is appropriate. The demand for car parking in excess of the proposed 19 spaces will only occur occasionally when large functions are held and it is submitted there is sufficient on-street parking to cater for overflow parking during these periods. It is important to note that the terms of the lease requires public access to the wharf and foreshore to be maintained.

Based on all the supporting information provided in this report, it is submitted that there is sufficient justification to approve the development application, particularly given it is substantially similar to that approved under DA010-17.

Appendix A
Proposal Plans

DWG	DWG no	REV DATE											REV	Annexure 4 - A1 - June 2018						
Cover	A0-001	13/04/17	18/4/17	19/4/17	26/4/17	28/4/17	1/5/17	30/11/17	29/3/18				A	B	C	D	E	F	G	H
Site	A1-001	13/04/17	18/4/17	19/4/17	26/4/17	28/4/17	1/5/17	30/11/17	29/3/18	15/5/18			A	B	C	D	E	F	G	H
Site Demolished	A1-002	13/04/17	18/4/17	19/4/17	26/4/17	28/4/17	1/5/17	30/11/17	29/3/18				A	B	C	D	E	F	G	H
Ground Floor Plan	A2-002	13/04/17	18/4/17	19/4/17	26/4/17	28/4/17	1/5/17	30/11/17	29/3/18				A	B	C	D	E	F	G	H
Mezzanine Floor Plan	A2-003	13/04/17	18/4/17	19/4/17	26/4/17	28/4/17	1/5/17	30/11/17	29/3/18				A	B	C	D	E	F	G	H
Elevations	A3-001	13/04/17	18/4/17	19/4/17	26/4/17	28/4/17	1/5/17	30/11/17	29/3/18	11/5/18	15/5/18		A	B	C	D	E	F	G	H
Elevations	A3-002	13/04/17	18/4/17	19/4/17	26/4/17	28/4/17	1/5/17	30/11/17	29/3/18	11/5/18	15/5/18		A	B	C	D	E	F	G	H

THE WHARF SHED

proposed distillery/cafe

17 Esplanade, Whitemark, FLINDERS ISLAND



NOTES

architect - Sam Haberle
accreditation no - CC5618 U
land title ref number - VOL 129006 FOLIO 1
climate zone - 7
BAL - Refer to Assessment

ground floor - 360 m²
first floor/mezzanine - 190 m²

floor area total (inc. mez) - 550M2

deck/paving area - 110 m²



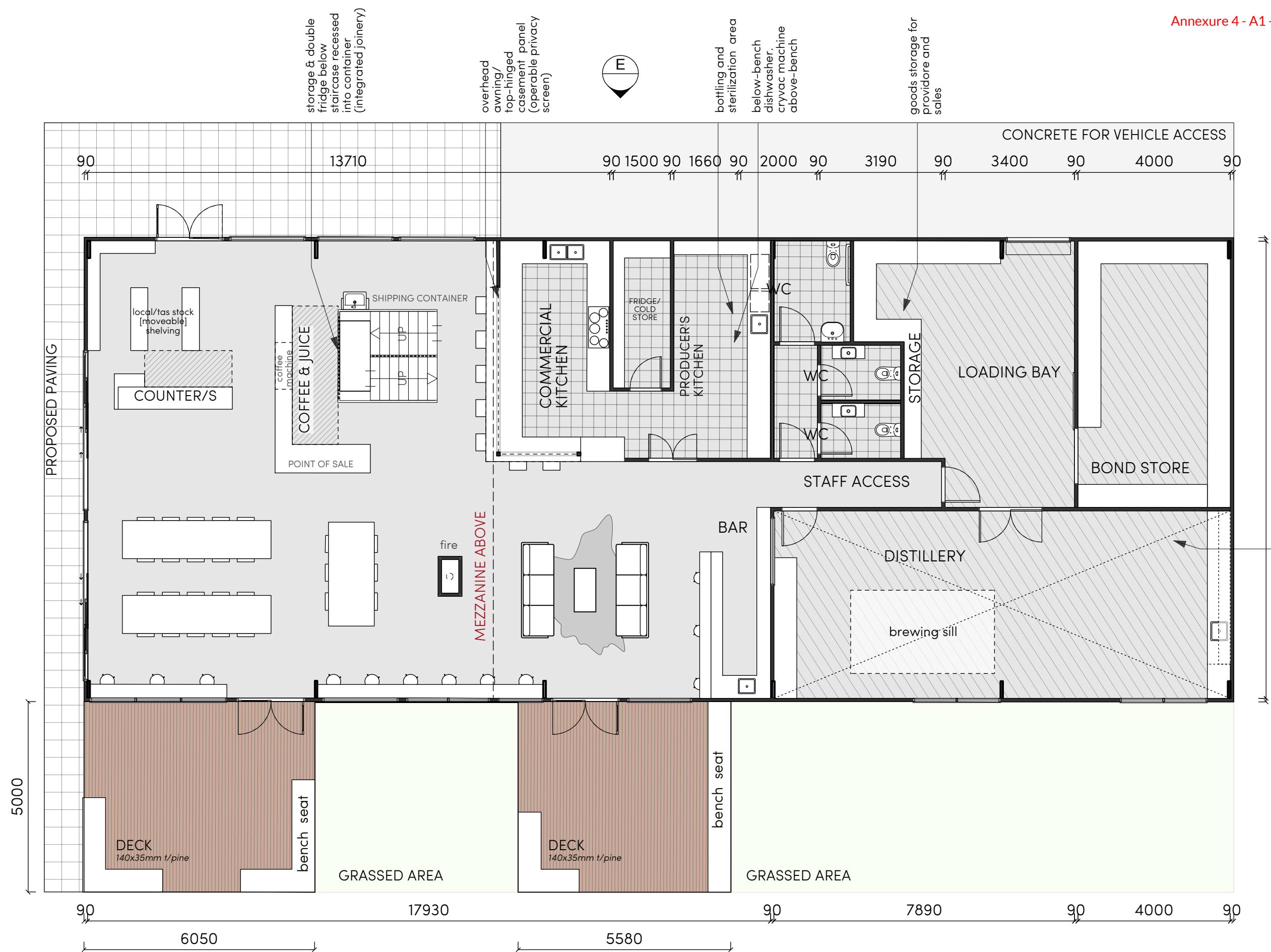
REVISION	H	DATE	29/3/18	DESCRIPTION	New shed design	
ADDRESS	17 Esplanade, Whitemark			do not scale off plans all dimensions in millimetres confirm all dimensions on site all work to relevant NCC and AS	ISSUE	DA
CLIENT	Jo and Tom Youl			SCALE @ A3	NA	DWG #
DWG	Cover			DRAWN	KY	A0-001
				CHKD	SH	PROJECT# J002541





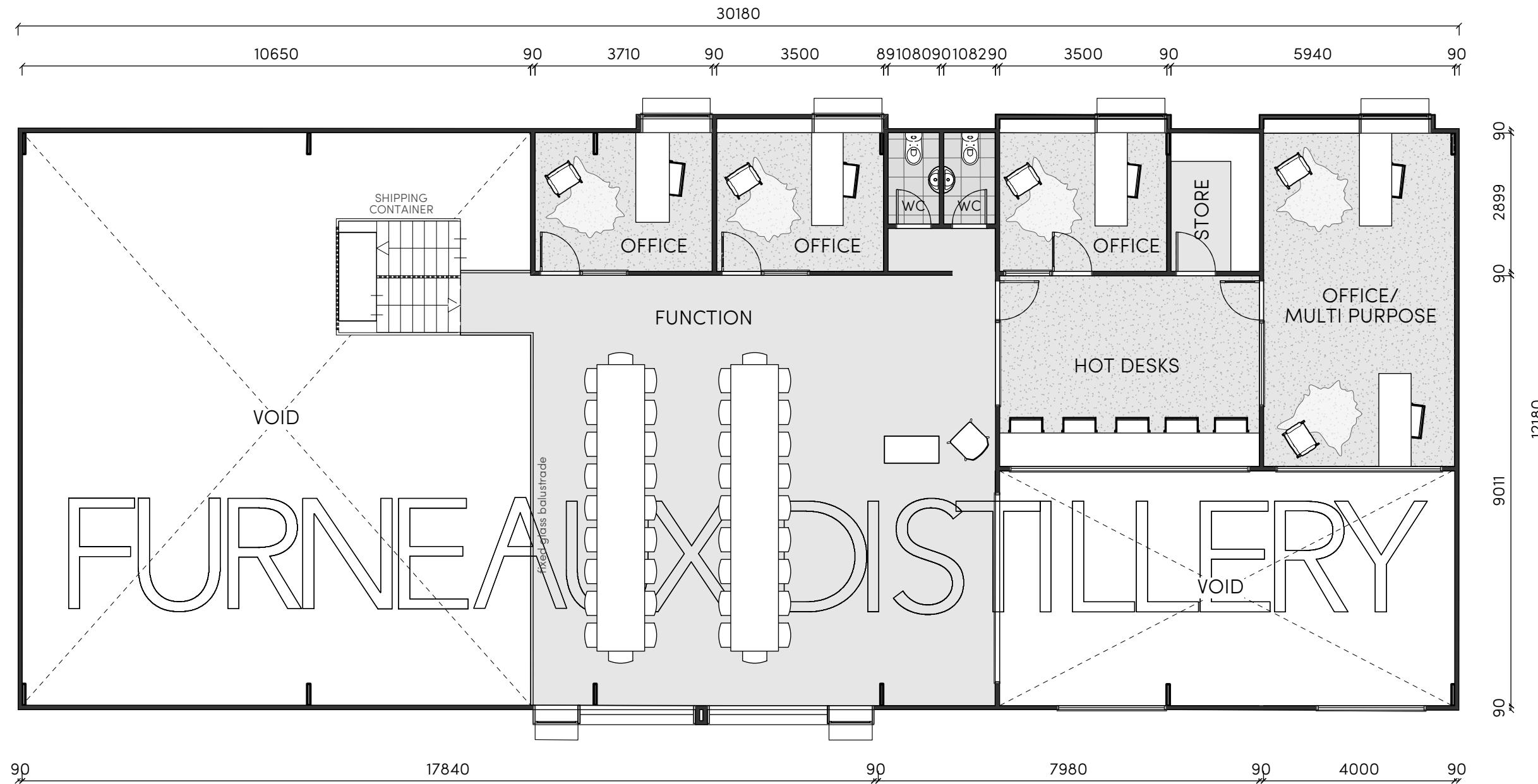
REVISION	DATE	DESCRIPTION	ISSUE
H	29/3/18	New shed design	DA
ADDRESS		17 Esplanade, Whitemark	DWG #
CLIENT	Jo and Tom Youl		A1-002
DWG	Site Demolished	do not scale off plans all dimensions in millimetres confirm all dimensions on site all work to relevant NCC and AS	SCALE @ A3 1:500 DRAWN KY CHKD SH PROJECT# J002541





NOTES:	m ²
DISTILLERY + LOADING	95
BOND STORE	20
AMENITIES/CIRCULATION/STORE	39
KITCHEN/S	40
BAR	47
CAFE/BAR SEATING	130
TOTAL	360

REVISION H	DATE 29/3/18	DESCRIPTION New shed design	ISSUE DA
ADDRESS	17 Esplanade, Whitemark	do not scale off plans all dimensions in millimetres confirm all dimensions on site all work to relevant NCC and AS	DWG #
CLIENT	Jo and Tom Youl		A2-002
DWG	Ground Floor Plan	SCALE @ A3 1:100	
		DRAWN KY	
		CHKD SH	PROJECT# J002541



NOTES:	m ²	NOTES:
OFFICES/HOTDESKS	86.5	all window dimensions to aluminium to be confirmed on site
STORE	6	all glazing to comply with AS1288 & AS2047
AMENITIES/CIRCULATION	9.5	all wet areas to be comply with AS3740
SITTING/FUNCTION	88	all timber framing to comply with AS1684
TOTAL	190	all works to be in compliance with NCC PART J

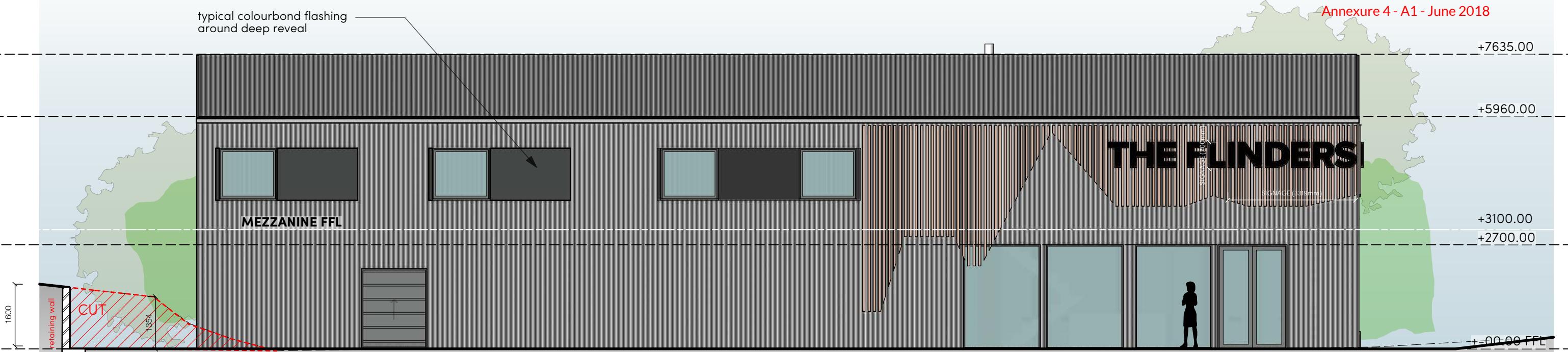
NOTES:
all works to be in compliance with BAL ASSESSMENT



REVISION H	DATE 29/3/18	DESCRIPTION New shed design	ISSUE DA
ADDRESS	17 Esplanade, Whitemark	do not scale off plans all dimensions in millimetres confirm all dimensions on site all work to relevant NCC and AS	DWG #
CLIENT	Jo and Tom Youl	KY	A2-003
DWG	Mezzanine Floor Plan	SCALE @ A3 1:100	PROJECT# J002541
		DRAWN SH	
		CHKD	

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PO Box 1271 Launceston TAS 7250 Australia

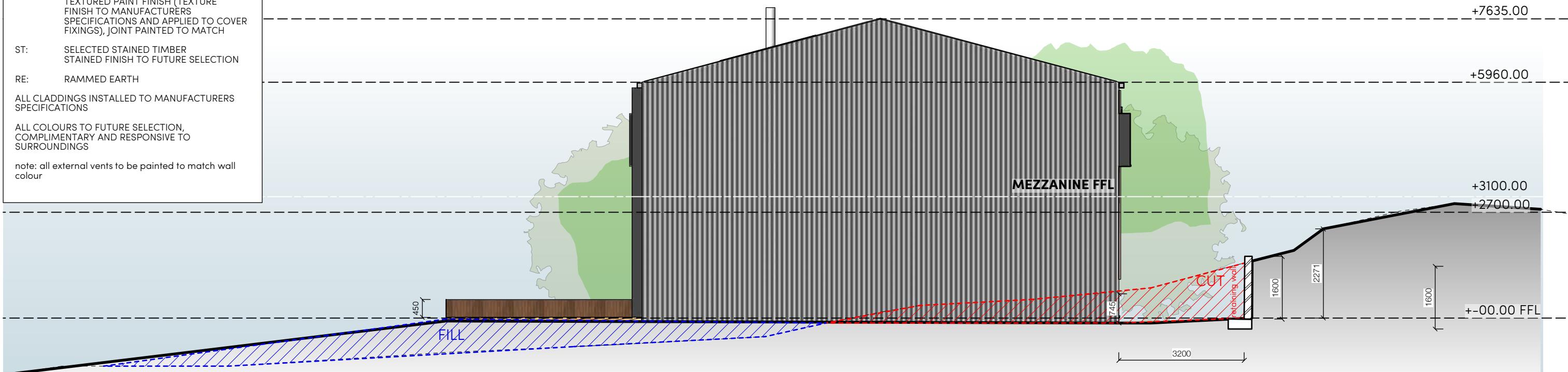
1/10-14 Paterson Street Launceston, Tasmania
T: 03 63 111 403 E: info@sgroup.com.au W: www.sgroup.com.au



note: zincalume (or) galvanised corrugated cladding on exterior of building.
Timber-look battens on facade

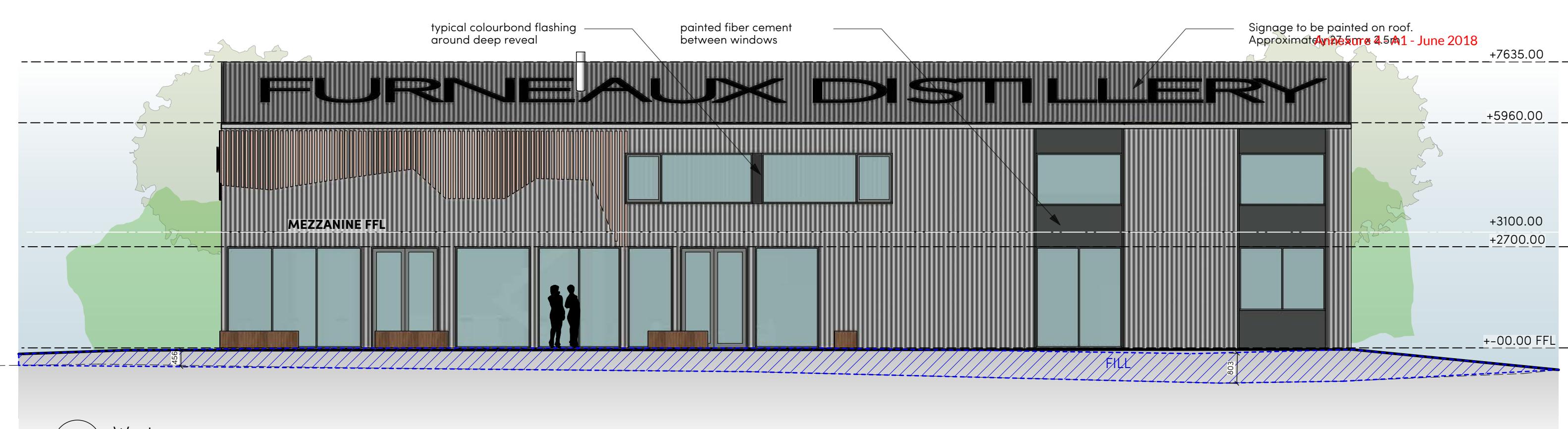
1 East

CLADDING TYPES	
EL:	EASYLAP, JAMES HARDIE TEXTURED PAINT FINISH (TEXTURE FINISH TO MANUFACTURERS SPECIFICATIONS AND APPLIED TO COVER FIXINGS), JOINT PAINTED TO MATCH
ST:	SELECTED STAINED TIMBER STAINED FINISH TO FUTURE SELECTION
RE:	RAMMED EARTH
ALL CLADDINGS INSTALLED TO MANUFACTURERS SPECIFICATIONS	
ALL COLOURS TO FUTURE SELECTION, COMPLIMENTARY AND RESPONSIVE TO SURROUNDINGS	
note: all external vents to be painted to match wall colour	

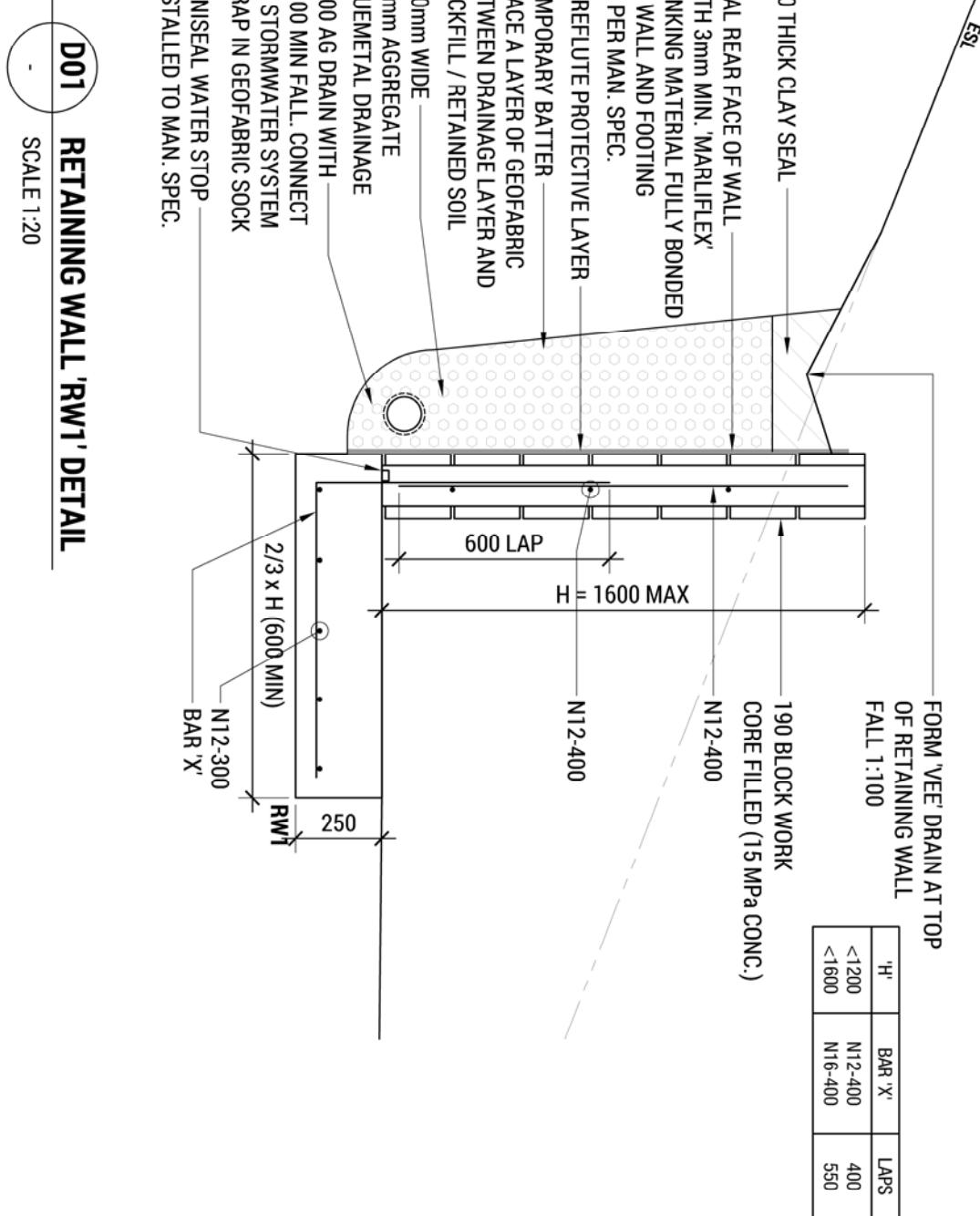


2 South

CONFIRM ALL DIMENSIONS ON SITE
ALL DIMENSIONS TO WALL FRAME
LOCATION OF SITE FEATURES DERIVED
FROM AERIAL PHOTOGRAPHY



note: zincalume (or) galvanised corrugated cladding on exterior of building.
Timber-look battens on facade



Appendix B
Title Documentation

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
129006	1
EDITION	DATE OF ISSUE
3	10-May-2007

SEARCH DATE : 13-Apr-2017

SEARCH TIME : 09.03 AM

DESCRIPTION OF LAND

Town of WHITEMARK

Lot 1 on Plan 129006 (Section 27A of the Land Titles Act.)

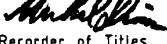
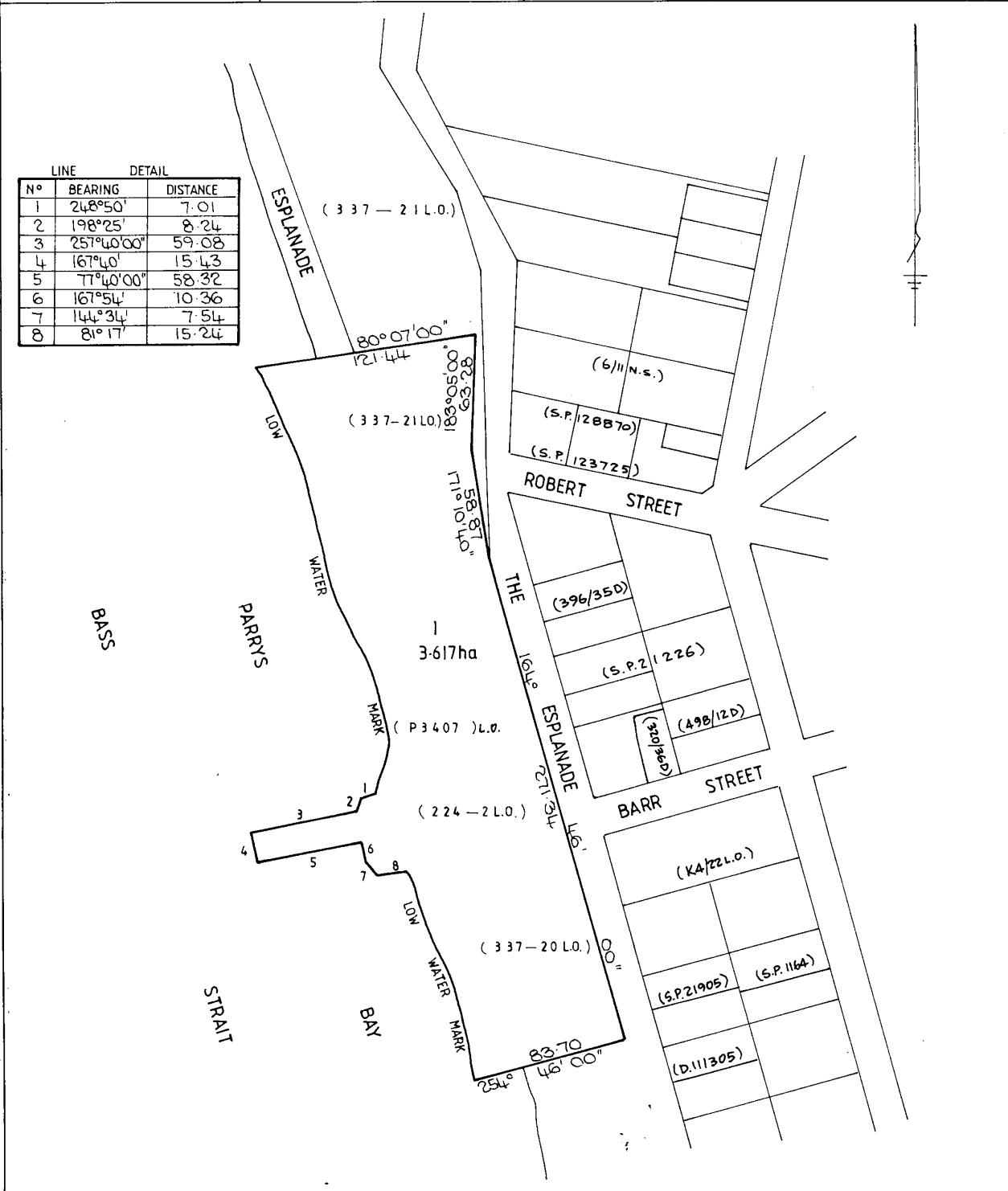
Derivation : Whole of Lot 1 on Plan 129006 Gtd. to The Crown

SCHEDULE 1C456767 TRANSFER to TASMANIAN PORTS CORPORATION PTY LIMITED
Registered 10-May-2007 at noon**SCHEDULE 2**

C63319 Land is limited in depth to 15 metres below the surface and seabed, excludes minerals and is subject to reservations relating to drains sewers and waterways in favour of the Crown

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

OWNER THE CROWN		PLAN OF SURVEY		REGISTERED NUMBER P 129006																											
FOLIO REFERENCE SECTION 27A (C.63319)		BY SURVEYOR R.V.TAIT OF COHEN & ASSOCIATES PTY LTD, LAHINCESTON		42/00 (3549)																											
GRANTEE LOT 1, 3.617ha The Crown		LOCATION TOWN OF WHITEMARK		APPROVED EFFECTIVE FROM 20 NOV 1997  Recorder of Titles																											
		SCALE 1:2000 LENGTHS IN METRES																													
MAPSHEET MUNICIPAL CODE No. 110 / 5855 - 12S	LAST UPI No. 4900061 49 00064	LAST PLAN No. —	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN																												
 <p>LINE DETAIL</p> <table border="1"> <thead> <tr> <th>No.</th> <th>BEARING</th> <th>DISTANCE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>248°50'</td> <td>7.01</td> </tr> <tr> <td>2</td> <td>198°25'</td> <td>8.24</td> </tr> <tr> <td>3</td> <td>257°40'00"</td> <td>59.08</td> </tr> <tr> <td>4</td> <td>167°40'</td> <td>15.43</td> </tr> <tr> <td>5</td> <td>77°40'00"</td> <td>58.32</td> </tr> <tr> <td>6</td> <td>167°54'</td> <td>10.36</td> </tr> <tr> <td>7</td> <td>144°34'</td> <td>7.54</td> </tr> <tr> <td>8</td> <td>81°17'</td> <td>15.24</td> </tr> </tbody> </table>					No.	BEARING	DISTANCE	1	248°50'	7.01	2	198°25'	8.24	3	257°40'00"	59.08	4	167°40'	15.43	5	77°40'00"	58.32	6	167°54'	10.36	7	144°34'	7.54	8	81°17'	15.24
No.	BEARING	DISTANCE																													
1	248°50'	7.01																													
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6	167°54'	10.36																													
7	144°34'	7.54																													
8	81°17'	15.24																													

A-148

Appendix C
On-site wastewater report



To Whom It May Concern:

RE: Proposal of Additional Floorspace to Wharf Shed – 17 Esplanade Flinders Island

Strata Geoscience and Environmental P/L has prepared storm and wastewater system designs for the above project. The project is subject to a minor amendment with a slight increase in footprint. It is understood that this addition will not involve an increase in patrons from the original modelling. As such it will not affect influent into the wastewater system and is within the buffering capacity for flows into the stormwater system.

Please do not hesitate to contact me directly if you have any further questions regarding the above or require further information.

Regards,

A handwritten signature in blue ink that appears to read "Sven Nielsen".

Sven Nielsen MEngSc,CPSS
Director
E: sven@strataconsulting.com.au
P: 0413545358
W: www.strataconsulting.com.au





strata
geoscience and environmental

Site and Soil Assessment and Onsite Wastewater System Design for

**Proposed Upgrades,
Whitemark Wharf Shed
Flinders Island**

March 2017

Important Notes:

The author, Strata Geoscience and Environmental, gives permission for this report to be copied and distributed to interested parties only if it is reproduced in colour and in full including all appendices. No responsibility is taken for the contents and recommendations of this report if it is not reproduced as requested.

Strata Geoscience and Environmental reserves the right to submit this report the relevant regulatory agencies where it has a responsibility to do so.

1. Introduction

Strata Geoscience and Environmental Pty Ltd was commissioned to perform a limited scope geotechnical and environmental investigation for:

Client and Site Details	
Client Name	Quoin Holdings
Site Address	Whitemark Wharf Shed, Flinders Island
Proposed Development	Conversion to restaurant /café with office space and meeting rooms

The investigation was reference to AS1547-2012 Onsite Domestic Wastewater Management, the Tasmanian Building Act 2016 Directors Guidelines for Onsite Wastewater Management Systems and also follows the principles outlined in AS1726-1993 Geotechnical Site Investigations.

2. Summary of Investigation

The investigation's key findings were:

SSE and Design Outcomes	
Key Site and Soil Limitations to Wastewater System Design	Land area, proximal surface waters
Summary of Proposed System Specification	Primary Treatment: Grease Trap/Septic Tank Secondary Treatment: AWTS Land Application: Pressurised Beds

3. Project Specific Criteria

Site plans (if available) are presented in Appendix 1.

4. Investigation

Please refer to Appendix 4 for the results of field investigation including bore logs and other relevant data.

5. Interpretation

The site is underlain Quaternary sand deposits.

With respect to the sustainability of long term disposal of wastewater within the site boundaries the following comments are made:

Soils – Natural soils will have a high permeability for the acceptance of wastewater flows and will show a low cation exchange complex for the absorption of nutrients from effluent.

Environmental Sensitivities – The development area is gently sloping with nearest surface water body located approximately 30+ m down slope of the proposed land application area. Groundwater was not intersected throughout geotechnical investigation and is anticipated to be several meters beneath the existing ground surface.

Climate - the nearest weather station with long term data is the Whitemark Station with a mean annual rainfall of 715.4 mm (BOM 2014) and no evaporation data.

Title Searches – Searches of the Land Title did not show any easements or right of ways which have affected the positioning of the wastewater land application system.

Given the above, the general environmental and public health risk associated with the site is regarded as low provided adequate setback distances and other controls are adopted. Please refer to specific design notes and diagrams contained within this report for further information regarding the issues raised above.

6. Onsite Wastewater Flow and Land Application Area Modelling

6.1 Site and Soil Considerations

Results of the SSE (Appendix 4) found the following typical soil profile on site:

Topsoils (A1-A3)	
Description	SAND (SP/SW/SM)
Soil Category (AS1547-2011)	1
Indicative Permeability (m/d)	2.0
Recommended DIR (mm/d)/DLR (L/D)	50
pH	6.0
EC	2.4
Emmerson Class	8

6.2 Risk Management

Risk identification and reduction measures compliant with AS1547 – 2012

Clause A3.2 is presented below:

*Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed*

Risk	Factors that Increase	Design Risk
	Risk Likelihood	Reduction Measures
Hydraulic Overloading of System	<ul style="list-style-type: none"> • Under scaled system • Prolonged overuse • Leaking taps • Shock Loading • Excessive solid disposal 	<ul style="list-style-type: none"> • Scale to peak potential loading • Use Conservative DLR/DIR • Use water conservation practices eg water reduction fixtures • Use balance tank • Use septic/grease trap pre treatment
Biological Failure	<ul style="list-style-type: none"> • Overuse of household chemicals • Shock loading 	<ul style="list-style-type: none"> • Limit detergents and bleach use where practical • System not fit for spa or sinkerator installation
Site Constraints	<ul style="list-style-type: none"> • Surface waters 	<ul style="list-style-type: none"> • Min 30m setback from high tide mark
High Rainfall/Torrential Rainfall	<ul style="list-style-type: none"> • Inappropriate LAA Scaling • Stormwater impacts 	<ul style="list-style-type: none"> • Use suitable hydraulic scaling • Stormwater Diversion around LAA if required
Clogged Outlet Filter	<ul style="list-style-type: none"> • Overloading • Infrequent cleaning 	<ul style="list-style-type: none"> • Clean monthly
Pipe Blockages	<ul style="list-style-type: none"> • Overloading • Infrequent de-sludging 	<ul style="list-style-type: none"> • Reduce solids inflows • De-sludge septic max 1 year intervals

Risk	Factors that Increase	Design Risk
	Risk Likelihood	Reduction Measures
Sludge transport to LAA	<ul style="list-style-type: none"> • Infrequent de-sludging • Clogged outlet filter • High organic loading 	<ul style="list-style-type: none"> • De-sludge septic max 3 year intervals • Clean filter monthly • No sinkerator installation
Broken pipes in LAA	<ul style="list-style-type: none"> • Stock/vehicles 	<ul style="list-style-type: none"> • Exclude stock/vehicles

6.3 Proposed Wastewater System Concept Design

It is therefore recommended that the following system be adopted:

Treatment Train Component	Proposed Concept Design
Primary Treatment	<ul style="list-style-type: none"> • Grease trap, Septic tank, balance tank
Secondary Treatment	<ul style="list-style-type: none"> • AWTS
LAA Design	<ul style="list-style-type: none"> • Pressure dosed bed

6.4 Effluent Flow and Land Application Area Modelling

The development proposal is for the installation of the sewage treatment infrastructure associated with the existing shed which is to be converted to a restaurant/café with office space and meeting room. The following loadings have been modelled*

1. Restaurant*¹ – Maximum 90 EP at max 40L/EP/day – **3600L/D**
2. Offices*² – Maximum 20 EP at max 20L/EP/day – **400L/D**
3. Staff*³ - 6 Staff and 2 Managers at max 20L/EP/day – **160 L/D**

* Loadings taken from Table 4 Tasmanian Building Act 2016 Directors Guidelines for Onsite Wastewater Management Systems (Appendix 2):

*1 – Loadings for “Restaurants”, *2 – Loadings for “Factories/ Offices”, *3 – Loadings for “Factories/ Offices”

Therefore the total daily wastewater being produced is:

Wastewater System Modelling	
Number of Equivalent Persons	118
Water Source (Tank/Mains)	Mains
Daily Loading (L/per person/D)	40/20
Total Daily Loading (L/D)	4160
Adopted Amended Soil Category (AS1547-2012)*	1
Indicative Permeability (m/d)	2
Adopted Amended DLR/DIR (mm/d OR L/m ² /d)*	50
Required LAA (m ²)	83

6.5 Consideration of BOD

Based upon Table 4 Tasmanian Building Act 2016 Directors Guidelines for Onsite Wastewater Management Systems the maximum daily influent BOD would contributions are as follows:

1. Restaurant 90 EP at 50g BOD/day = 4500 g BOD/d
2. Offices 20 EP at 15g BOD/day = 300 g BOD/d
3. Staff 8 EP at 15g BOD/day = 120g BOD/d

Therefore maximum BOD/d= 4420 g BOD/d. The recommended WTP treatment plant has the potential to treat this amount of BOD and it is noteworthy that significant reduction of BOD loadings into the WTP will be achieved through both the grease trap and septic tank.

6.6 System Specifications

The system has the following specifications:

1. Min 3000L Approved Grease Trap to intercept all kitchen effluent
2. Min 4000L Approved Dual Purpose Septic Tank with Outlet filter
3. Min 4000L Balance Tank – recommend Netco model NPE-4000-S/GW or similar
4. Min 4200L Waste Treatment Plant (WTP) – Recommend Fuji clean Model CE4200 or similar
5. Flow rate meter
6. One two way pressure dosed sequencing valve
7. Two 12m x 3.5m pressure dosed beds
8. 100% reserve area (must remain development free)

6.7 System Operation, Maintenance and Management

A system operation, maintenance and management manual will be prepared before system installation to detail all relevant aspects of system operation including maintenance, servicing and troubleshooting.

7. Conclusions and Further Recommendations

In conclusion the following comments and recommendations are made:

- The maximum wastewater flow rate (MWWF) modelling conducted in this report shows that the generated flows from the proposed development are likely to be no more than 4160L/day.
- That the treatment train should comprise the following components:
 - Min 3000L Approved Grease Trap to intercept all kitchen effluent
 - Min 4000L Approved Dual Purpose Septic Tank with Outlet filter
 - Min 4000L Balance Tank
 - Min 4200L Waste Treatment Plant (WTP)
 - Flow rate meter
 - One two way pressure dosed sequencing valve
 - Two 12m x 3.5m pressure dosed beds
 - 100% reserve area (must remain development free)
- That the WTP is serviced quarterly in compliance with the manufacturers specifications.
- That the septic tank and grease trap are de-sludged annually.
- That wastewater flows are recorded on service reports quarterly.
- That two 10m x 3.5m septic beds be installed as identified on the site plan.



S Nielsen MEngSc CPSS-2
Director
Strata Geoscience and Environmental Pty Ltd



*Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed*

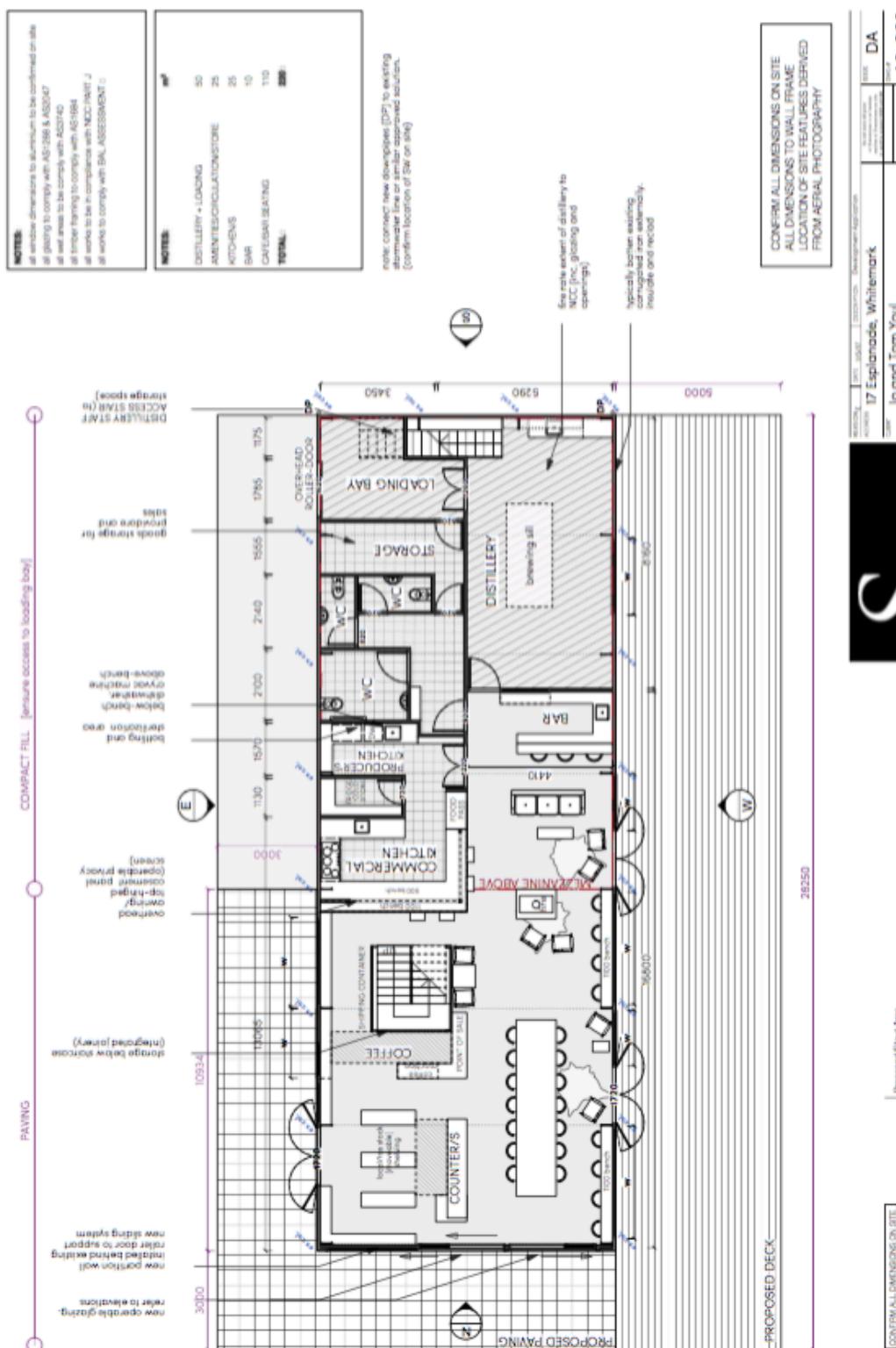
E:sven@strataconsulting.com.au

8. References

- AS1726-1993- Geotechnical Site Investigations
- AS 1547-2012 Onsite Wastewater Disposal
- Bureau of Meteorology Website- Monthly Climate Statistics

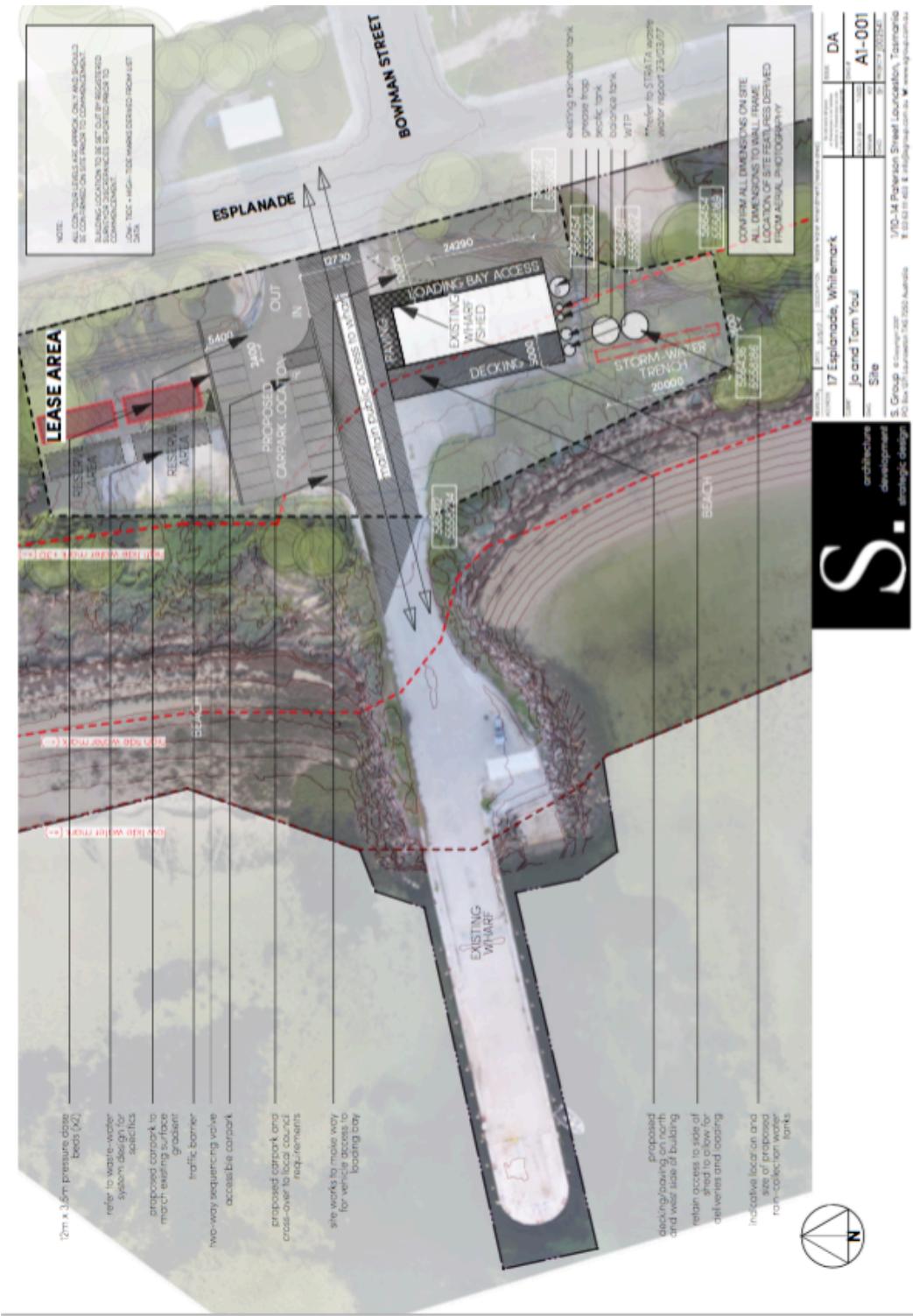
Onsite Wastewater System Design Proposed Upgrades Whitemark Wharf Shed

Appendix 1 Development Plans



*Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed*

Appendix 2 System Specifications



*Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed*

Balance Tank Specifications



2 Austral Place, PO Box 800
Derwent Park, TAS 7009

p. 03 6272 6628
f. 03 6272 6281

sales@netcopumps.com.au
www.netcopumps.com.au

Greywater Pumping Station 1

Selection Criteria : Netco NPE Series pump stations are purpose-designed to suit specific site requirements, and there are many variables that affect the design of a pump station. It is important to note that this pump station proposal has been worked out based upon the following criteria:

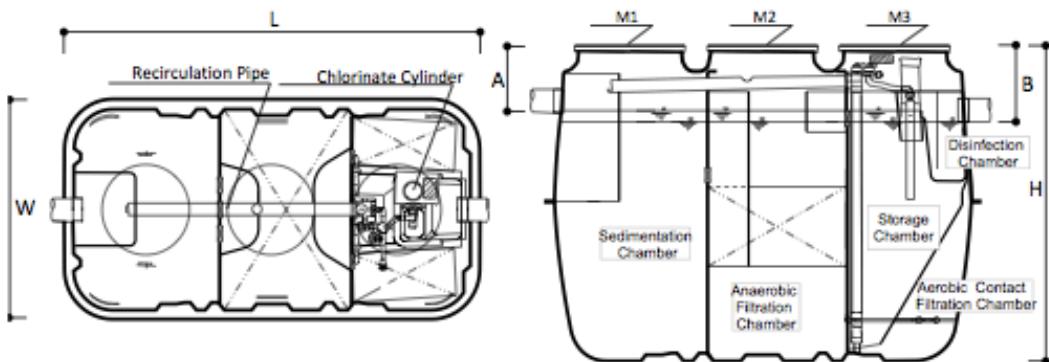
- Chamber Capacity : 4000 Litres
- Flow Requirement : 500-1000 Litres at a time
- Static Head : 0 metres
- Rising Main Length : 24 metres
- Rising Main Size : 40mm OD (32.3mm ID) SDR11 Poly
- Pump Configuration : Single-Pump, Free Standing
- Power Requirement : Single-Phase
- Pumped Medium : Septic Overflow

*Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed*

WTP Specifications

SPECIFICATION

Flow Diagram



Design Hydraulic and Effluent Data

Water Quality Specifications			
Designed Hydraulic Loading	6000L/day	Effluent Quality Field Data	BOD≤10mg/L
Treatment Method	Contact Filter Bed Process	SS	≤ 10mg/L
Nitrogen Removal	Yes	T-N	≤ 20mg/L*
Phosphorous Removal	Yes	T-P	≤ 2mg/L
Classification	Secondary Treatment System		

*Dependent on influent raw water quality

Model Specification

CE4200 - Model Specifications			
Equivalent Person (EP)	21	Dimensions(mm)	
Capacity(L)	4,200	Max Width (W)	1,840
Sedimentation Chamber	3,169	Max Length (L)	3,880
Anaerobic Filtration Chamber	3,177	Max Height (H)	2,065
Aerobic Contact Filtration Chamber	1,431	Inlet Invert (A)	400
Storage Chamber	703	Outlet Invert (B)	450
Disinfection Chamber	44	Inlet Pipe Nominal Size	dia.125
Total Volume	8,524	Outlet Pipe Nominal Size	dia.125
Weight(kg)	530		
Correspondent Blower Type	MAC150N		
Construction Material	Fiberglass Reinforced Plastic (FRP)		

Model CE6000			
Equivalent Person (EP)	30	Dimensions(mm)	
Capacity(L)	6,000	Max Width (W)	1,990
Sedimentation Chamber	4,520	Max Length (L)	4,665
Anaerobic Filtration Chamber	4,511	Max Height (H)	2,215
Aerobic Contact Filtration Chamber	2,006	Inlet Invert (A)	400
Storage Chamber	1,009	Outlet Invert (B)	450
Disinfection Chamber	64	Inlet Pipe Nominal Size	dia.125
Total Volume	12,110	Outlet Pipe Nominal Size	dia.125
Weight(kg)	700		
Correspondent Blower Type	MAC200N		
Construction Material	Fiberglass Reinforced Plastic (FRP)		

*Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed*

Indexing Valve Specification

K-RAIN MODEL 4000: DISTRIBUTING VALVE

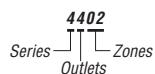
The 4000 distributing valve offers a reliable, economical way to automate multiple zoned residential and small commercial irrigation systems. The simplicity of design and a minimum of moving parts ensures ease of maintenance and long service life.

These patented valves allow for the number of watering zones to be changed quickly and easily. They are ideally suited for both city water and pump applications and may also be used for onsite wastewater or effluent water applications.

The 4000 valve is available in 4 or 6 outlet models. A quick change of the cam allows the valve to operate from 2 to 6 zones. The valve will operate with flows as low as 10 GPM and at pressures of 25 to 75 PSI.

The distributing valve shall carry a two-year trade warranty against manufacturing defects.

HOW TO SPECIFY



IRRIGATION SOLUTIONS WORLDWIDE™

K-Rain Manufacturing Corp.
1640 Australian Avenue
Riviera Beach, FL 33404 USA
PH: 1-561-844-1002 FAX: 1-561-842-9493
1-800-735-7246
EMAIL: kraint@k-rain.com
WEB: <http://www.k-rain.com>

MODELS

4 Outlet - 1 1/4" x 1 1/4" Models

4400	No Cam
4402	Cammed for 2 Zone Operation
4403	Cammed for 3 Zone Operation
4404	Cammed for 4 Zone Operation

Other Options: Add to Part Number
RCW Reclaimed Water Use

4 Outlet - 1" x 1" Models

4410	No Cam
4412	Cammed for 2 Zone Operation
4413	Cammed for 3 Zone Operation
4414	Cammed for 4 Zone Operation

6 Outlet - 1 1/4" x 1" Models

4600	No Cam
4602	Cammed for 2 Zone Operation
4603	Cammed for 3 Zone Operation
4604	Cammed for 4 Zone Operation
4605	Cammed for 5 Zone Operation
4606	Cammed for 6 Zone Operation

Other Options: Add to Part Number
RCW Reclaimed Water Use

6 Outlet - 1" x 1" Models

4610	No Cam
4612	Cammed for 2 Zone Operation
4613	Cammed for 3 Zone Operation
4614	Cammed for 4 Zone Operation
4615	Cammed for 5 Zone Operation
4616	Cammed for 6 Zone Operation

SPECIFICATIONS

- Constructed of High Strength, Non-Corrosive ABS Polymer
- Flow Range:
4 Outlet Valve: 10-40 GPM
6 Outlet Valve: 10-25 GPM
- Pressure Rating: 25 - 75 PSI
- Pressure Loss:
4 Outlet Valve
Flow (GPM) 10 20 30 40
PSI Loss 2.0 3.0 4.5 6.4
6 Outlet Valve
Flow (GPM) 10 20 30
PSI Loss 2.5 4.5 7.5
- Inlet: Slip and Glue Connection
4400 Series: to 1 1/4" PVC Pipe
4410 Series: to 1" PVC Pipe
4600 Series: to 1 1/4" PVC Pipe
4610 Series: to 1" PVC Pipe
- Outlets: Slip and Glue Connections
4400 Series: to 1 1/4" PVC Pipe
4410 Series: to 1" PVC Pipe
4600 Series: to 1" PVC Pipe
4610 Series: to 1" PVC Pipe
- Dimensions: Height: 5-3/4"
Width: 5-3/4"

INSTALLATION TIPS

- We Recommend the Installation of an Atmospheric Vacuum Breaker Between the Pump and the Valve.

Pressure Dosed Bed Design and Construction Notes

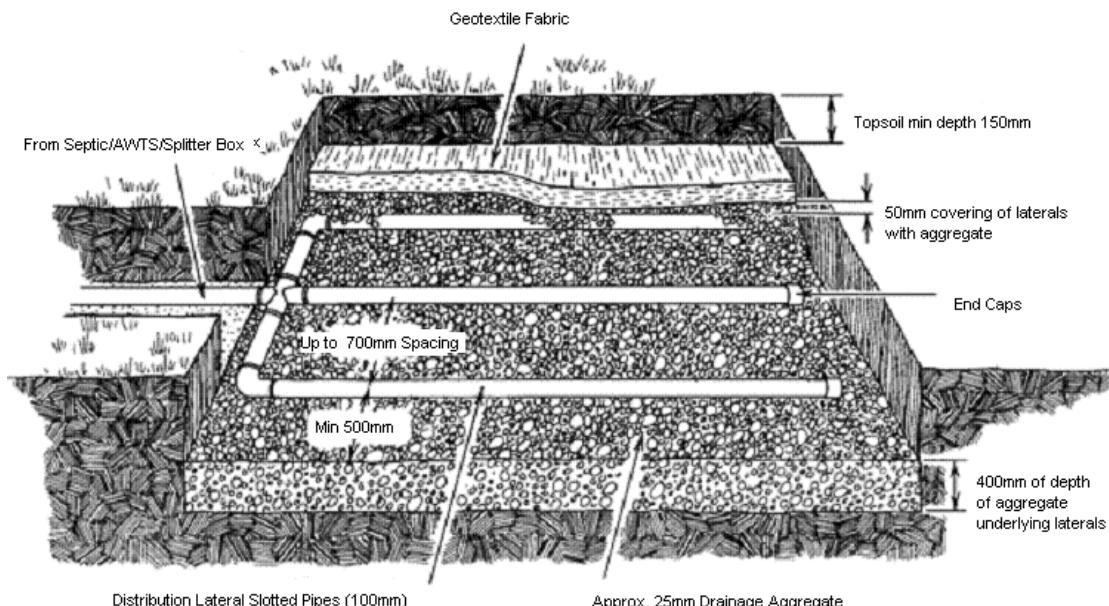


Figure 1 Bed cross section showing key dimensions

Pressure Dosed Bed Design and Construction Notes

1. Each bed has the dimensions of 12 m X 3.5 m X 0.6 m.
2. There are two beds in total as located on site plan giving a total trench area of 84 m² (See Appendix 1)
3. The base of the bed **MUST** be excavated evenly and level. In clay soils smearing of walls and floors of bed **MUST** be avoided. Bed bases **MUST** be treated with Gypsum at a rate of 1Kg/5m²
4. The lower 400mm is to be filled with 20-25mm aggregate.
5. Bed lateral distribution pipes consist of 25 mm PVC pipe with 3-5mm holes drilled and de-burred at 350mm centres. These pipes must be orientated with the hole facing upward. A residual head (squirt height) of 1.5 m should be achieved across all distribution pipes. This **MUST** be tested prior to covering with 100 mm PVC pipe slotted in the 8 o'clock and 4 o'clock positions (ie slots facing downwards). Distribution pipes **MUST** be level to ensure an even wetting front over the entire bed floor.
6. Distribution pipes **MUST** have flush points fitted. These may be pressure controlled flush valves inside an irrigation control box. Laterals should be flushed every 12 months.
7. A further 50mm of aggregate can be added around/over the grid before overlaying with geo-textile to prevent soil from clogging gravels/lateral slots. For sandy soils the sides of the bed should also be lined.
8. Backfilling of the trench to 50 - 75mm above original ground surface level with endemic topsoil (if a sand/loam) or imported loam should proceed. Do not mechanically compact this layer.
9. An inspection outlet should be placed on each distribution pipe.
10. Slight adjustments to the location of Septic Tank/Flow Diverter/Beds are permitted to achieve correct fall to levelled bed base(s).
11. Vehicles and livestock **MUST** be excluded from bed area.

Appendix 2 Detailed Wastewater Design Calculations

Wastewater Loading Certificate*

System Capacity	4160L/day
Design Summary	
• Effluent Quality	Secondary
• Adopted Soil category	1
• Amended Adopted Soil Category	NA
• Adopted DLR/DIR (mm/d OR L/m ² /d)	50
• LAA Design	Bed
• Primary LAA Requirement	84 m ²
• Reserve Area	Min 100% reserve LAA must be maintained in an undeveloped state near the primary system as identified on the site plan
Fixtures	Assumes Std Water saving fixtures inc 6/3L dual flush toilets, aerator forcets, Washing/dishwashing machines with min WELS rating 4.5 star
Consequences of Variation in Effluent Flows	
• High Flows	The system should be capable of buffering against flows of up to 10% above modelled in a 24 hr period. System not rated for spa/bath installation.
• Low Flows	Should not affect system performance
Consequences of Variation in Effluent Quality	Residence to avoid the installation of sink disposal systems (eg “sinkerators”), or the addition of large amounts of household cleaning products or other solvents. These can overload system BOD or affect effluent treatment by system biota.
Consequences of Lack of Maintenance and Monitoring Attention	<p>Owners should maintain the system in compliance with Home Owners Manual.</p> <p>All livestock, vehicles and persons to be excluded from the LAA.</p> <p>Failure to ensure the above may lead to infection of waterways, bores or the spread of disease, as well as production of foul odours, attraction of pests and excessive weed growth.</p>

Table 4 Minimum daily wastewater allowance for non-residential buildings

Source	Design hydraulic loading Litres/person/day	Design organic loading grams/person/day
Motel – per bar attendant	1000	120
Motel – meals per diner	10	10
Motel – per resident guest and staff (in house laundry)	150	80
Motel – resident guest and staff (out sourced laundry)	100	80
Restaurant per seat	40	50
Tea rooms and café per seat	10	10
Take-away food per customer	10	40
Conference /function centre	30	35
Public toilet	6	3
Public hall, theatre, gallery (no kitchen)	3	2
Public hall, theatre, gallery (with kitchen)	10	5
Public building with showers and toilets (sports club, gym, pool)	50	10
Hospital (per bed)	350	150
Childcare centre per child and staff	20	20
Factory, office, medical centre per person	20	15
Campgrounds (fully serviced)	150	60
Camp Grounds (with showers and toilets)	100	40

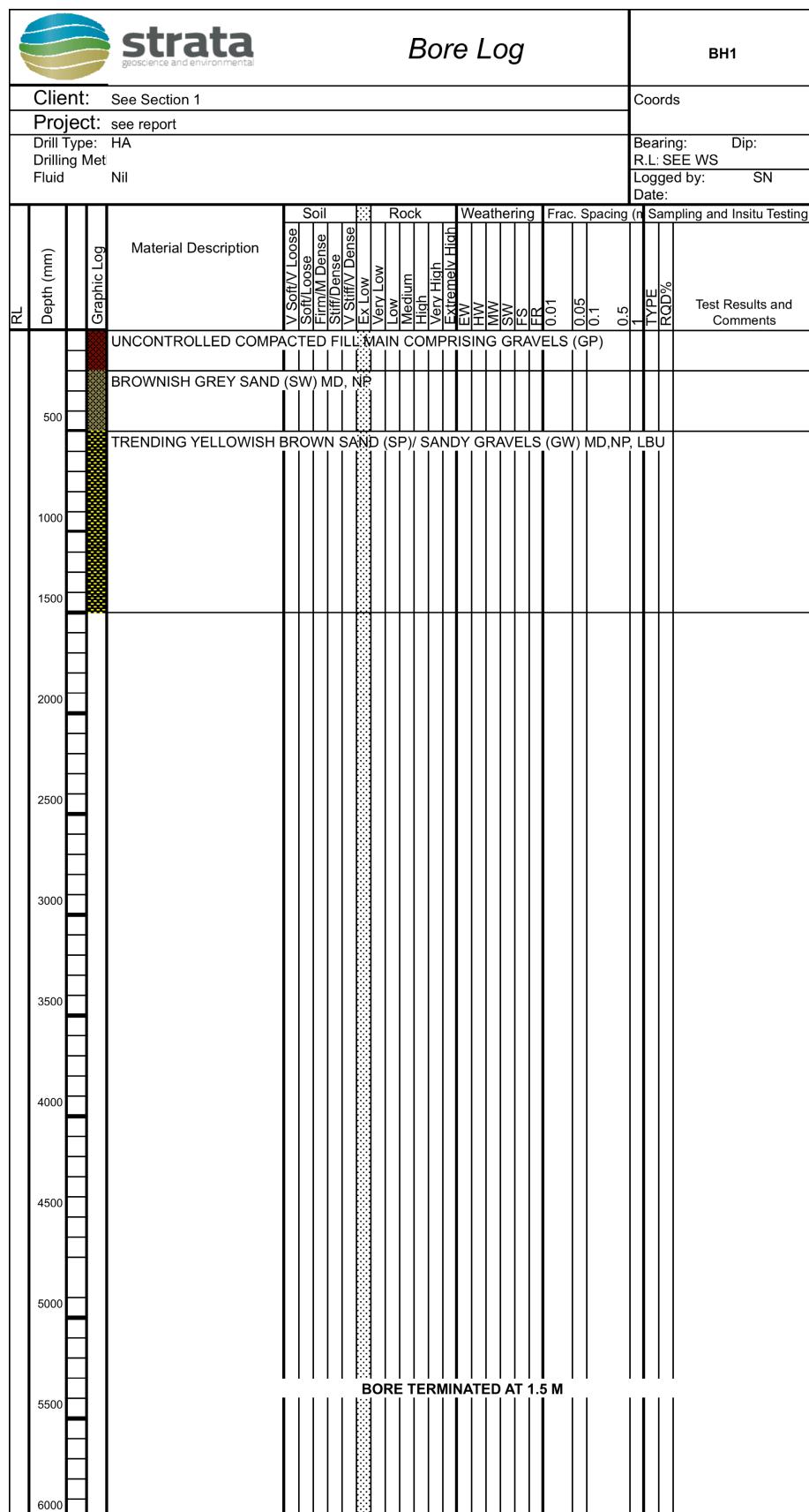
Adapted from Guidelines for Environmental Management – Code of Practice Onsite Wastewater Management EPA Victoria 2013

Appendix 3 Site and Soil Evaluation

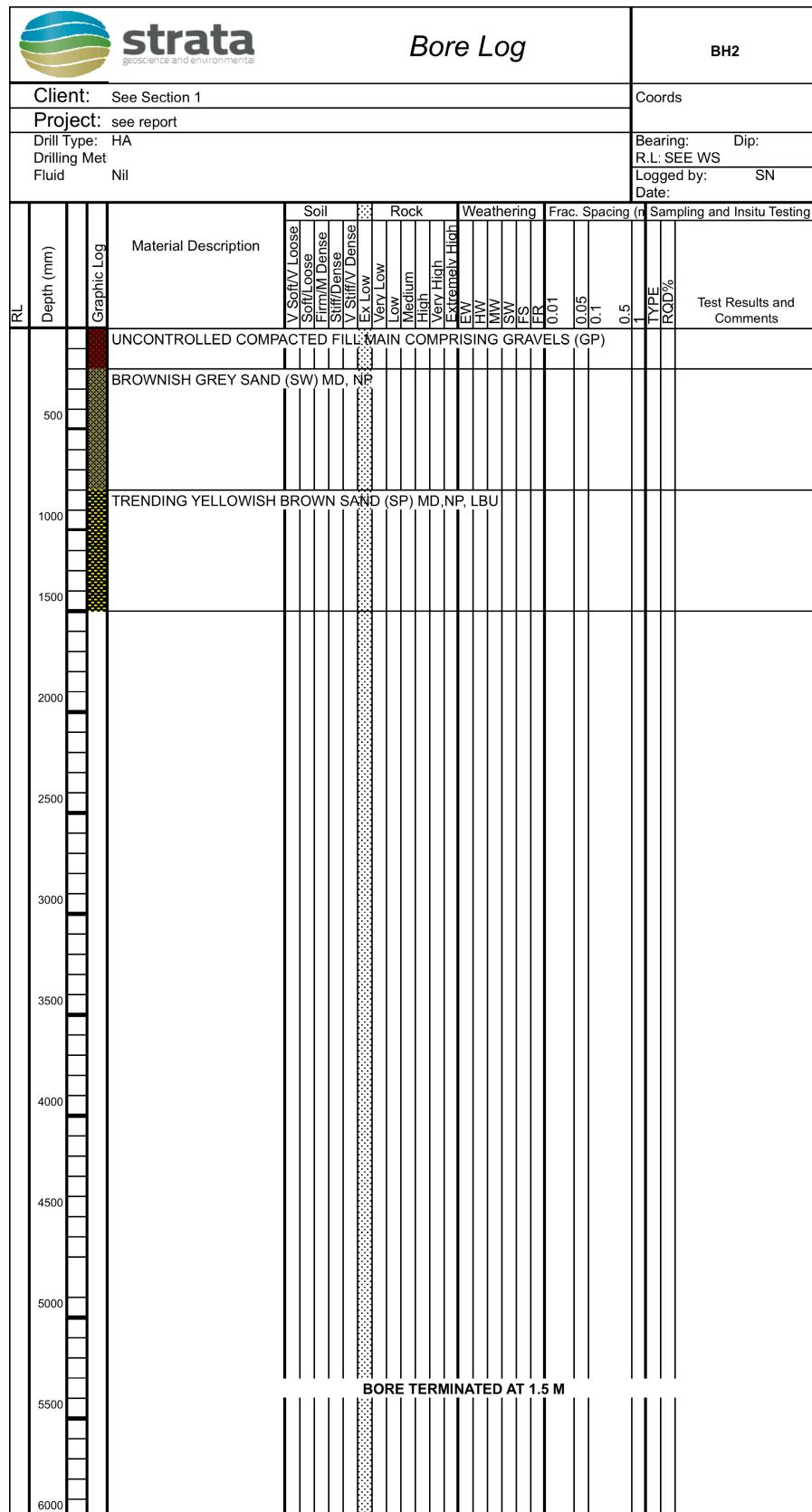
Table 3 Site Features

Climate	The nearest weather station with long term data is the Whitemark Station with a mean annual rainfall of 715 mm (BOM 2014) and no evaporation data. The region has a near Mediterranean climate with maximum temperatures and minimum rainfall in the summer.
Exposure	The site is relatively unshielded with exposure to winds which predominate from the NW/SW directions
Vegetation	None
Landform	Flat
Slope	Slight slopes
Fill	No fill evident
Rocks and Rock Outcrops	None
Erosion Potential	None known
Surface Water	30m+
Flood Potential	<1:100 AEP
Stormwater Run-on and Upslope Seepage	The dwelling and land application areas are expected to receive on minor amounts of stormwater run-on or groundwater recharge.
Groundwater	No groundwater was encountered throughout site reconnaissance and is likely to be several meters under the ground surface contained within rock.
Site Drainage and Subsurface Drainage	The site receives minimal run on and does not show signs of springs or other areas of ephemeral subsurface water retention. Given clay subsoils perched watertable may exist in some areas of the site
Recommended Buffer Distances	Given the significant land area, all buffer distances as stipulated in EPA (2013) are achievable.
Available Land Application Area	There is surplus space to land application area requirements (including reserves).

Onsite Wastewater System Design Proposed Upgrades Whitemark Wharf Shed



Onsite Wastewater System Design Proposed Upgrades Whitemark Wharf Shed



*Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed*

Appendix 4 Form 35B

CERTIFICATE OF THE RESPONSIBLE DESIGNER (PLUMBING WORK)		Section 80(1)(b)																						
To: <input type="text" value="QUOIN HOLDINGS"/>	Owner name <input type="text"/> <input type="text"/> <input type="text"/>	Form 35B																						
Designer details: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; vertical-align: top; padding: 2px;">Name:</td> <td style="width: 45%; vertical-align: top; padding: 2px;"><input type="text" value="S Nielsen"/></td> <td style="width: 25%; text-align: right; vertical-align: top; padding: 2px;">Category:</td> <td style="width: 25%; text-align: left; vertical-align: top; padding: 2px;"><input type="text" value="Hydraulic Domestic"/></td> </tr> <tr> <td>Business name:</td> <td colspan="3"><input type="text" value="Strata Geoscience and Environmental P/L"/></td> </tr> <tr> <td>Business address:</td> <td colspan="3"> <input type="text" value="17 Little Arthur Street"/> <input type="text" value="North Hobart"/> <input type="text" value="7000"/> </td> </tr> <tr> <td>Accreditation or Licence No:</td> <td><input type="text" value="GC6113K"/></td> <td>Email address:</td> <td><input type="text" value="sven@strataconsulting.com.au"/></td> </tr> </table>			Name:	<input type="text" value="S Nielsen"/>	Category:	<input type="text" value="Hydraulic Domestic"/>	Business name:	<input type="text" value="Strata Geoscience and Environmental P/L"/>			Business address:	<input type="text" value="17 Little Arthur Street"/> <input type="text" value="North Hobart"/> <input type="text" value="7000"/>			Accreditation or Licence No:	<input type="text" value="GC6113K"/>	Email address:	<input type="text" value="sven@strataconsulting.com.au"/>						
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Details of the proposed work: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; vertical-align: top; padding: 2px;">Owner/Applicant</td> <td style="width: 45%; vertical-align: top; padding: 2px;"><input type="text" value="QUOIN HOLDINGS"/></td> <td style="width: 25%; text-align: right; vertical-align: top; padding: 2px;">Designer's project reference No.</td> <td style="width: 25%; text-align: left; vertical-align: top; padding: 2px;"><input type="text"/></td> </tr> <tr> <td>Address:</td> <td colspan="3"> <input type="text" value="WHITEMARK WHARF"/> <input type="text" value="WHITEMARK"/> </td> </tr> <tr> <td>Type of work: (e.g. new installation/ alteration/ addition/ repair/ other)</td> <td colspan="3"><input type="text" value="New System"/></td> </tr> </table>			Owner/Applicant	<input type="text" value="QUOIN HOLDINGS"/>	Designer's project reference No.	<input type="text"/>	Address:	<input type="text" value="WHITEMARK WHARF"/> <input type="text" value="WHITEMARK"/>			Type of work: (e.g. new installation/ alteration/ addition/ repair/ other)	<input type="text" value="New System"/>												
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Description of the Design Work (Scope, limitations or exclusions): <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; vertical-align: top; padding: 2px;">Deemed-to-Satisfy: <input type="checkbox"/></td> <td style="width: 25%; vertical-align: top; padding: 2px;">Alternative Solution: <input type="checkbox"/></td> <td style="width: 50%; text-align: right; vertical-align: top; padding: 2px;">(tick <input checked="" type="checkbox"/> the appropriate box)</td> </tr> <tr> <td colspan="3" style="height: 100px; vertical-align: top; padding: 2px;">See Design and terms and conditions of appropriate report</td> </tr> </table>				Deemed-to-Satisfy: <input type="checkbox"/>	Alternative Solution: <input type="checkbox"/>	(tick <input checked="" type="checkbox"/> the appropriate box)	See Design and terms and conditions of appropriate report																	
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Design documents provided: <table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="height: 100px; vertical-align: top; padding: 2px;"> The following documents are provided with this Certificate – Document description: </td> </tr> <tr> <td style="width: 33%; vertical-align: top; padding: 2px;">Drawing numbers: Strata Report Prepared by: S Nielsen 02519</td> <td style="width: 33%; vertical-align: top; padding: 2px;"></td> <td style="width: 33%; text-align: right; vertical-align: top; padding: 2px;">Date: 22/3/17</td> </tr> <tr> <td>Schedules:</td> <td>Prepared by:</td> <td style="text-align: right;">Date:</td> </tr> <tr> <td>Specifications: Strata Report 02519</td> <td>Prepared by: S Nielsen</td> <td style="text-align: right;">Date: 22/3/17</td> </tr> <tr> <td>Computations: Strata Report 02519</td> <td>Prepared by: S Nielsen</td> <td style="text-align: right;">Date: 22/3/17</td> </tr> <tr> <td>Alternative solution proposals: Strata Report 02519</td> <td>Prepared by: S Nielsen</td> <td style="text-align: right;">Date: 22/3/17</td> </tr> <tr> <td>Test reports: Strata Report 02519</td> <td>Prepared by: S Nielsen</td> <td style="text-align: right;">Date: 22/3/17</td> </tr> </table>				The following documents are provided with this Certificate – Document description:			Drawing numbers: Strata Report Prepared by: S Nielsen 02519		Date: 22/3/17	Schedules:	Prepared by:	Date:	Specifications: Strata Report 02519	Prepared by: S Nielsen	Date: 22/3/17	Computations: Strata Report 02519	Prepared by: S Nielsen	Date: 22/3/17	Alternative solution proposals: Strata Report 02519	Prepared by: S Nielsen	Date: 22/3/17	Test reports: Strata Report 02519	Prepared by: S Nielsen	Date: 22/3/17
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*Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed*

Standards, codes or guidelines relied on in design process:	
AS1547-2012	

Any other relevant documentation:	
Terms and Conditions of relevant report	

Attribution as designer:	
---------------------------------	--

I Sven Nielsen..... being a licenced plumber practitioner-certifier or an accredited building practitioner am responsible for the design of that part of the plumbing work or plumbing installation as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the Building Act 2000 and sufficient detail for the plumber or builder to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance of this design with the requirements of the Plumbing Code of Australia (PCA) and is evidence of suitability under Clause A2.2 of the PCA.

Designer:

Signed:

Date:

22/3/17

Director of Building Control - date approved | April 2014:

Building Act 2000 - Approved Form No 35B

*Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed*



Appendix 4 Terms and Conditions

Scope of Work

These Terms and Conditions apply to any services provided to you ("the Client") by Strata Geoscience and Environmental Pty Ltd ("Strata"). By continuing to instruct Strata to act after receiving the Terms and Conditions or by using this report and its findings for design and/or permit application processes and not objecting to any of the Terms and Conditions the Client agrees to be bound by these Terms and Conditions, and any other terms and conditions supplied by Strata from time to time at Strata's sole and absolute discretion. The scope of the services provided to the Client by Strata is limited to the services and specified purpose agreed between Strata and the Client and set out in the correspondence to which this document is enclosed or annexed ("the Services"). Strata does not purport to advise beyond the Services.

Third Parties

The Services are supplied to the Client for the sole benefit of the Client and must not be relied upon by any person or entity other than the Client. Strata is not responsible or liable to any third party. All parties other than the Client are advised to seek their own advice before proceeding with any course of action.

Provision of Information

The Client is responsible for the provision of all legal, survey and other particulars concerning the site on which Strata is providing the Services, including particulars of existing structures and services and features for the site and for adjoining sites and structures. The Client is also responsible for the provision of specialised services not provided by Strata. If Strata obtains these particulars or specialised services on the instruction of the Client, Strata does so as agent of the Client and at the Client's expense. Strata is not obliged to confirm the accuracy and completeness of information supplied by the Client or any third party service provider. The Client is responsible for the accuracy and completeness of all particulars or services provided by the Client or obtained on the Client's behalf. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever suffered by the Client or any other person or entity resulting from the failure of the Client or third party to provide accurate and complete information. In the event additional information becomes available to the Client, the Client must inform Strata in writing of that information as soon as possible. Further advice will be provided at the Client's cost. Any report is prepared on the assumption that the instructions and information supplied to Strata has been provided in good faith and is all of the information relevant to the provision of the Services by Strata. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever if Strata has been supplied with insufficient, incorrect, incomplete, false or misleading information.

Integrity

While all reasonable care is taken reporting to the Client, Strata does not warrant that the information contained in any report is free from errors or omissions. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from errors in a report. Any report should be read in its entirety, inclusive of any summary and annexures. Strata does not accept any responsibility where part of any report is relied upon without reference to the full report.

Project Specific Criteria

Any report provided by Strata will be prepared on the basis of unique project development plans which apply only to the site that is being investigated. Reports provided by Strata do not apply to any project other than that originally specified by the Client to Strata. The Report must not be used or relied upon if any changes to the project are made. The Client should engage Strata to further advise on the effect of any change to the project. Further advice will be provided at the Client's cost. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever where any change to the project is made without obtaining a further written report from Strata. Changes to the project may include, but are not limited to, changes to the investigated site or neighbouring sites, for instance, variation of the location of proposed building envelopes/footprints, changes to building design which may impact upon sewage treatment plant system design, specification and performance.

Interpretation

Strata is not responsible for the interpretation of site data or report findings by other parties, including parties involved in the design and construction process. The Client must seek advice from Strata about the interpretation of the site data or report.

Design/Report Recommendations

Where sewage treatment plant and/or application system designs are provided by Strata, reasonable effort will be made to minimise environmental, public health and commercial risks associated with the disposal of effluent within site boundaries with respect to relevant Australian guidelines and industry best practise at the time of investigation. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from:

- (i) changes to either the project or site conditions that affect the onsite wastewater land application system's ability to safely dispose of modelled wastewater flows; or
- (ii) changes to original use of site infrastructure or changes from original modelled loadings as a result of change of use; or
- (iii) seepage, pollution or contamination or the cost of removing, nullifying or clearing up seepage, polluting or contaminating substances; or
- (iv) poor system performance where septic tanks have not been de-sludged at maximum intervals of 3 years or sewage treatment plants have not been serviced in compliance with the manufacturers recommendations; or
- (v) system /component failure of any recommended system/component; or

**Onsite Wastewater System Design
Proposed Upgrades Whitemark Wharf Shed**

- (vi) poor contractor construction/installation practice; or
- (vii) Inferior product/component selection by installing contractor ; or
- (viii) any treatment plant , treatment plant component or land application area breakdown of any kind; or
- (ix) failure of the client to commission both interim and final inspections by the designer throughout the system construction; or
- (x) the selection of inappropriate plants for irrigation areas or any increased cost associated with upkeep of recommended plants or their replacement; or
- (xi) damage to any infrastructure by seepage/effluent including but not limited to foundations, walls, driveways and pavements; or
- (xii) land instability, soil erosion or dispersion caused by seepage/effluent or the installation of sewage plant infrastructure; or
- (xiii) design changes requested by the Permit Authority;or
- (xiv) time delays associated with any of the above, or to strata or any of its representatives being able to mobilise to site for any reason.

Furthermore Strata does not guarantee septic trench and bed design life beyond 5 years from installation, given the influence various cleaning chemicals have on soil structural decline and premature trench failure in some soil types

Strata does not consider site contamination, unless the Client specifically instructs Strata to consider the site contamination in writing. If a request is made by the Client to consider site contamination, Strata will provide additional terms and conditions that will apply to the engagement.

Copyright and Use of Documents

Copyright in all drawings, reports, specifications, calculations and other documents provided by Strata or its employees in connection with the Services remain vested in Strata. The Client has a licence to use the documents for the purpose of completing the project. However, the Client must not otherwise use the documents, make copies of the documents or amend the documents unless express approval in writing is given in advance by Strata. The Client must not publish or allow to be published, in whole or in part, any document provided by Strata or the name or professional affiliations of Strata, without first obtaining the written consent of Strata as to the form and context in which it is to appear.

If, during the course of providing the Services, Strata develops, discovers or first reduces to practice a concept, product or process which is capable of being patented then such concept, product or process is and remains the property of Strata and:

- (i) the Client must not use, infringe or otherwise appropriate the same other than for the purpose of the project without first obtaining the written consent of Strata; and
- (ii) the Client is entitled to a royalty free licence to use the same during the life of the works comprising the project.

Digital Copies of Report

If any report is provided to the Client in an electronic copy except directly from Strata, the Client should verify the report contents with Strata to ensure they have not been altered in any way from the original provide by Strata.

Appendix D

Stormwater Overflow Trench Specification and Management Plan



strata
geoscience and environmental

Stormwater Overflow Trench Specification and Management Plan

Address: Tasports Shed, Whitemark

Proponent: Jo Youl

Proposed Development – Redevelopment

Stormwater runoff from impervious surfaces is calculated according to the rational method taken from *Australian Rainfall and Runoff (ARR)* for a 1:20 year 5 minute storm event:

$$Q = 0.278CIA$$

Where:

Q = Flow rate

C = Runoff coefficient (taken as 0.85 for a pitched impervious roof surface)

I = Intensity of rainfall (taken as 50mm/hour for Whitemark)

A = Catchment area – 224 m²

Therefore:

$$\begin{aligned} Q &= 0.278 \times 0.85 \times 50 \times 224 \\ &= 2.64 \text{ L/sec} \end{aligned}$$

Now:

$$V=Qt$$

Where:

V =Volume of runoff

t =time

$$\begin{aligned} \text{Volume of Runoff} &= \text{flow rate} \times \text{time} \\ &= 2.64 \text{ L/sec} \times 300 \text{ sec} \\ &= 793 \text{ L} \end{aligned}$$

Assuming a design loading rate of 25 l/m²/d

Therefore:

$$BA = V/DLR$$

Where BA = Trench Basal Area

V = Volume

DLR = Design Loading Rate

$$BA=793/25$$

$$BA= 31.72$$

Therefore a stormwater trench of basal area of 32 m² is required

The dwelling should have all gutters plumbed to a min 20KL tanks with the overflow plumbed to the trench. Please refer to Appendix 1&2 for detailed design and construction notes.



S Nielsen MEngSc CPSS-

Director

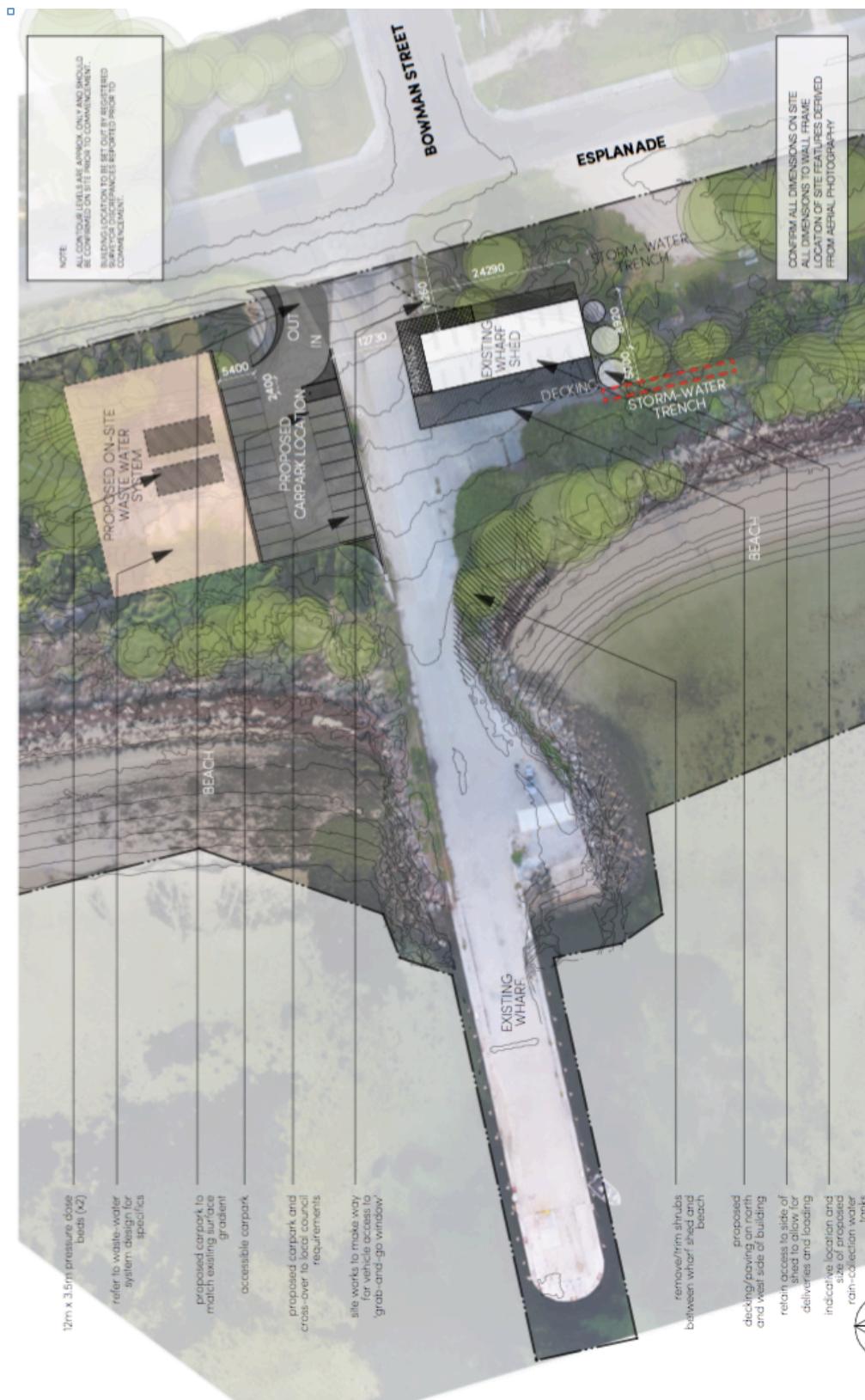
Strata Geoscience and Environmental Pty Ltd

P: 0413545358

E: sven@strataconsulting.com.au

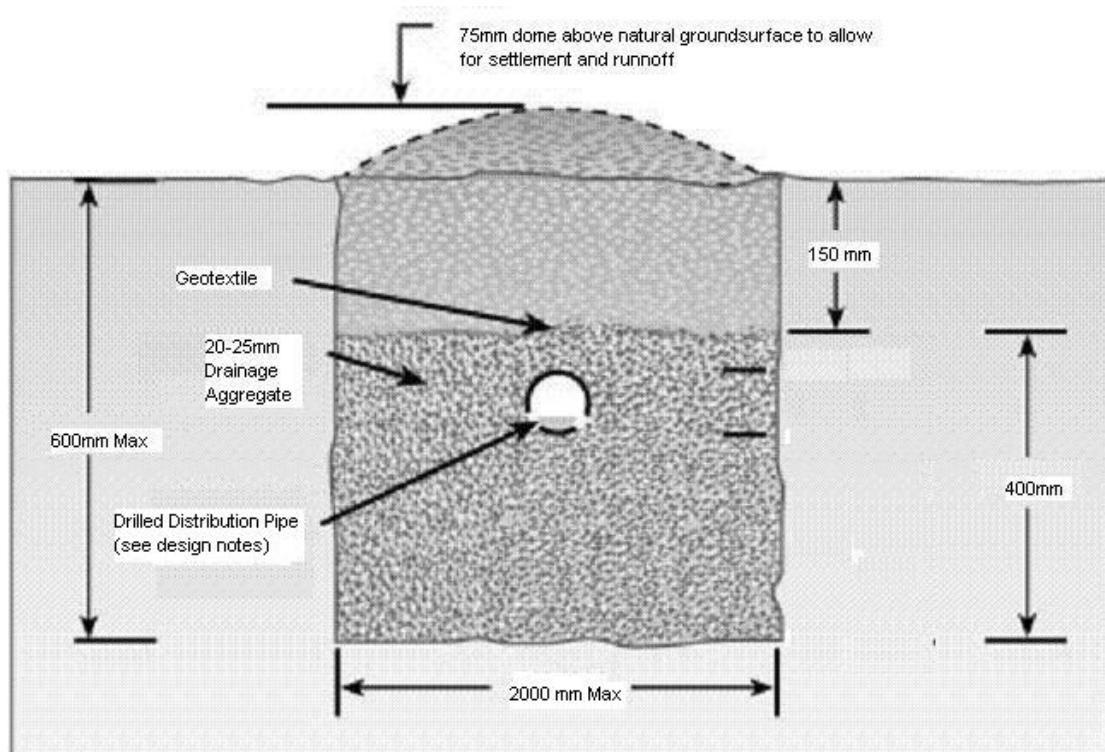
W: www.strataconsulting.com.au

Appendix 1 Site Plan



Appendix 2 Stormwater Overflow Trench Design and Construction Notes

1. Trench has the dimensions of 20 X 1.6 X 0.6 m.
2. There is one trench in total as located on site plan giving a total area of 32 m² (See Appendix 1)
3. The base of the trench **MUST** be excavated evenly and level. In clay soils smearing of walls and floors of bed **MUST** be avoided. Soils **MUST** be parallel raked and treated with gypsum at a rate Of 1Kg/m².
4. The lower 400mm is to be filled with 20-25mm aggregate.
5. 100mm PVC pipe slotted in the 8'o'clock and 4'o'clock positions to be placed on top of aggregate as shown. The distribution pipe **MUST** be level to ensure flow of effluent to all areas of the trench. Failure to ensure this may cause preferential overloading of the trench and the potential for bed overflow. A 90 degree elbow should be installed to act as a velocity reducer prior to the main trench pipe.
6. A further 50mm of aggregate can be added around/over the grid before overlaying with geo-textile to prevent soil from clogging gravels/lateral slots. For sandy soils the sides of the trench should also be lined.
7. Backfilling of the bed to 50 - 75mm above original ground surface level with endemic topsoil (if a sand/loam) or imported loam should proceed. Do not mechanically compact this layer.
8. An inspection outlet should be placed on each distribution pipe.
9. Slight adjustments to the location of Septic Tank/Flow Diverter/Trenches are permitted to achieve correct fall to levelled trench bases.
10. Vehicles and livestock should be excluded from trench area.



Appendix 3 Form 35b

CERTIFICATE OF THE RESPONSIBLE DESIGNER (PLUMBING WORK)		Section 80(1)(b)																																					
To:	Jo Youl	Owner name <input type="text"/> Address <input type="text"/> <input type="text"/> Suburb/postcode <input type="text"/>	Form 35B																																				
Designer details:																																							
Name:	S Nielsen	Category:	Hydraulic Domestic																																				
Business name:	Strata Geoscience and Environmental P/L	Phone No:	0413545358																																				
Business address:	17 Little Arthur Street North Hobart	Fax No:																																					
Accreditation or Licence No:	GC6113K	Email address:	sven@strataconsulting.com.au																																				
Details of the proposed work:																																							
Owner/Applicant	AS ABOVE	Designer's project reference No.																																					
Address:	TASPORTS SHED WHITEMARK																																						
Type of work:	<small>(e.g. new installation/ alteration/ addition/ repair/ other)</small> <input style="width: 100%;" type="text"/>																																						
NEW STORMWATER LAND APPLICATION SYSTEM																																							
Description of the Design Work (Scope, limitations or exclusions):																																							
Deemed-to-Satisfy: <input type="checkbox"/>	Alternative Solution: <input type="checkbox"/>	(tick <input checked="" type="checkbox"/> the appropriate box)																																					
See Design and terms and conditions of appropriate report																																							
201																																							
Design documents provided:																																							
<p>The following documents are provided with this Certificate –</p> <p><i>Document description:</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Drawing numbers:</td> <td style="width: 40%;">Strata Report Prepared by: S Nielsen</td> <td style="width: 30%;">Date: 19/4/17</td> </tr> <tr> <td>02351</td> <td></td> <td></td> </tr> <tr> <td>Schedules:</td> <td>Prepared by:</td> <td>Date:</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>Specifications: Strata Report 02351</td> <td>Prepared by: S Nielsen</td> <td>Date: 19/4/17</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>Computations: Strata Report 02351</td> <td>Prepared by: S Nielsen</td> <td>Date: 19/4/17</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>Alternative solution proposals: Strata Report 02351</td> <td>Prepared by: S Nielsen</td> <td>Date: 19/4/17</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>Test reports: Strata Report 02351</td> <td>Prepared by: S Nielsen</td> <td>Date: 19/4/17</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>				Drawing numbers:	Strata Report Prepared by: S Nielsen	Date: 19/4/17	02351			Schedules:	Prepared by:	Date:				Specifications: Strata Report 02351	Prepared by: S Nielsen	Date: 19/4/17				Computations: Strata Report 02351	Prepared by: S Nielsen	Date: 19/4/17				Alternative solution proposals: Strata Report 02351	Prepared by: S Nielsen	Date: 19/4/17				Test reports: Strata Report 02351	Prepared by: S Nielsen	Date: 19/4/17			
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Test reports: Strata Report 02351	Prepared by: S Nielsen	Date: 19/4/17																																					

Standards, codes or guidelines relied on in design process:	
AS1547-2012	

Any other relevant documentation:	
Terms and Conditions of relevant report	

Attribution as designer:	
---------------------------------	--

I Sven Nielsen..... being a licenced plumber practitioner-certifier or an accredited building practitioner am responsible for the design of that part of the plumbing work or plumbing installation as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the Building Act 2000 and sufficient detail for the plumber or builder to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance of this design with the requirements of the Plumbing Code of Australia (PCA) and is evidence of suitability under Clause A2.2 of the PCA.

Designer:	Signed:	Date:
		19/4/17

Director of Building Control - date approved | April 2014:

Building Act 2000 - Approved Form No 35B



Appendix 4 Terms and Conditions

Scope of Work

These Terms and Conditions apply to any services provided to you ("the Client") by Strata Geoscience and Environmental Pty Ltd ("Strata"). By continuing to instruct Strata to act after receiving the Terms and Conditions or by using this report and its findings for design and/or permit application processes and not objecting to any of the Terms and Conditions the Client agrees to be bound by these Terms and Conditions, and any other terms and conditions supplied by Strata from time to time at Strata's sole and absolute discretion. The scope of the services provided to the Client by Strata is limited to the services and specified purpose agreed between Strata and the Client and set out in the correspondence to which this document is enclosed or annexed ("the Services"). Strata does not purport to advise beyond the Services.

Third Parties

The Services are supplied to the Client for the sole benefit of the Client and must not be relied upon by any person or entity other than the Client. Strata is not responsible or liable to any third party. All parties other than the Client are advised to seek their own advice before proceeding with any course of action.

Provision of Information

The Client is responsible for the provision of all legal, survey and other particulars concerning the site on which Strata is providing the Services, including particulars of existing structures and services and features for the site and for adjoining sites and structures. The Client is also responsible for the provision of specialised services not provided by Strata. If Strata obtains these particulars or specialised services on the instruction of the Client, Strata does so as agent of the Client and at the Client's expense. Strata is not obliged to confirm the accuracy and completeness of information supplied by the Client or any third party service provider. The Client is responsible for the accuracy and completeness of all particulars or services provided by the Client or obtained on the Client's behalf. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever suffered by the Client or any other person or entity resulting from the failure of the Client or third party to provide accurate and complete information. In the event additional information becomes available to the Client, the Client must inform Strata in writing of that information as soon as possible. Further advice will be provided at the Client's cost. Any report is prepared on the assumption that the instructions and information supplied to Strata has been provided in good faith and is all of the information relevant to the provision of the Services by Strata. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever if Strata has been supplied with insufficient, incorrect, incomplete, false or misleading information.

Integrity

Any report provided by Strata presents the findings of the site assessment. While all reasonable care is taken when conducting site investigations and reporting to the Client, Strata does not warrant that the information contained in any report is free from errors or omissions. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from errors in a report. Any report should be read in its entirety, inclusive of any summary and annexures. Strata does not accept any responsibility where part of any report is relied upon without reference to the full report.

Project Specific Criteria

Any report provided by Strata will be prepared on the basis of unique project development plans which apply only to the site that is being investigated. Reports provided by Strata do not apply to any project other than that originally specified by the Client to Strata. The Report must not be used or relied upon if any changes to the project are made. The Client should engage Strata to further advise on the effect of any change to the project. Further advice will be provided at the Client's cost. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever where any change to the project is made without obtaining a further written report from Strata. Changes to the project may include, but are not limited to, changes to the investigated site or neighbouring sites, for instance, variation of the location of proposed building envelopes/footprints, changes to building design which may impact upon building settlement or slope stability, or changes to earthworks, including removal (site cutting) or deposition of sediments or rock from the site.

Classification to AS2870-2011

It must be emphasised that the site classification to AS2870-2011 and recommendations referred to in this report are based solely on the observed soil profile at the time of the investigation for this report and account has been taken of Clause 2.1.1 of AS2870 - 2011. Other abnormal moisture conditions as defined in AS2870 – 2011 Clause 1.3.3 (a) (b) (c) and (d) may need to be considered in the design of the structure. Without designing for the possibility of all abnormal moisture conditions as defined in Clause 1.3.3, distresses will occur and may result in non "acceptable probabilities of serviceability and safety of the building during its design life", as defined in AS2870 - 2011, Clause 1.3.1. Furthermore the classification is preliminary in nature and needs verification at the founding surface inspection phase . The classification may be changed at this time based upon the nature of the founding surface over the entire footprint of the project area. Any costs associated with a change in the site classification are to be incurred by the client. Furthermore any costs associated with delayed works associated with a founding surface inspection or a change in classification are to be borne by the client. Where founding surface inspections are not commissioned the classifications contained within this report are void. Classification is based upon a range of expected ground surface movement as indicated in AS2870-2011. Where the range of movement exceeds the stipulations for the nominated classification Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever suffered by the Client or any other person.

Slope Instability Risks

Where comment, modelling or treatment options are suggested to limit the risk of slope instability Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from actual slope instability or mass movement over the site at any point over the design life of any structures or neighbouring structures.

Subsurface Variations with Time

Any report provided by Strata is based upon subsurface conditions encountered at the time of the investigation. Conditions can and do change significantly and unexpectedly over a short period of time. For example groundwater levels may fluctuate over time, affecting latent soil bearing capacity and ex-situ/insitu fill sediments may be placed/removed from the site. Changes to the subsurface conditions that were encountered at the time of the investigation void all recommendations made by Strata in any report. Strata is not

liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from any change to the subsurface conditions that were encountered at the time of the investigation. In the event of a delay in the commencement of a project or if additional information becomes available to the Client about a change in conditions becomes available to the Client, the Client should engage Strata to make a further investigation to ensure that the conditions initially encountered still exist. Further advice will be provided at the Client's cost. Without limiting the generality of the above statement, Strata does not accept liability where any report is relied upon after three months from the date of the report, (unless otherwise provided in the report or required by the Australian Standard which the report purports to comply with), or the date when the Client becomes aware of any change in condition. Any report should be reviewed regularly to ensure that it continues to be accurate and further advice requested from Strata where applicable.

Interpretation

Site investigation identifies subsurface conditions only at the discrete points of geotechnical drilling, and at the time of drilling. All data received from the geotechnical drilling is interpreted to report to the Client about overall site conditions as well as their anticipated impact upon the specific project. Actual site conditions may vary from those inferred to exist as it is virtually impossible to provide a definitive subsurface profile which accounts for all the possible variability inherent in earth materials. Soil depths and composition can vary due to natural and anthropogenic processes. This is particularly pertinent to some weathered sedimentary geologies or colluvial/alluvial clast deposits which may show significant variability in depth to refusal over a development area. Furthermore where rocky profiles are encountered no comment is made about the potential size of liberated rocks from bulk earthworks or vertical boring. Where large rocks are liberated this may impact upon the ability to cost effectively build on the site and further advice should be sought from Strata. Such profiles may also significantly increase earthworks costs and/or materials cost in foundations. Rock incongruities such as joints, dips or faults may also result in subsurface variability. Variability may lead to differences between the design depth of bored/driven piers compared with the actual depth of individual piers constructed onsite. It may also affect the founding depth of conventional strip, pier and beam or slab footings, which may result in increased costs associated with excavation (particularly of rock) or materials costs of foundations. Founding surface inspections should be commissioned by the Client prior to foundation construction to verify the results of initial site characterisation and failure to insure this will void the classifications and recommendations contained within this report. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from any variation from the site conditions inferred to exist.

Strata is not responsible for the interpretation of site data or report findings by other parties, including parties involved in the design and construction process. The Client must seek advice from Strata about the interpretation of the site data or report.

Report Recommendations

Any report recommendations provided by Strata are only preliminary. A report is based upon the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until earthworks and/or foundation construction is almost complete. Where variations in conditions are encountered, Strata should be engaged to provide further advice. Further advice will be provided at the Client's cost. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever if the results of selective point sampling are not indicative of actual conditions throughout an area or if the Client becomes aware of variations in conditions and does not engage Strata for further advice.

Geo-environmental Considerations

Where onsite wastewater site investigation and land application system designs are provided by Strata, reasonable effort will be made to minimise environmental and public health risks associated with the disposal of effluent within site boundaries with respect to relevant Australian guidelines and industry best practise at the time of investigation. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from:

- (i) changes to either the project or site conditions that affect the onsite wastewater land application system's ability to safely dispose of modelled wastewater flows; or
- (ii) seepage, pollution or contamination or the cost of removing, nullifying or clearing up seepage, polluting or contaminating substances; or
- (iii) poor system performance where septic tanks have not been de-sludged at maximum intervals of 3 years or AWTS systems have not been serviced in compliance with the manufacturers recommendations; or
- (iv) failure of the client to commission both interim and final inspections by the designer throughout the system construction; or
- (v) the selection of inappropriate plants for irrigation areas; or
- (vi) damage to any infrastructure including but not limited to foundations, walls, driveways and pavements; or
- (vii) land instability, soil erosion or dispersion; or
- (viii) design changes requested by the Permit Authority.

Furthermore Strata does not guarantee septic trench and bed design life beyond 5 years from installation, given the influence various household chemicals have on soil structural decline and premature trench failure in some soil types

Strata does not consider site contamination, unless the Client specifically instructs Strata to consider the site contamination in writing. If a request is made by the Client to consider site contamination, Strata will provide additional terms and conditions that will apply to the engagement.

Copyright and Use of Documents

Copyright in all drawings, reports, specifications, calculations and other documents provided by Strata or its employees in connection with the Services remain vested in Strata. The Client has a licence to use the documents for the purpose of completing the project. However, the Client must not otherwise use the documents, make copies of the documents or amend the documents unless express approval in writing is given in advance by Strata. The Client must not publish or allow to be published, in whole or in part, any document provided by Strata or the name or professional affiliations of Strata, without first obtaining the written consent of Strata as to the form and context in which it is to appear.

If, during the course of providing the Services, Strata develops, discovers or first reduces to practice a concept, product or process which is capable of being patented then such concept, product or process is and remains the property of Strata and:

- (i) the Client must not use, infringe or otherwise appropriate the same other than for the purpose of the project without first obtaining the written consent of Strata; and
- (ii) the Client is entitled to a royalty free licence to use the same during the life of the works comprising the project.

Digital Copies of Report

If any report is provided to the Client in an electronic copy except directly from Strata, the Client should verify the report contents with Strata to ensure they have not been altered or varied from the report provided.

Commercial Project Delivery ABN 51 921 459 008

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Document Status

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Reviewer: Jo Youl

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