Attachment G – Amended Weed Management Plan prepared by Environmental Projects

Weed Management Plan

MLGE

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1. INTRODUCTION

1.1 Background

A hospitality development is proposed for the Mount Lofty Golf Estate (MLGE).

The proposed development is for tourist accommodation and golf course and associated club facilities (ancillary bar, gymnasium and function rooms), together with landscaping, subdivision, tree and native vegetation removal. The proposed development is summarised as follows:

- Construction of a 3-5 level tourist accommodation building comprising 56 units, 15 two bedroom serviced apartments, 15 three bedroom serviced apartments and 2 penthouse serviced apartments. Together with, back of house, plant storage and maintenance areas, function room, restaurant and external terrace, sports bar, gallery and cafe and wellness centre.
- Adaptive reuse of the Local Heritage Perfumery building as a retail, cafe and multipurpose function space.
- Golf course facilities building - 2-5 level building comprising function facilities, cart storage and clubhouse, pro-shop, administration areas, gym and change rooms.
- Retention of the 18-hole golf course with improvements.
- Car Parking, access and waste management including a total of 257 car parking spaces. Including:
    - 200 formalised car parking spaces and a porte cochère (set-down/pick-up) facility at the tourist accommodation and golf club facilities building;
    - 220 spaces adjacent to the Perfumery Building accessible from Old Carey Gully Road; and
    - 337 spaces for staff only adjacent to the circulation road connecting from Old Carey Gully Road with further informal parking opportunities within the site
- Subdivision of the land (1 into 3) allotments to formalise the areas for tourist accommodation, golf course facilities building and balance of the site for leasing purposes.
- Stormwater detention basin, creek and lake restoration activities including planting natives in the beds, erosion control works and creek crossings.
- Construction of entry wall and new entry signage at the existing Golflinks Road entry.
- New dedicated pedestrian trail adjacent Golflinks Road.

A whole of site plan is provided in the Mount Lofty Golf Estate Site Masterplan.

1.2 Objectives

The objectives of this weed management plan are to provide site maintenance personnel with appropriate management actions which seek to improve native vegetation stands at the site by:

- removing/reducing existing weed infestations
- minimising the spread of weeds
- limiting the introduction of new weeds by nearby MLGE activities as much as practicable.

2. WEEDS IMPACTS AND MANAGEMENT

2.1 Potential impact of weeds

Invasive species, such as weeds, present the biggest threat to biodiversity after direct habitat loss (DotE 2014).

Weeds may impact on the biodiversity values by:

- outcompeting native species for nutrients water, space, and sunlight
- reducing the natural diversity by smothering native plants or preventing them from growing back
- reducing habitat for native animals
- altering fire regimes
- altering vegetation or community structure.

The major vectors for the introduction and spread of weeds in bushland reserves includes:

- edge effects from roads/cleared areas and nearby activities such as golf course maintenance and soil importation
- escape of garden plants and grasses
- human and animal transport (particularly through unauthorised tracks)
- asexual reproduction following mechanical slashing.

2.2 Site overview

Succession Ecology undertook weed identification survey across the proposed development portion of MLGE in February 2024 and identified a total of 10 weed species spread across five identified areas of interest (discussed further in Section 2.3.1):

- Rubus fruticosus aggregata (Blackberry)
- Cytisus scoparius (English Broom)
- Genista monspessulana (Montpellier Broom)
- Hedera helix ssp. helix (English Ivy)
- Ulex europaeus (Gorse)
- Pittosporum undulatum (Sweet Pittosporum)
- Limonium sp. (Sea lavender species)
- Vinca major (Periwinkle)

- Watsonia bulbifera (Watsonia)
- previous indications of dense Allium triquetrum (Three-cornered Garlic).

The establishment of weeds adjacent to or within bushland threaten the regeneration of bushland. Therefore, appropriate management of activities and operations must be implemented to manage and mitigate potential direct and indirect impacts of weeds on valuable bushland.

2.3 Weed management

2.3.1 Management areas

In undertaking the survey, Succession Ecology 2024a identified five distinct areas of vegetation where weed infestation would need to be managed. The designated areas across the site are shown in Figure 2 in **Appendix A**.

The most-dominant weeds identified in each area were:

- Area 1:
  - High level of Rubus fruticosus aggregata (Blackberry)
- Area 2:
  - Cytisus scoparius (English Broom)
  - Genista monspessulana (Montpellier Broom)
  - Hedera helix ssp. helix (English Ivy)
  - Ulex europaeus (Gorse)
  - Rubus fruticosus aggregata (blackberry)
- Area 3:
  - Cytisus scoparius (English Broom)
  - Genista monspessulana (Montpellier Broom)
  - Hedera helix ssp. helix (English Ivy)
  - Pittosporum undulatum (Sweet Pittosporum)
  - Limonium sp. (Sea lavender species)
- Area 4:
  - Cytisus scoparius (English Broom)
  - Genista monspessulana (Montpellier Broom)
  - Hedera helix ssp. helix (English Ivy)

- Ulex europaeus (Gorse)
- Vinca major (Periwinkle)

- Area 5:
  - High level of Rubus fruticosus (blackberry),
  - Watsonia bulbifera (Watsonia)
  - previous indications of dense Allium triquetrum (Three-cornered Garlic).

2.3.2 Management objectives

Management actions will seek to remove/reduce existing weed infestations, minimise the spread of weeds, and limit the introduction of new weeds as much as practicable.

Particular focus will be given to removing all occurrences of prominent weeds observed in the February 2024 survey.

Key objectives are:

- halt unchecked spread of priority and high priority invasive weed
- improve bushland condition and resilience of all remnant vegetation.

Management techniques will be undertaken during optimal control periods and using appropriate methods for each weed suite.

Effective management will ensure that weed control does not negatively impact flora. This can be achieved by revegetating weed infested sites with suitable native plants.

A priority for weed management in the survey area should be managing weeds along the external fence lines and firebreaks of all areas to provide some barrier of entry to weeds.

The priority weed control should be:

- treatment of patches of the main invasive weed species in priority areas
- treatment of other important weed species in priority areas
- treatment of particularly important weeds species across the bushland recovery areas.

2.3.3 Consideration of threatened ecological species

Succession Ecology prepared a Native Vegetation Clearance report for the site in April 2024 that included a threatened species assessment.

There were no threatened ecological communities identified onsite.

The desktop search identified a total of 38 threatened fauna species within the search area. Seven species listed under the EPBC Act 1999 as ‘known, or have habitat known to occur’ within the search area, and 31 further species listed as threatened under the NPW Act 1972. While there were several species that were assessed as ‘likely’ to

occur onsite, the *Isoodon obesulus obesulus* (Southern Brown Bandicoot) is important in the context of weed management.

As well as occupying a range of native vegetation communities the presence of dense exotic or native vegetation has been found as a common attribute of corridors used by bandicoots. Where native habitat has been degraded or diminished, exotic vegetation such as Blackberry (*Rubus fruticosus*) provides an alternative and important habitat for bandicoots. They use the thickets formed by the blackberries for nesting, moving between habitats and as protection from predators. While Succession Ecology 2024a acknowledges that blackberries are a Weed of National Significance and a Declared Plant in South Australia, completely removing blackberries from the site all at once could have an adverse impact on bandicoots by exposing them to a greater risk from predators. Succession Ecology 2024a suggests the blackberries on site should be managed appropriately to minimise impact on potential bandicoot habitat, while also meeting the Declared Plant legislative requirements.

In relation to managing weeds, Succession Ecology's EPBC self assessment report prepared in April 2024 suggests that patches in the development site where blackberries are identified for removal 'must be undertaken in a manner that is not detrimental to Southern Brown Bandicoot (*Isoodon obesulus obesulus*)'. Succession Ecology 2024b suggests clearing of blackberries should involve a staged method for weed removal followed by revegetation in the areas which have recently undergone weed removal. This would allow for blackberries to be controlled while also establishing native vegetation, ensuring there is habitat present at all times for the bandicoot. In areas where natural regeneration is unlikely, revegetation to restore native vegetation can be undertaken. Given the rarity of bandicoots it is also appropriate to retain some blackberry as habitat where it is not impacting on native vegetation condition.

3. RECOMMENDED MANAGEMENT

3.1 Key considerations

Key considerations for assessing impacts and risks to bushland, should be guided by the following principles:

Principle 1 – Prioritise bushland of high conservation value

It is recommended that management of operational activities should assess impacts and risks to bushland and prioritise bushland areas that are both of highest conservation value and in best vegetation condition.

Principal 2 – Focus on bushland that is less exposed to external factors

Areas of limited access will be more easily managed and less open to disturbance from external activities. Hence, it is considered that these bushland areas should carry some priority for management.

Principle 3 – Manage bushland areas in its entirety, and delineate using a form of barrier

Areas should be managed as entire, discrete bushland areas, with boundaries defined by external fences or other buffer to minimise impacts of adjacent threatening processes, such as encroachment of weeds spread by seeds.

Principle 4 – Manage weeds along external boundaries as a priority

A priority for weed management should be to manage weeds along external boundaries of the identified areas, which will provide some barrier to weeds entering bushland areas.

Priority of weed control should be to control weeds along the outside and inside of boundaries with other activities.

Specific actions for weed management are detailed in **Appendix B.**

4. CONTINUOUS REVIEW AND IMPROVEMENT

This plan and the content contained within should undergo continuous review and improvement with:

- changes of operations at MLGE
- as new or changed threatening processes are identified
- updates to legislation.

5. REFERENCES

PIRSA Weed control handbook, WEB_8867_PIRSA_Weed_Control_Handbook_2018.pdf

Weeds Australia, Weed profiles - Weeds Australia

Succession Ecology 2024a, *Native Vegetation Clearance, Mount Lofty Golf Estate Data Report*, Succession Ecology report ES0324-03 prepared for Trice, dated 4 Apil 2024

Succession Ecology 2024b, *Mount Lofty Golf Estate: EPBC Self-assessment*, Succession Ecology report ES0324-05, prepared for Trice, dated 2 April 2024.

6. LIMITATIONS

Scope of Services

This environmental site assessment report ("the report") has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the client and Environmental Projects ("scope of services"). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

Reliance on Data

In preparing the report, Environmental Projects has relied upon data, surveys, analyses, designs and plans as well as any other information provided by the client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise stated in the report, Environmental Projects has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Environmental Projects will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Environmental Projects.

Environmental Conclusions

In accordance with the scope of services, Environmental Projects has relied upon the data and conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

On all sites, varying degrees of non-uniformity of the vertical and horizontal soil or groundwater conditions are encountered. Hence no monitoring, common testing or sampling technique can eliminate the possibility that monitoring or testing results/samples are not totally representative of soil and/or groundwater conditions encountered. The conclusions are based upon the data and the environmental field monitoring and/or testing and are therefore merely indicative of the environmental condition of the site at the time of preparing the report, including the presence or otherwise of contaminants or emissions.

Also, it should be recognised that site conditions, including the extent and concentration of contaminants, can change with time.

Within the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

Report for Benefit of Client

The report has been prepared for the benefit of the client and no other party. Environmental Projects assumes no responsibility and will not be liable to any other person or organisation or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of Environmental Projects or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the

report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

Other Limitations

Environmental Projects will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

Appendix A

Figures

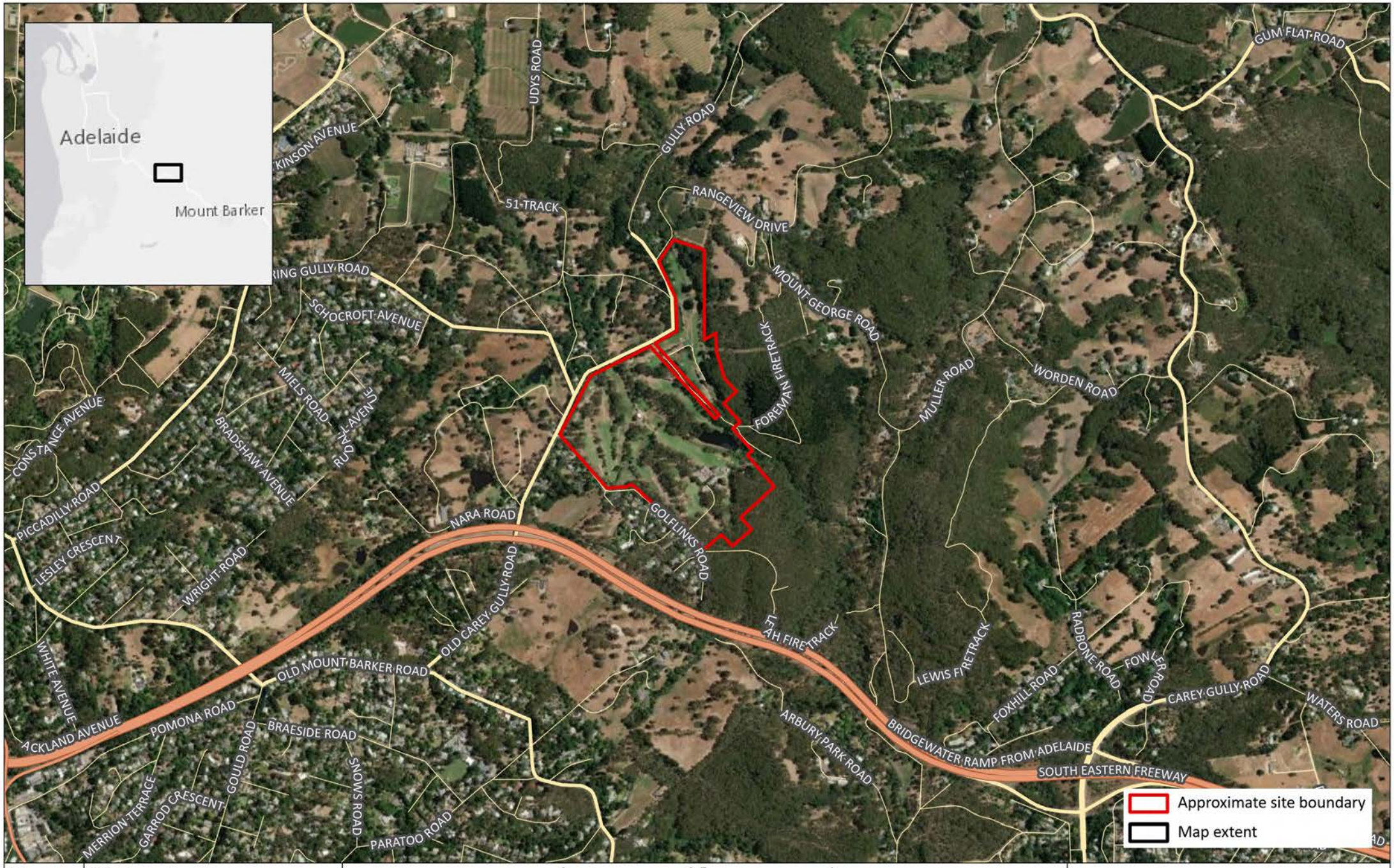

Figure 1 | **Site Location Plan**

Mount Lofty Golf Estate,
Stirling SA 5152

Drawn: Chathuri Nisansala
Date: 13/03/2024

Rev: A

Job number: 24005.01

0 0.5 1 km

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Figure 2	Weed Management Areas
Mount Lofty Golf Estate, Stirling SA 5152	
Drawn: Chathuri Nisansala Date: 29/05/2024	Rev: A
Job number: 24005.01	

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Appendix B

Weed Management Plan

Mount Lofty Golf Estate - introduced vegetation treatment				Chemical treatment- Foliar spray	Mechanical	Timing/season
Area 1						
Rubus fruiticossus	Backberry	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 1L + 3g/100L	Post slashing	Summer/early Autumn
Area 2						
Cytisus scoparious	English Broom	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 1L + 3g/100L	Tree pop/manual	Late Spring
Genista monspessulana	Montpellier Broom	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 200ml + 10g/100L	Tree pop/manual	Late Spring
Hendra helix	English Ivy			Glyphosate 360g/L 10ml/L	Manually remove from tree canopies	Summer/Spring/Autumn
Ulex europaeus	Gorse	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 1L + 3g/100L	Initial slash follow up foliar spray	Summer/early Autumn
Rubus fruiticossus	Blackberry	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 1L + 3g/100L	Post Slashing	Summer/early Autumn
Area 3						
Cytisus scoparious	English Broom	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 200ml + 10g/100L	Tree pop/manual	Late Spring
Genista monspessulana	Montpellier Broom	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 200ml + 10g/100L	Tree pop/manual	Late Spring
Hendra helix	English Ivy			Glyphosate 360g/L 10ml/L	Manually remove from tree canopies	Summer/Spring/Autumn
Pittosporum undulatum	Sweet pittosporum		SA Declared	450g/L Glyphosate Cut/paint stump		Year round
Limonium	Sea Lavender			Metsulfuron-methyl 600 g/kg 15g/100 L		Late Spring/Early Summer
Area 4						
Cytisus scoparious	English Broom	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 1L + 3g/100L		Late Spring
Genista monspessulana	Montpellier Broom	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 200ml + 10g/100L	Tree pop/manual	Late Spring
Hendra helix	English Ivy			Glyphosate 360g/L 10ml/L	Manually remove from tree canopies	
Ulex europaeus	Gorse	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 1L + 3g/100L	Initial slash follow up foliar spray	Summer/early Autumn
Vinca major	Periwinkle					
Area 5						
Rubus fruiticossus	Backberry	WoNS	SA Declared	glyphosate 360g/L + metsulfuron-methyl 600g/kg 1L + 3g/100L	Post Slashing	Summer/early Autumn
Watsonia bulbifera	Watsonia		SA Declared	glyphosate 450g/L + metsulfuron-methyl 600g/kg 1L + 10g/100L	Post Slashing	Spring
Allium triquetrum	Three Corner garlic		SA Declared	metsulfuron-methyl 600g/kg 0.5g/10L		Late winter/Spring

Alternative herbicides and application methods are available through the reference tab; however the least toxic and most effective chemicals have been promoted here. Application/treatment must be carried out AFTER thoroughly reading and adhering to herbicide Label and Safety Data Sheets. Work must be undertaken by licenced bushcarer/contractor modeling best environmental practices. Favourable weather and 'off-target' indigenous/native damage must be considered.

PIRSA Weed control handbook
WEB_8867_PIRSA_Weed_Control_Handbook_2018.pdf
Weeds Australia
Weed profiles - Weeds Australia

Attachment H – Operational Plan of Management prepared by 1834 Hotels

Operational Plan of Management (OPOM)

Mount Lofty Golf Estate – Prepared by 1834 Hotels

Date – 19th November 2024

Introduction of 1834 Hotels

1834 Hotels, headquartered in Adelaide, is a prominent Australian hotel management company that oversees a diverse portfolio of over 40 hotels, resorts, and serviced apartments across the country. Known for its operational excellence, innovative approach, and strategic growth, 1834 Hotels specialises in providing tailored management solutions for both new developments and established properties. By focusing on key markets and implementing best-in-class practices, 1834 Hotels consistently delivers high-quality services that align with its reputation for elevating guest experiences and optimising asset performance. With a strong presence in the Australian hospitality industry, 1834 Hotels is committed to setting benchmarks in operational standards, guest satisfaction, and sustainable growth.

Operational Plan of Management (OPOM)

This Operational Plan of Management (OPOM) has been prepared by 1834 Hotels, to guide the future hotel operations at the Mount Lofty Golf Estate. It outlines the operational and management considerations that have influenced the design of the asset and the framework within which it will function.

The OPOM also serves as a response to feedback provided by the Office for Design and Architecture SA (ODASA) regarding the Mount Lofty Golf Estate Major Development. In preparing this OPOM, 1834 Hotels has conducted thorough reviews of the architectural plans, attended meetings with architects, designers, and ownership teams, and offered input to ensure that the design is both operationally efficient and strategically aligned with an elevated guest experience. This collaborative approach will contribute to achieving a highly functional, upscale, and distinctive hospitality destination.

Operational Considerations in Design

Hours of Operation for Hotel and F&B Facilities

The hotel is designed to operate continuously, providing guests with 24-hour access to a full suite of services. Reception and concierge staff will be on duty throughout the night to accommodate late arrivals, respond to guest inquiries, and handle any emergency needs. Food and Beverage (F&B) outlets will be open daily from 6:00 AM to 10:00 PM, although final hours are subject to council approval. During the hotel's night operations, strict noise control measures will be in place to maintain a tranquil environment, ensuring minimal disturbance to both guests and surrounding residents.

All loading, servicing, and back-of-house (BOH) activities will be carefully scheduled during off-peak hours to minimise guest and resident disruption. By managing these operations during quieter periods, the hotel aims to reduce noise and maintain a smooth guest experience without impacting the surrounding community.

Management Objectives and Responsibilities

1834 Hotels will undertake the comprehensive management of the Mount Lofty Golf Estate hotel, with a focus on upholding the property's upper-upscale standards. This includes responsibility for key operational areas:

Financial Management and Administration: Managing all financial processes, including budgeting, forecasting, and reporting, to ensure the hotel's fiscal health.

Guest Experience: Ensuring that each guest's stay meets the high expectations associated with a luxury golf resort, with particular attention to personalisation and service quality.

Operations Management: Overseeing day-to-day operational flow to maximise efficiency and maintain service consistency.

Revenue and Distribution: Implementing pricing and distribution strategies that optimise profitability and occupancy.

Food and Beverage Management: Managing all dining operations to deliver memorable culinary experiences across the hotel's F&B outlets.

People, WHS, and Compliance: Prioritising workplace health and safety (WHS) while maintaining compliance with all relevant regulations.

Property Operations and Maintenance: Ensuring the property is meticulously maintained to preserve its aesthetic and functional appeal.

Sales and Marketing: Crafting marketing campaigns and sales initiatives to build the property's reputation and market presence.

Information Technology: Managing IT systems to support both guest and operational requirements.

Legislative Compliance: Ensuring all aspects of the hotel's operations adhere to legal standards, from health and safety to environmental impact.

By setting high standards in each of these areas, 1834 Hotels aims to foster an exceptional guest experience, prioritize safety and security, and ensure the property's ongoing operational success.

Guest Arrival and Segregation Across the Precinct

Guest arrival at the hotel will be facilitated exclusively through an entry point on Golf Links Road. From there, arrivals will be managed through a porte-cochere that leads directly to a valet parking service. Signage will clearly distinguish guest pathways from BOH routes, directing guests to the valet or hotel parking entry and guiding staff and service vehicles toward a separate service entry. This design ensures that guest arrivals are seamless and that guest and staff traffic flows remain separated for an optimal experience.

The hotel's layout includes designated entry points for guests, staff, and deliveries. The facilities building features a staff-only entry for secure access to BOH areas. Deliveries are also directed to this building, ensuring that service activities occur away from guest areas. Guests arriving by foot can follow separated pedestrian paths leading directly to the lobby, and dedicated valet and drop-off zones near the entrance further simplify arrivals. Service areas are strategically positioned to avoid any overlap with guest areas, ensuring privacy and smooth operations on both sides of the asset.

Drop-Off and Valet Parking

The hotel's car valet parking service will operate daily from 6:00 AM to 10:00 PM, ensuring that guest vehicles are moved promptly to an underground parking facility upon arrival. During peak times, additional valet staff will be available to maintain efficient vehicle flow, reduce wait times, and avoid congestion. The valet and drop-off area is positioned close to the hotel's main entrance, minimising walking distances for guests and creating a welcoming arrival experience. To enhance operational efficiency, valet parking will be segregated from general parking, with dedicated valet spaces to accommodate peak demand.

Regarding guest arrivals via coach, the coach/bus will also use the drop off area for guest arrival and pick up, as there is ample clearance in height and road surfaces. Once guests are dropped off, it is designated that the coach/bus will then park near the perfumery to keep the bus outside of the view of hotel and restaurant guests.

Guest Transportation Within the Buildings

The hotel design provides seamless guest access from both the valet/drop-off area and the guest parking, leading directly to the lobby or guest elevators. All guest elevators and entry doors are equipped with keycard access, enhancing security and privacy. A dedicated pedestrian concourse allows guests to move comfortably between key areas, including the hotel, gallery, café, clubhouse, and function rooms. Each of these areas is accessible via dedicated guest elevators. Public elevators are distributed across floors to improve accessibility, while staff and service elevators are strategically separated to maintain a clear distinction between guest and staff areas.

In addition, dedicated pedestrian trails & guest "golf cart" valet services connect the hotel with broader estate areas, such as the perfumery, golf tee blocks etc, ensuring guests can easily navigate the property.

If guests were coming to the Mt Lofy Golf Estate, specifically for a function, café offering or other activation at the Perfumery, guests would access from Old Carey Gully Road with parking next to the perfumery building.

Staff Types and Their Segregation Across Various Functions

The hotel will employ a wide range of staff to support its operations, including administration, housekeeping, F&B, concierge, and maintenance personnel. Within the hotel building, administration and housekeeping teams will have dedicated offices, along with access to staff-only service lifts that keep BOH activities discreet. Staff rooms, break areas, and facilities are strategically positioned away from public spaces to ensure that staff functions do not overlap with guest activities.

The facilities building houses essential BOH functions, including goods receiving and security offices near the loading bay, ensuring that delivery and service functions are streamlined and contained. Engineering and maintenance teams, as well as kitchen staff, will operate from basement storage areas, maintaining a minimal presence in guest-facing areas. Separate BOH corridors and service elevators allow housekeeping, food service, and maintenance staff to complete their duties without interaction with guests, preserving the hotel's upscale atmosphere.

Kitchen Operations and Servicing

The main kitchen will serve as the primary production hub for the hotel's dining outlets, supporting each outlet's daily requirements. Outlets will place orders with the kitchen at the end of each service, and orders will be prepared overnight to ensure availability the following day. Items will be transported using Queen Mary trolleys, facilitating efficient delivery to each outlet.

- The daily operations of the sports bar outlet will be serviced from the main kitchen on the basement / lower ground level
- The daily operations of the Gallery / Café outlet will be serving freshly made sandwiches, croissants & bakery items, stored in display cabinets, prepared and delivered the night before from the main kitchen.
- The operations of the café / function outlet at the Perfumery will also have freshly made sandwiches, croissants and bakery items prepared and delivered via service carts ahead of functions.
- The operations of the function and pre function rooms will be serviced from the kitchen on Level 1.
- The daily operations of the Restaurant on Level 1 will be serviced from the kitchen located on Level 2, with the use of dumb waiter elevator system to transport meals

The kitchen is designed to support 24-hour room service as well as the daily preparation needs for dining outlets and events. Food items will be transported via designated staff routes to minimize guest visibility, with temperature-controlled storage and specially equipped carts (e.g., golf carts) used for events held outside the main hotel building.

Other BOH Operations and Servicing

Housekeeping, laundry, and maintenance services will be facilitated through dedicated service access points, allowing BOH activities to remain separate from guest areas. BOH corridors and lifts will be utilised for transporting goods, equipment, and waste, minimising guest exposure to service operations. Centralised storage is positioned in the basement, with designated routes connecting the hotel, kitchen, basement storage, loading docks, and F&B areas. This layout ensures that staff can access the tools and supplies they need without impacting guest areas.

Deliveries, Goods Handling, Servicing and Staff Parking

All deliveries will be directed to a loading dock within the facilities building, which features its own dedicated service entry as the first turnoff approaching the property. This setup prevents deliveries from interfering with guest access points and maintains a streamlined entry experience for guests. A dedicated store person will oversee the receipt and verification of goods, checking item quality, quantity, and temperature, and ensuring the correct distribution throughout the hotel and grounds. Wherever possible, deliveries will be scheduled during off-peak hours to further reduce guest impact.

Any services provided by technicians for maintaiance & repairs will be, where possible, scheduled for completion between check out and check in periods, again to reduce guest impact as these are the times where the hotel will experience it's lowest guest occupancy levels. Different scheduled services will occur at various intervals, for example Fire Equipment & Air conditioing may occur every 6 months or as required. Any technicians will enter the building via the dedicated service entry, away from primary guest entrances.

Staff parking is situated in a secure underground area, with a dedicated staff entrance to prevent any crossover with guest movements. Separate parking areas for staff and guests maintain privacy and efficiency, with convenient access points to BOH/service entries.

Waste Management

Housekeeping and public area attendants will collect waste from guest rooms, public areas, and common spaces, ensuring that waste is efficiently managed throughout the property. Waste collected from these areas will be taken to designated satellite storerooms within each building. From there, waste bins will be transported through back-of-house (BOH) channels to the main waste storage area, ensuring minimal visibility to guests.

On designated waste collection days, larger bins (600L to 1100L capacity) will be transported from the main waste storage area to a prearranged pick-up location where contracted waste management services will collect them. This process has been designed to minimise disruption and optimize efficiency, with equipment such as 240L wheelie bins facilitating ease of movement for housekeeping staff. Waste management practices will comply with all local regulations, prioritising efficient handling and hygiene to maintain a clean and welcoming environment for guests.

Safety

Safety measures are a top priority to ensure the security and well-being of guests, staff, and visitors at the Mount Lofty Golf Estate. The property will feature 24-hour CCTV coverage across public, guest, and back-of-house (BOH) areas, strategically positioned to monitor high-traffic zones, entrances, and critical access points. CCTV footage will be monitored regularly to ensure real-time responses to potential incidents and to provide a safe and secure environment.

Access control will be managed through a keycard system, which restricts entry to certain areas based on access permissions, ensuring that only authorised individuals can enter sensitive or restricted spaces. Fire safety systems, including smoke detectors, sprinklers, and fire-rated materials, are installed in compliance with regulatory standards and are regularly maintained. Comprehensive evacuation plans and emergency exits are clearly marked throughout the building, and routine safety drills will be conducted to keep both staff and guests familiar with emergency procedures.

In addition, the hotel will maintain a well-stocked emergency medical kit and an automated external defibrillator (AED) onsite, with designated staff members trained in basic first aid and emergency response. These safety measures are designed to support a secure, seamless, and reassuring guest experience, further underscoring 1834 Hotels' commitment to safety excellence at this upscale property.

Conclusion

1834 Hotels has carefully prepared the Operational Plan of Management (OPOM) for the Mount Lofty Golf Estate to provide a robust framework for the successful operation of this upper-upscale property. The plan reflects extensive collaboration with architects, designers, and ownership teams, ensuring the final design and operational layout are aligned with the high standards required for a luxury golf resort.

This OPOM addresses critical operational areas, including guest experience, food and beverage management, back-of-house (BOH) operations, safety protocols, and waste management. Key features include:

- A seamless guest arrival and departure process, with valet parking, separate staff/service routes, and clear distinctions between guest and operational zones to enhance privacy and convenience.
- Thoughtful operational design to manage traffic, and servicing schedules, reducing impacts on guests
- Comprehensive safety and security measures, including 24-hour CCTV monitoring, keycard access controls, and adherence to fire safety standards.
- Strategic management of food and beverage outlets, room service, and event spaces to deliver high-quality dining experiences while maintaining operational efficiency.
- Effective waste management and servicing systems designed to minimise disruption

Based on our thorough review and expert assessment, 1834 Hotels is confident that the proposed hotel can operate successfully and sustainably. The plans demonstrate a strong alignment between operational needs and design, ensuring a functional, upscale, and distinctive hospitality destination. We are committed to leveraging our expertise to ensure the long-term success of the Mount Lofty Golf Estate and its position as a benchmark in the luxury hospitality sector.

Attachment I – Correspondence from SA Water

From: Pearce, Aaron
To: Jordan Colbert
Cc: Majorld
Subject: H01143986 - Stirling Golf Course
Date: Monday, 9 December 2024 1:23:54 PM

OFFICIAL

Hi Jordan,

I apologise for the delayed response by SA Water on this one.

SA Water has completed assessment on the Council request to increase discharge to the SA Water network to enable the Stirling Golf Course development via a private Council owned pumping station.

SA Water has investigated the existing network capacity and ascertained that the SA Water network can accommodate an increase in flow rate to 2.6L/s. We understand this would be enabled by upgrading the Council private pump station to discharge at the rate of 2.6L/s and installation of emergency storage as well.

To accept the flows, Council, as the service provider to Stirling Golf Course development, will need to apply to SA Water for a trade waste discharge permit. I have emailed the Adelaide Hills Council accordingly to action this.

SA Water does not reserve capacity in the network and as such this capacity assessment is valid for a period of 12 months.

Regards,

Aaron Pearce
Account Manager

Aaron.Pearce@sawater.com.au • **0439 813 843**
250 Victoria Square/Tarntanyangga ADELAIDE SA 5000

sawater.com.au

attachments are free from viruses. It is the recipient's responsibility to establish its own protection against viruses and other damage.

Attachment J – Correspondence from Succession Ecology

From:	Doreen Marchesan
To:	Chelsea Jurek
Cc:	Luisa Gonzalez; Timothy Paine; "ben@cirqa.com.au"; Matthew King
Subject:	Golf Links Road Walkthrough - Field Data
Date:	Thursday, 12 September 2024 12:45:19 PM
Attachments:	image003.png image004.png GolflinksRd_Datapoints_Shapefile.zip P0335EC_GolflinksRd_Datapoints_240912.xlsx

---

Hi Chelsea,

Golflinks Road walk through
Further to the field trip undertaken yesterday (12/9/24), we have compiled our GPS data points and notes for URPS use and pass onto relevant consultants. Please find attached:

- Excel spreadsheet: P0335EC_GolflinksRd_Datapoints_240912
  - Contains all GPS points collected in the field, with notes regarding the feature at each point, any native vegetation disturbance required based on advised shoulder width and an indication of whether or not NVC approval is required. Additional notes are added where appropriate.
- Shapefile: GolflinksRd_Datapoints_Shapefile
  - Contains the georeferenced data with an attribute table that reflects the information within the spreadsheet.

A snapshot of the points in relation to the Golf Course is below. We are able to supply photographs of vegetation that may require major pruning or removal, if required.

- Black dot – remove
- Large red dot – Major prune (or possibly removal within the emergency access, depending on final CFS requirements)
- Small red dot – Minor prune
- Green – no disturbance
- Grey – miscellaneous

Pump station
As discussed on-site, it is advised to keep all upgrade works to south-east of existing pump station to avoid native vegetation disturbance.

Walking path
We note that another consulting firm (Oxigen) is assessing and planning the walking path route adjacent to Golflinks road, and that they are planning it with the view to not impact any native vegetation. It should be noted that whilst the understorey along Golflinks road is predominantly comprised of exotic species, there are native shrubs scattered throughout, with the highest density being close to the current Golf Course entrance along Golflinks road.

Emergency access route
As discussed on-site, there are a number of trees that will require disturbance from Golflinks Road to the edge of the golf course boundary (refer to data attached). For clarity, we consider that a feasible route can be made through the golf course boundary that will avoid all other trees within the golf course. The patch of blackberry that will be necessary to disturb is unlikely to result in a significant impact to available habitat to any Southern Brown Bandicoots that may be within the area.

If you have any questions regarding the above, please let me know.

Thanks.

Doreen Marchesan
Ecologist
Succession Ecology

Ph: 08 8166 2648
admin@successionecology.com.au
www.successionecology.com.au

Available three days a week, variable days.

succession ecology

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Succession Ecology believes that by understanding and emulating nature we can find unique and innovative solutions
for our clients and the environment.

Succession Ecology recognises the First Peoples of this nation and their ongoing connection to culture and country.
We acknowledge First Nations Peoples as the Traditional Owners, Custodians and Lore Keepers of the world's oldest
living culture and pay respects to their Elders past, present and emerging.

Succession Ecology is committed to creating and fostering a safe inclusive space and support for people of LGBTQIA+
communities and their families.

From:	Doreen Marchesan
To:	Chelsea Jurek; Timothy Paine; Luisa Gonzalez
Cc:	Matthew King
Subject:	RE: Golf Links Road Walkthrough - Field Data
Date:	Monday, 14 October 2024 2:34:58 PM
Attachments:	image001.png image002.png image003.png image006.png

---

Hi Chelsea,

We know the tree in question and have looked at our data and photos and the requirements under the Native Vegetation Act.

Our assessment of this particular dead tree, with regards to the Native Vegetation Act, finds that it does not meet requirements under the Act to be considered 'native vegetation'.
https://cdn.environment.sa.gov.au/environment/docs/dead_trees_as_native_vegetation_fact_sheet_october_2018.pdf
As such, it could be removed, if required.

From a general ecological perspective leaving the tree would minimise disturbance to existing habitat. However, given the likelihood that it would require removal to satisfy traffic requirements, it is a good suggestion to relocate the tree (as logs) to other areas of habitat within the Golf Course property to enhance habitat for other resident fauna.

Hope this helps.

Thanks.

Doreen Marchesan
Ecologist
Succession Ecology

Ph: 08 8166 2648
admin@successionecology.com.au
www.successionecology.com.au

Attachment K – Cultural Heritage Management Plan Framework

ebs heritage

Mount Lofty Golf Estate

Cultural Heritage Management Plan Framework

Mount Lofty Golf Estate Cultural Heritage Management Plan Framework

30 November 2022

Version 3

Prepared by EBS Heritage for Mount Lofty Golf Estate Pty Ltd

Document Control					
Revision No.	Date issued	Authors	Reviewed by	Date Reviewed	Revision type
1	05/09/2022	L. Salisbury	Dr M Louter	05/09/2022	Draft
2	24/10/2022	L. Salisbury	-	-	Draft
3	30/11/2022	L. Salisbury	-	-	Final

Distribution of Copies			
Revision No.	Date issued	Media	Issued to
1	06/09/2022	Electronic	Sonia Mercorella, Trice
2	24/10/2022	Electronic	Sonia Mercorella, Trice
3	30/11/2022	Electronic	Sonia Mercorella, Trice

EBS Heritage Project Number: GX220701

CITATION: EBS Heritage (2022) Mount Lofty Golf Estate Cultural Heritage Management Plan Framework. Report to Mount Lofty Golf Estates Pty Ltd. EBS Heritage, Adelaide.

Cover photograph: Proposed site for orchard and garden (photo by EBS Ecology). .

EBS Heritage
112 Hayward Avenue
Torrensville, South Australia 5031
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http://www.ebsheritage.com.au
email: info@ebsheritage.com.au

GLOSSARY AND ABBREVIATION OF TERMS

AAR	Aboriginal Affairs and Reconciliation
AH Act	*Aboriginal Heritage Act 1988*
CHMP	Cultural Heritage Management Plan
AGD-AAR	Attorney General's Department – Aboriginal Affairs and Reconciliation (formally DPC-AAR)
Guidelines	*Guidelines for the Preparation of a Development Report, Mount Lofty Golf Estate*
KYAC	Kaurna Yerta Aboriginal Corporation
m	meter(s)
Mount Lofty Golf Estate	Mount Lofty Golf Estate Pty Ltd
n.d.	no date

Table of Contents

List of Tables

1 INTRODUCTION

This Cultural Heritage Management Plan (CHMP) Framework has been prepared in response to the *Guidelines for the Preparation of a Development Report, Mount Lofty Golf Estate* (the Guidelines) (State Planning Commission 2022) to address the issues / impacts of the development, on the cultural heritage of First Nations People. It has been identified in the Guidelines that the proposed development has the potential to impact on sites and places of Aboriginal heritage through disturbance during construction.

The CHMP Framework document sets out in detail how the risk will be managed and the controls that will be implemented to ensure that no damage is caused to Aboriginal heritage during the construction and operational phases of the development.

1.1 Project description

Mount Lofty Golf Estate Pty Ltd (Mount Lofty Golf Estate) is proposing to redevelop the Stirling Golf Course. As part of the redevelopment, they are intending to undertake the following works:

- Hotel - 3-5 level hotel building comprising:
    - 56 hotel suites.
    - 15 x two bedroom serviced apartments.
    - 15 x three bedroom serviced apartments.
    - 2 penthouse serviced apartments.
    - Back of house, plant storage and maintenance areas.
    - A 537m^2 function room.
    - A 212m^2 restaurant with 89 m^2 external terrace.
    - 186m^2 sports bar.
    - A 189m^2 gallery and cafe.
    - A 94m^2 wellness centre with 125m^2 gym and spa/massage treatment rooms.
- Private retreats – ‘Pods’
    - 17 x one bedroom units.
    - 1 x back of house Service Pod.
- Adaptive reuse of the existing perfumery:
    - Refurbishment of the existing local heritage place to accommodate a multipurpose space for use as café, retail or functions.
    - Extension to the Perfumery to include a covered outdoor dining area.
    - Orchard and perfumery garden plantings to reimagine the former use of the building as a “Scent Factory”.
    - Note: the perfumery building will temporarily house the golf club whilst construction is occurring.
- Golf Course Facilities Building - 2-5 level building comprising:

  - Retention of 18-hole golf course with improvements.
  - Refurbished function facilities, cart storage and 138m2 clubhouse in new building.
  - New 97m2 pro-shop, administration areas, gym and change rooms.
- Car Parking, Access and Waste Management
  - A total of 200 car parking spaces in two car parking areas.
  - Emergency vehicle access via western entry from Golflinks Road.
  - Main access point via Golflinks Road.
  - Designated service bay for waste collection and service vehicles.
  - Porte cochere and valet area for guests and buses.
  - A separate entry from Old Carey Gully Road to provide maintenance vehicle access and public access to the perfumery building.
  - Designated waste storage areas.
- Subdivision – following construction of the proposed development, it is proposed to divide the site into three (3) allotments:
  - Allotment 532, with an approximate area of 9,924m2 together with a right of way 'A', comprising the hotel building and pods.
  - Allotment 533, with an approximate area of 5,056m2 together with a right of way 'B', comprising the golf club and facilities building.
  - Allotment 531, with an approximate area of 38.4 hectares, comprising the balance of the golf course, subject to easements 'A' and 'B'.

At the time of preparing this CHMP Framework, the design for the redevelopment had not been finalised. This CHMP framework document has been written with the intent that it will be valid, irrespective of the final design of the development.

1.2 Project location

The Stirling Golf Club is located at 35 Golflinks Road, Stirling South Australia in the Hundred of Onkaparinga, within the Local Government Area of the Adelaide Hills Council, the Landscape Management Region of the Hills and Fleurieu and the Native Title Determination of the Kaurna People.

The proposed redevelopment is situated on Certificate of Title 5891, Folio 805 (Allotment 53 in Deposited Plan 59212) and is boarded to the east by the Mount George Conservation Park and to the west by Old Carey Gully Road. Refer to Appendix 1 for a map of the project area.

1.3 Purpose of the CHMP Framework

The purpose of the CHMP Framework is to:

- Demonstrate the commitment by Mount Lofty Golf Estate to consulting and working with the Kaurna Yerta Aboriginal Corporation (KYAC), the registered native title body corporate for the Kaurna people.
- Ensure Mount Lofty Golf Estate meets its statutory obligations under the *Aboriginal Heritage Act 1988* (AH Act) in relation to the management and protection of Aboriginal cultural heritage.
- Demonstrate the measures that will be implemented to manage and protect Aboriginal cultural heritage in the pre-construction, construction, and operation phases of the project.
- Demonstrate the cultural heritage stop work / discovery and reporting procedures should Aboriginal heritage be identified during either the construction or operational phases of the project.

2 SCOPE OF WORKS

The redevelopment of the Stirling Golf Club and Golf Course is anticipated to be undertaken using a combination of traditional construction methods together with less invasive measures like the Surefoot™ concreate free footing system. The essential pre-construction, construction and operational phase activities are set out in sections 2.1, 2.2 and 2.3 respectively.

Mount Lofty Golf Estate acknowledge that despite best efforts to identify and avoid Aboriginal heritage sites, a risk remains that on-ground works could result in damage, disturbance or interference to Aboriginal heritage sites, objects and ancestral remains which are protected by the AH Act. To ensure protection of any Aboriginal cultural heritage, mitigation measures will be documented in the CHMP and be implemented by Mount Lofty Golf Estate staff, contractors and sub-contractors during all phases of the project.

2.1 Essential pre-construction activities

The AH Act does not mandate a requirement for a cultural heritage survey where there is a low likelihood of disturbance to Aboriginal heritage. The cultural heritage desktop assessment (EBS 2021) identified that there was a low likelihood of disturbance to unknown Aboriginal heritage, therefore a cultural heritage survey has not been undertaken at this stage of the project design.

The following preconstruction activities were undertaken prior to the development of this CHMP Framework:

- Geotechnical sampling,
- Flora and Fauna Survey, and
- Arborist Survey.

2.2 Essential construction activities

The following essential construction activities are anticipated to be undertaken during the redevelopment of the project area:

- Establishment of new roads and car parking facilities,
- Vegetation clearance and earthworks at new hotel building, 20 private retreats (pods) and one service pod,
- Pouring of concrete footings for new clubhouse facility and pro-shop, administration areas and change rooms,
- Upgrades to current 18-hole golf course,
- Land clearance and earthworks for the refurbishment, and expansion of the Local Heritage Place,
- Landscaping and establishing a perfumery garden and orchard,
- Establishment of associated temporary facilities,

- Establishment of fire protection infrastructure,
- Establishment of waste facilities,
- Storm water management,
- Clean up of waste materials and rehabilitation of temporary areas of disturbance,
- Repurposing dam for stormwater management, and
- Alteration on current electrical infrastructure and establishment of new onsite transformer.

2.3 Essential operational activities

The following essential operational activities are anticipated to be ongoing after completion of the redevelopment:

- Maintenance of the hotel building, private retreats and service pod,
- Maintenance of the golf course and gardens,
- Maintenance of fire protection infrastructure,
- Maintenance of roads and car parking facilities,
- Maintenance of onsite wastewater treatment,
- Maintenance of electricity transformer, and
- Continued refuse collection, deliveries and other hotel servicing.

3 ABORIGINAL CULTURAL HERITAGE

There is one Aboriginal site protected under the AH Act within 1000 metres (m) of the project area (Appendix 2). The registered site is on the western side of Carey Gully Road, opposite the northern end of the golf course near Hole 10 and therefore out of the project area. Given the distance of the site from the project area, construction during the proposed development will not disturb this known site.

There are no Aboriginal places listed in the Australian Heritage Database within, or near to the proposed project area.

3.1 Risk assessment

Given that many sites and objects have previously been recorded throughout the Adelaide Hills, it would normally be anticipated that construction works would pose a high likelihood that unknown Aboriginal sites or objects of Aboriginal significance would be disturbed during construction. Only one site of Aboriginal significance however was identified within 1000 m of the project area, and none recorded in the golf course.

Geotechnical sampling showed that there is a fill layer of between 0.20 m and 0.35 m across most of the site, meaning that it is unlikely that Aboriginal artefacts would be found within the project area, on the surface and in situ. Under the fill layer is topsoil which on average is a depth of between 0.10 m and 0.30 m. The layer directly under the topsoil and through to the bedrock, was predominately high plasticity clay which is generally heavy and difficult to dig into. These results reinforce that the likelihood of disturbing ancestral burials or other Aboriginal cultural items is low, as aboriginal artefacts are generally found in sandy or gravelly soils not in compacted clays.

During construction of the Mount Lofty Golf Course, groundwork activities however may inadvertently disturb previously undiscovered sites of Aboriginal cultural significance. Table 1 outlines mitigation and management controls that will be implemented to avoid and / or minimise impacts to Aboriginal cultural heritage values.

Table 1. Aboriginal cultural heritage mitigation and management controls.

Aspect	Detail
Objective	• Avoid or minimise the impacts of construction, operation, and maintenance of the project on Aboriginal sites, objects of significance or remains.
Management Strategy	• Minimise any heritage impacts within the construction footprint, and to avoid impacts outside of the construction footprint.
Legislation and other guidance	• *Aboriginal Heritage Act 1988* (SA) • Discovery of Aboriginal Sites and Objects Fact sheet (Department of Premier and Cabinet – Aboriginal Affairs and Reconciliation (DPC-AAR), n.d.) • Project Planning and Aboriginal Heritage Guide (DPC-AAR n.d.)
Potential impacts	• Damage, disturbance or interference with areas of Aboriginal cultural heritage significance. • Damage, disturbance or interference to identified or unidentified sites, objects or remains.

Mitigation and control measures	• Desktop assessment of registered and recorded sites via the Central Archive, including the Register of Aboriginal Sites and Objects, maintained by Attorney General's Department - AAR. • Utilise previously disturbed areas for infrastructure wherever practicable. • Induct all staff and contractors on cultural heritage prior to any onsite construction work. • Undertake a cultural heritage survey with native title claimants, if required. • Develop and implement a Cultural Heritage Management Plan detailing the procedures for the identification, management and protection of Aboriginal cultural heritage sites including monitoring of ground disturbance activities in agreed locations with relevant traditional owner representatives, if required.

3.2 Cultural heritage surveys – pre-construction phase

Given that the property has been operating as a golf course for 95 years and prior to that for at least 75 years it was used for mixed farming, dairying, iron mining and timber milling, suggests that there is a low likelihood of identifying or disturbing unknown surface Aboriginal sites or objects of significance as fill has been laid down across the site and the topsoil and subsurface layer have previously been disturbed.

The AH Act does not mandate a requirement for a cultural heritage survey where there is a low likelihood of disturbance to Aboriginal heritage therefore a cultural heritage survey was not undertaken prior to the pre-construction activities detailed in section 2.1.

3.3 Monitoring and cultural heritage surveys – construction phase

Following the completion of the detailed design for the project and additional geotechnical sampling, monitoring of ground disturbance activities in certain agreed locations, may need to be undertaken to ensure sites of Aboriginal heritage value are protected.

3.3.1 Monitoring

Although it is not a requirement under the AH Act, having Aboriginal Monitors present during ground works may be considered, as it is effective for the early detection of artefacts, objects and burial sites during works. Monitoring involves the continuous observation of earthmoving works to:

- Watch the sediments being excavated to see any change;
- Inspect and sieve the removed soil to ensure that no discoveries go unnoticed; and
- Ensure that harm to any cultural heritage that may be present is mitigated when and where it cannot be reasonably avoided.

Monitoring of earthworks is undertaken until the specified depth required for development is reached or until compact clay or bedrock is reached at which point the chance of encountering archaeological features is significantly reduced.

The requirement for an Aboriginal heritage monitoring program will be assessed once the final design for the project has been completed.

3.3.2 Cultural heritage survey

The AH Act does not mandate a requirement for an Aboriginal heritage survey unless there is a high likelihood of disturbance to unknown Aboriginal sites/objects. The risk assessment undertaken as part of the cultural heritage desktop assessment (EBS 2021) determined that there are no known Aboriginal sites within the project area and the likelihood of the project works disturbing unknown sites is low. A cultural heritage survey is therefore currently deemed unwarranted.

Following the completion of the detailed design for the project, the requirement for a cultural heritage survey will be reassessed.

3.4 Cultural heritage surveys – operations phase

It is unlikely further cultural heritage surveys will be required once the Mount Lofty Golf Estate is operational. Mount Lofty Golf Estate will however manage ongoing compliance with the AH Act in accordance with its operational heritage management system and in consultation with the KYAC.

4 CHMP FRAMEWORK

Mount Lofty Golf Estate does not currently intend to make any application for a Section 23 authority under the AH Act given that there is no known Aboriginal cultural heritage within the project area and the cultural heritage risk assessment has determined that the likelihood of disturbance to unknown Aboriginal cultural heritage is low. Nor does the proponent intend to undertake a cultural heritage survey prior to construction commencing, unless mandated in the Ministers Response Document.

Should any known Aboriginal sites be identified prior to construction or unknown Aboriginal heritage be identified during construction activities, a cultural heritage survey may be warranted and/or requested by the KYAC. A CHMP will then be developed that will include the following information and requirements in relation to the management and protection of Aboriginal cultural heritage during construction and operation of the:

- requirements and responsibilities for all employees, contractors and subcontractors,
- awareness training for all workers to understand cultural heritage considerations associated with the project,
- area-specific site inductions and training,
- protocols for discovery of Aboriginal sites, objects or remains and reporting requirements, in accordance with the AH Act,
- requirements to avoid sites of Aboriginal cultural heritage significance as determined from pre-construction surveys and in consultation with the KYAC,
- Stop work/site discovery procedure if any Aboriginal sites or objects are exposed during construction and engage a suitably qualified heritage consultant and / or appropriate authority to investigate. Work will not continue in that part of the project area until direction has been provided by a suitable authority, and
- exclusion areas to be implemented around sites of cultural heritage significance.

4.1 Pre-construction phase

The AH Act does not mandate a requirement for a cultural heritage survey where there is a low likelihood of disturbance to Aboriginal heritage therefore a cultural heritage survey was not undertaken prior to the pre-construction activities detailed in section 2.1.

4.2 Construction phase

During construction activities, Aboriginal heritage protection and management measures will include:

- ongoing heritage inductions to make all project personnel aware of Aboriginal heritage sites and appropriate management procedures in place to avoid impact,
- monitoring of construction works in higher sensitivity or higher risk locations by KYAC representatives,
- robust measures to address site discoveries during construction,

- where sites are identified during construction, Mount Lofty Golf Estate will aim to relocate works to avoid impact,
- If works are unable to be relocated, Mount Lofty Golf Estate will work closely with the KYAC and the contractor to find a suitable solution in accordance with the requirements of the AH Act,
- at the conclusion of construction Mount Lofty Golf Estate intends to undertake a compliance audit to ensure all heritage management conditions have been met and that that the mitigation measures and controls operated effectively.

4.3 Operations phase

Mount Lofty Golf Estate will manage ongoing compliance with the AH Act in accordance with its operational heritage management system, any CHMP, and in consultation with the KYAC.

5 BIBLIOGRAPHY

EBS Heritage (2021). Mount Lofty Golf Estate Cultural Heritage Management Plan Framework. Report to Mount Lofty Golf Estate Pty Ltd. EBS Heritage, Adelaide.

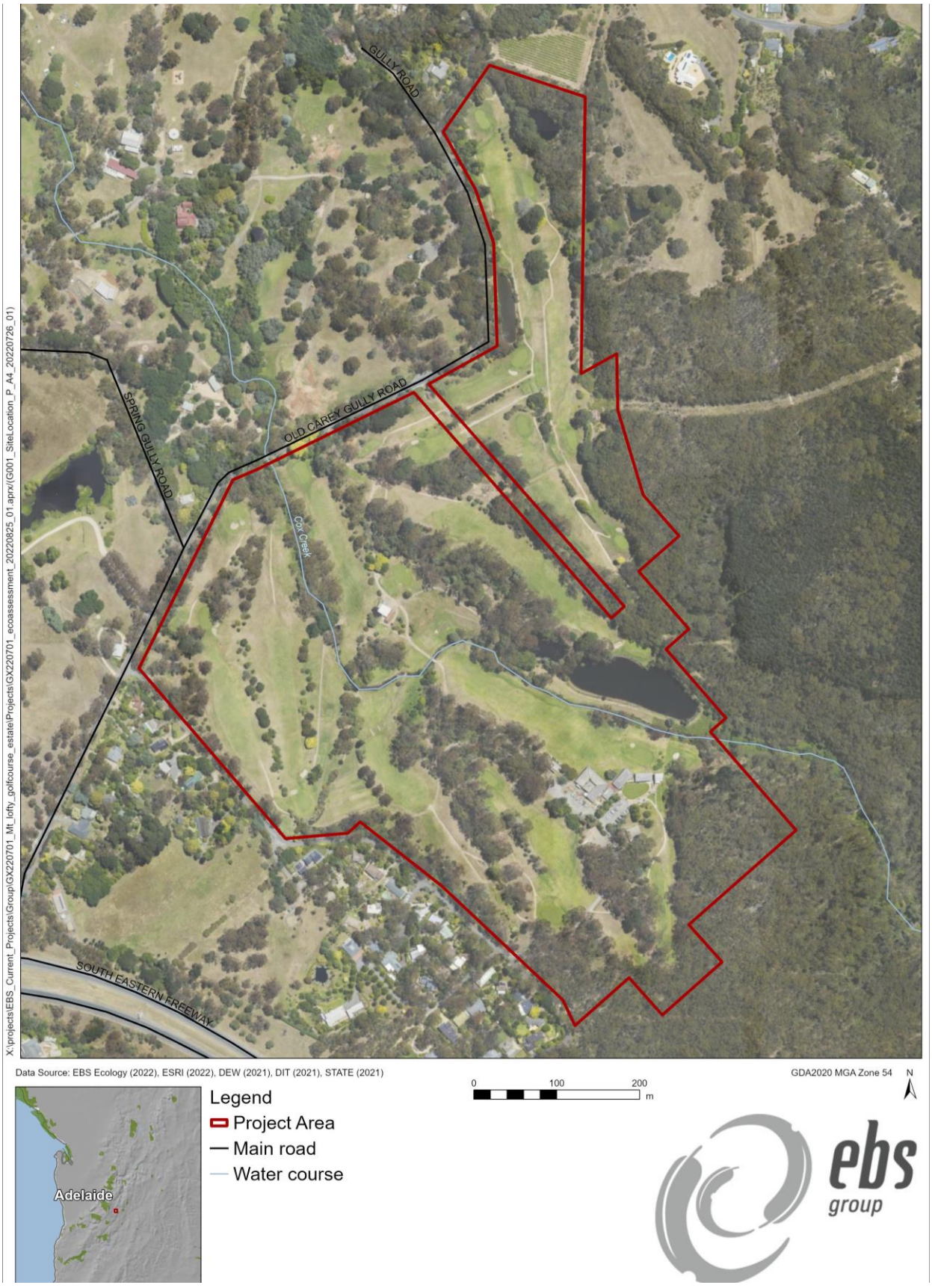
State Planning Commission (2022). *Guidelines for the preparation of a Development Report Mount Lofty Golf Estate*. Report to Mount Lofty Golf Estate Pty Ltd.

Department of the Premier and Cabinet Aboriginal Affairs and Reconciliation (DPC-AAR) (n.d.). *Aboriginal Heritage Fact Sheet - Discovery of Aboriginal Sites and Objects*.

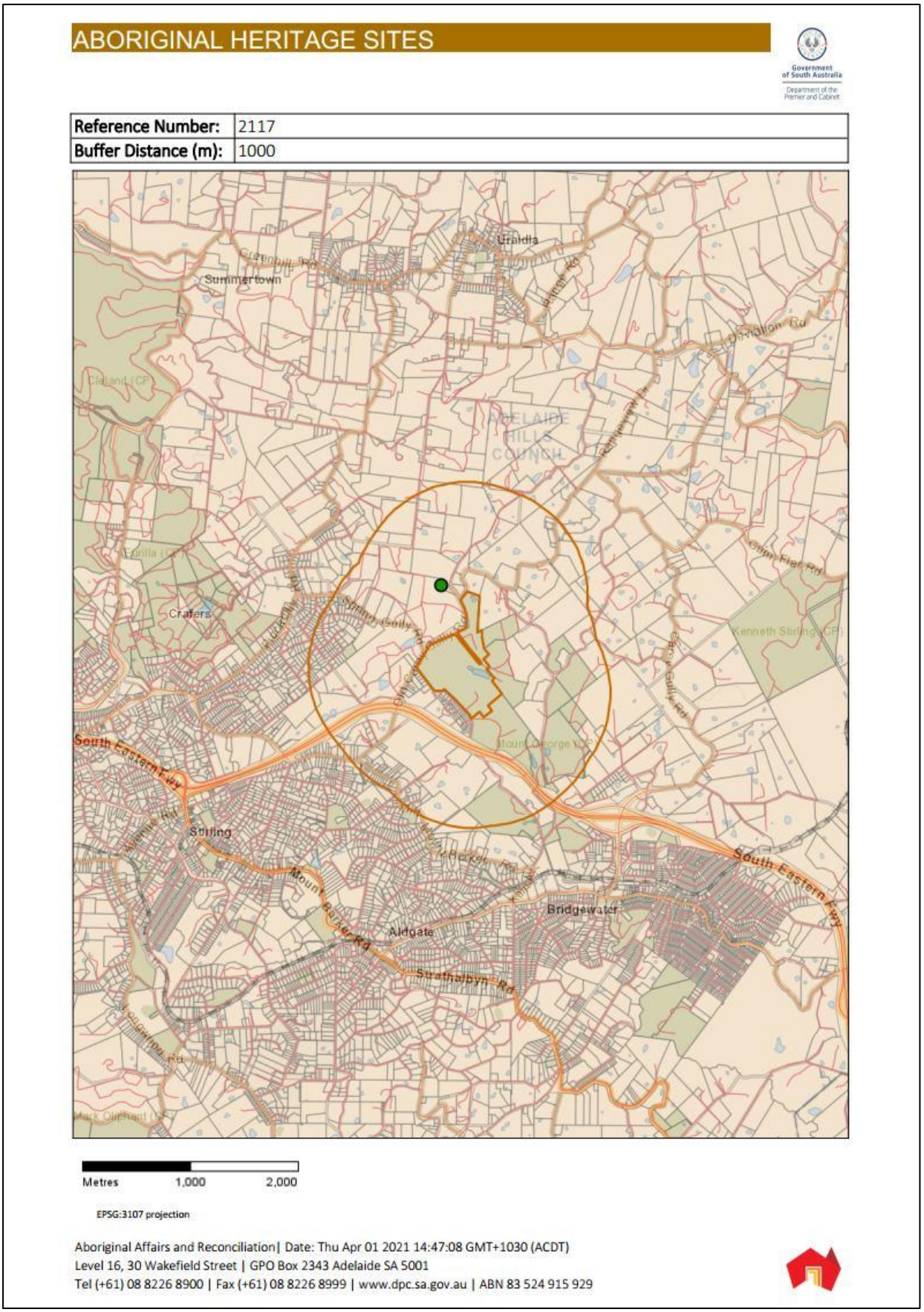
Department of the Premier and Cabinet Aboriginal Affairs and Reconciliation (DPC-AAR) (n.d.). *Aboriginal Heritage Fact Sheet - Project Planning and Aboriginal Heritage*.

6 APPENDICES

Appendix 1 – Location of the project area.



Appendix 2 – Location of Aboriginal site in relation to project area.



EBS Heritage
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www.ebsecology.com.au
t. 08 7127 5607

Attachment L – Correspondence from Council's CWMS Officer

Jordan Colbert

From: Kim Krieg <kkrieg@ahc.sa.gov.au>
Sent: Friday, 24 March 2023 7:13 AM
To: Jordan Colbert
Cc: Ari Mudugamuwa
Subject: Stirling Golf Course Development
Attachments: RE_ MLGE - Preliminary Wastewater discussions current proposal.eml

Hi Jordan,

Thanks for the chat yesterday regarding the above development. I can confirm that Council has in principle support for the proposed development including upgrade to Council's Golflinks Rd CWMS pump station 2 infrastructure located opposite Golflinks Court, Stirling. The developer will be responsible for all augmentation charges associated with the proposed pump station 2 upgrade and must seek approval from SA Water to discharge into their infrastructure.

Once the application is lodged further discussions can take place regarding the necessary upgrade.

Kind regards

Kim

Kim Krieg (Pearson)
Community Wastewater Management System (CWMS) Technical Officer
Adelaide Hills Council

p 08 8408 0410
e kkrieg@ahc.sa.gov.au
w ahc.sa.gov.au

Visit me at: 63 Mount Barker Road, Stirling SA 5152
Postal: 63 Mount Barker Road, Stirling SA 5152

Attachment M – Pedestrian Pathway Plan prepared by Oxigen Landscape Architects and Correspondence from Council's

From: [redacted]
To: Chelsea Jurek
Subject: Fwd: MLG PROPOSED FOOTPATH ALONG GOLFLINKS ROAD
Date: Monday, 27 May 2024 1:48:13 PM
Attachments: image001.png
21.029_FOOTPATH_A.pdf
44316-1-1-SV-TO1-r0.pdf

---------- Forwarded message ---------
From: **James Hayter** <jhayter@oxigen.net.au>
Date: Tue, Jan 23, 2024 at 3:13 PM
Subject: MLG PROPOSED FOOTPATH ALONG GOLFLINKS ROAD
To: [redacted] Tiana Della Putta <tiana.dellaputta@trice.com.au>
Cc: Oliver Johnson <OJohnson@oxigen.net.au>, Adam Littlefield <ALittlefield@oxigen.net.au>

Hi [redacted]

HNY. Apologies for not responding earlier.

- Council supports the construction of the footpath adjacent to Golf Links Road. I've spoken again to our contact in Council – Steven Brooks – and summarised/confirmed the approval in the email below (today's date), noting that part of the works will be on Council's land – that is, within the road reserve.

- Council is not requiring an LMA or similar formal agreement which is good.

- I've attached the earlier sketch and the Fyfe survey of the pegged alignment, noting many of the pegs are now removed. A contractor will be able to construct the footpath from the survey drawing.

- Please note that the footpath will be approximately 900mm wide with no edging (to allow it to remain 'informal' and contain costs). I recommend using recycled rubble as the construction material.

Please let me know if you wish to proceed. If you want, we can organise a contractor and costings for the works.

Regards, James

James Hayter

Director

Registered Landscape Architect AILA | Member No. 265

Registered Architect AIA | Member No. 2337

Accredited Professional - Planning Level 2 Registration No. APP20230018

Professor, School of Architecture & Civil Engineering, University of Adelaide

Member, State Commission Assessment Panel

Oxigen Pty Ltd

Kaurna Country

98-100 Halifax Street Adelaide

T +61 (08) 7324 9600

View our recent projects at oxigen

We acknowledge the Traditional Custodians of the land we work on and respect their continuing culture and the contribution they make to the life of our cities and regions.

From: James Hayter
Sent: Tuesday, January 23, 2024 2:30 PM
To: 'Steven Brooks' <sbrooks@ahc.sa.gov.au>
Subject: MLG PROPOSED FOOTPATH ALONG GOLFLINKS ROAD

Hi Steven

Thanks for talking through just now. I've attached the Fyfe survey of the alignment which was pegged and inspected in November last year. I've also attached the concept alignment with notes from prior to this. The intended route is as per the Fyfe survey.

Please note:

- Some sections of the route will be within the road verge, notably at the western end and adjacent to the pump station where a short section of existing rubble footpath is utilised.
- The works do not require removal or damage to native trees.
- Some exotic species, notably blackberry and ash saplings, will be removed as part of the works.
- The path is intended as an (approximately) 900mm wide rubble (recycled road base) path. No edging. The path will be constructed by using a narrow blade to scrape the ground and then install the rubble.

From your email below I note Council's support for the works commencing. I'll let you know in advance when onsite works commence and can meet on site then if required.

Please let me know if you or Ashley require further clarification.

Thanks, James

James Hayter

Director

Registered Landscape Architect AILA | Member No. 265

Registered Architect AIA | Member No. 2337

Accredited Professional - Planning Level 2 Registration No. APP20230018

Professor, School of Architecture & Civil Engineering, University of Adelaide

Member, State Commission Assessment Panel

oxigen

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View our recent projects at oxigen

We acknowledge the Traditional Custodians of the land we work on and respect their continuing culture and the contribution they make to the life of our cities and regions.

From: Steven Brooks <sbrooks@ahc.sa.gov.au>
Sent: Monday, November 6, 2023 5:37 PM
To: James Hayter <jhayter@oxigen.net.au>
Subject: FW: MLG PROPOSED FOOTPATH ALONG GOLFLINKS ROAD

Hi James,

In update,

I have received a reply from Ashley Curtis - Manager Civil Services which supports the works commencing or that the works occur as per the development.

Kind Regards,

Steven.

Steven Brooks

Biodiversity Officer | Open Spaces

Adelaide Hills Council

t: 08 8408 0547

e: sbrooks@ahc.sa.gov.au

w: www.ahc.sa.gov.au

From: Steven Brooks
Sent: Thursday, 2 November 2023 12:01 PM
To: James Hayter <jhayter@oxigen.net.au>
Subject: RE: MLG PROPOSED FOOTPATH ALONG GOLFLINKS ROAD

Hi James,

Thanks for pegging out the Golflinks footpath and the photographs which I have downloaded.

I will relay the photographs and your comments below through to Chris Janssan - Manager Open Space and Ashley Curtis - Manager Civil Services. Requesting advice on the next steps.

Are you able to put some further words to your question in relation to a Land Management Agreement re the future of this path. I assume primarily relating to the ongoing

maintenance and agreed responsibility.

I inspected the location yesterday afternoon and my initial comments are attached (as highlighted) in relation to my inspection and your notes (as below).

I have a question please (reference to photograph taken yesterday) assume in this situation the path will merge into the blackberry and then through the stand of trees, to the rear of the Native Cherry?

Kind Regards,

Steven.

Steven Brooks

Biodiversity Officer | Open Spaces

Adelaide Hills Council

t: 08 8408 0547

e: sbrooks@ahc.sa.gov.au

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From: James Hayter <jhayter@oxigen.net.au>
Sent: Tuesday, 31 October 2023 5:08 PM
To: Steven Brooks <sbrooks@ahc.sa.gov.au>
Cc: [redacted] Tiana Della Putta <tiana.dellaputta@trice.com.au>; Sonia Mercorella <sonia.mercorella@trice.com.au>; Oliver Johnson <OJohnson@oxigen.net.au>
Subject: MLG PROPOSED FOOTPATH ALONG GOLFLINKS ROAD

[EXTERNAL]

Hi Steven

To confirm, I pegged a route for the proposed footpath adjacent to Golf Links Road this afternoon. Please find attached photos via the Drop Box of the route starting at the top – that is, the main entry to the Golf Course.

https://www.dropbox.com/scl/fo/ee7eu1sfgw20hezuhg04j/h?rlkey=tpkyi43gvbz4b6m4o3p3ixvez&dl=0

- The footpath is located in both Council's road verge and the golf course land - Noted the path traverses the logical route.
- It takes a "logical" route utilising existing rubble footpaths where possible - Agreed.
- Approximately half way along the footpath joins an existing part hotmix/part rubble footpath alongside the pump station - Noted.
- Towards the top end, two minor earth swale crossing are marked – these can be simple structures such as railway sleepers or more engineered structures like a precast culvert. Probably the former is preferable - Noted (will discuss this specifically with management).
- No trees are intended for removal - Noted please refer to my comment above.
- At the top end, to keep the footpath away from the road carriageway, I've marked it going through blackberry thickets – the land is relatively level and I think we can thread the footpath through the existing trees. - Yes I assessed this location in greater detail and believe there is an clear opportunity to meander the path through the trees in existence.
- I've kept the path away from the links and do not anticipate an issue from stray golf balls - Noted, there is always the potential for this risk albeit low.

Please review on site and offer any changes. Once Council is happy with the alignment I suggest two actions:

1. We discuss a letter of agreement, or similar, to the route. This will be between the developer and Council - Please see my comment above, I will discuss this further with management.
2. We formally survey the route for record – this to be by the surveyor currently engaged by the developer on the project - Noted.
3. We discuss the construction and timing further with technical staff in Council - Agreed, I will discuss with management and advise.

I understand you and relevant Council officers will inspect the route over the next couple of days and advise any edits. Once you are happy with the route we can further progress the points above.

Thanks very much, James

James Hayter

Director

jhayter@oxigen.net.au

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Oxigen Pty Ltd

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Kaurna Country

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Registered Landscape Architect AILA | Member No. 265

Registered Architect AIA | Member No. 2337

Accredited Professional - Planning Level 2 Registration No. APP20230018

Council acknowledges that we undertake our business on the traditional lands and waters of the Peramangk and Kaurna people. We pay our respects to Elders past, present and emerging as the Custodians of this ancient and beautiful land.

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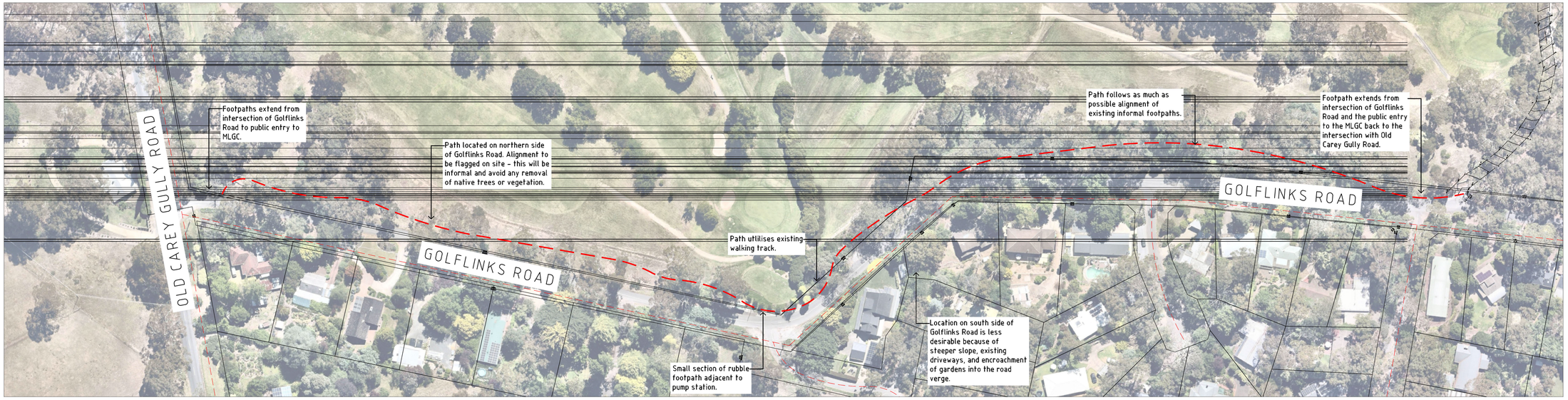

oxigen

N

1:500 (A1), 1:1000 (A3)

0 5 10 15 20m

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ORIGINAL SIZE A1

FYFE

ADELAIDE
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Adelaide SA 5000
GPO Box 2450
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T 61 8 8201 9600
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PLAN DETAILS

COUNCIL : ADELAIDE HILLS COUNCIL
MAP SHEET : 6628-48-q
CT REFS : CT5891/805

0 5 10 20 30 40 50
SCALE 1: 500

LEVEL DATUM :	AHD 3rd ORDER	DATA FILE/S :	44316-1-1.CRDB
LEVEL AUTHORITY :	PSM 6628/2395 EL:421.415 03-dec-2004	SURVEYOR:	CXB
CO-ORD DATUM :	MGA2020 PLANAR BASED ON 6628/52827 10-feb-2023		

NO.	REVISION	STAFF	CHECK	DATE
0	PREPARED FOR INFORMATION	AGM	CXB	21/12/23

TRICE PTY LTD

FEATURE SURVEY
STIRLING GOLF CLUB
GOLFLINKS ROAD
STIRLING

DRAWING 44316-1-1-SV-TO1-r0

INSTRUCTION 44316-1-1
DATE 21/12/2023
SHEET 1 OF 2
REV. 0

LEGEND

These standard symbols will be found in the drawing.

- SEWER INSPECTION OPENING
- SEWER INSPECTION POINT
- SEWER MANHOLE
- BOLLARD
- FENCE POST
- SURVEY BENCHMARK
- PICKET
- FIRE PLUG
- COMMUNICATION PIT
- FENCE
- LINEMARKING SOLID
- INDICATIVE PROPOSED FOOTPATH ALIGNMENT

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PLAN DETAILS

COUNCIL : ADELAIDE HILLS COUNCIL
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NO.	REVISION	STAFF	CHECK	DATE
0	PREPARED FOR INFORMATION	AGM	CXB	21/12/23

TRICE PTY LTD

FEATURE SURVEY
STIRLING GOLF CLUB
GOLFLINKS ROAD
STIRLING

DRAWING 44316-1-1-SV-TO1-r0

INSTRUCTION 44316-1-1
DATE 21/12/2023
SHEET 2 OF 2
REV. 0

ORIGINAL SIZE A1

Attachment N – Amended Integrated Water Management Plan and SMP

ENGINEERING

Integrated Water Management Plan

IWMP for Mount Lofty Golf Estate

JOB NUMBER:	S53897 - 282604
CLIENT:	Venture Capital Developments Pty Ltd
SITE:	Stirling Golf Club, 35 Golflinks Road, STIRLING, SA 5152
DATE:	2/04/2024
REVISION:	3

Engineering your success.

ADELAIDE
MELBOURNE
SYDNEY

Document Status

Rev No.	**Status**	**Author**	**Reviewed by**	**Reviewed Date**
0	For Approval	J Colbert	J Clapp	21.03.2023
1	For Approval	J Colbert	J Clapp	28.03.2023
2	**For Approval Updated Masterplan**	J Colbert	J Clapp	02.04.2024
3	**RFI (PLUS)**	G.Ashtijou	J Clapp	28.05.2024

Table of Contents

Introduction and scope

An Integrated Water Management Plan (IWMP) is a comprehensive approach to managing water resources, namely water supply, rainwater harvesting, stormwater, wastewater, and groundwater resources. The aim of an IWMP is to promote sustainable water use, minimize the impact of development on water resources, and ensure the long-term availability and quality of water resources. This report outlines an IWMP for the proposed development at Mount Lofty Golf Estate, situated within the Adelaide Hills Council. The plan is designed to comply with best practice guidelines and requirements, namely the South Australian Environmental Protection Authority (EPA) and the SA Public Health wastewater requirements.

The Guidelines for the preparation of a Development Report for Mount Lofty Golf Estate, supplied by the State Planning Commission outline the significance of the site, surrounding environment and the risk level surrounding the environmental sustainability, flooding and water quality, surface water and waste management considerations.

Mount Lofty Golf Estate is located within a sensitive watershed catchment, and it is essential to ensure that its water management practices are sustainable and environmentally responsible. This report will provide a roadmap for the implementation of best-practice water management practices that will ensure the long-term viability of the development while protecting the environment and meeting regulatory requirements.

Proposed works

The proposed development is for tourist accommodation and golf course and associated club facilities (ancillary bar, gymnasium and function rooms), together with landscaping, subdivision, tree and native vegetation removal. The proposed development is summarised as follows:

- Construction of a 3-5 level tourist accommodation building comprising 56 units, 15 two bedroom serviced apartments, 15 three bedroom serviced apartments and 2 penthouse serviced apartments. Together with, back of house, plant storage and maintenance areas, function room, restaurant and external terrace, sports bar, gallery and cafe and wellness centre.
- Adaptive reuse of the Local Heritage Perfumery building as a retail, cafe and multipurpose function space.
- Golf course facilities building - 2-5 level building comprising function facilities, cart storage and clubhouse, pro-shop, administration areas, gym and change rooms.
- Retention of the 18-hole golf course with improvements.
- Car Parking, access and waste management including a total of 257 car parking spaces, Including:
  - 200 formalised car parking spaces and a porte cochère (set-down/pick-up) facility at the tourist accommodation and golf club facilities building;
  - 20 spaces adjacent to the Perfumery Building accessible from Old Carey Gully Road; and
  - 37 spaces for staff only adjacent to the circulation road connecting from Old Carey Gully Road with further informal parking opportunities within the site.
- Subdivision of the land (1 into 3) allotments to formalise the areas for tourist accommodation, golf course facilities building and balance of the site for leasing purposes.
- Stormwater detention basin, creek and lake restoration activities including planting natives in the beds, erosion control works and creek crossings.
- Construction of entry wall and new entry signage at the existing Golflinks Road entry.
- New dedicated pedestrian trail adjacent Golflinks Road.

A whole of site plan is provided overleaf which details the proposed development.

A site plan and or supporting documentation has been provided within the appendices displaying all water related features and infrastructure for each section of this report as applicable.

Water Balance assessments

DSquared Consulting has undertaken a water balance assessment of the proposed development, summarising the findings below;

The development will achieve at least a 10% reduction in potable water use when compared to a reference building in accordance with the Green Star Buildings v1 rating tool requirements.

Preliminary water balance modelling indicates the development will achieve a 33% reduction in potable water demand when compared with a 'standard practice' reference case as defined by the Green Building Council of Australia. This exceeds Green Star Water Use requirements under the Buildings v1 rating tool.

A 50 kL rainwater storage tank will be provided and harvest rainwater for landscape irrigation, laundry services, and washdown of bin rooms and golf carts, which will contribute 13% of the buildings' total annual water demands, or 25% of the buildings' non-potable water demands.

	Standard practice	**Mount Lofty Golf Estate**
Total water demand (kL p.a.)	6,380	4,884
Rainwater contribution (kL p.a.)	Nil	639 (13% of demand)
Resultant potable water demand (kL p.a.)	6,380	4,245 (33% reduction over standard practice)

Table 1 - Water Balance summary

A copy of the sustainability assessment has been included in Appendix A.

Wastewater Management

FMG Engineering has undertaken an analysis of the wastewater which will be generated from the proposed development (including the Hotel, perfumery and Golf Course facilities) in accordance with the SA Health and WSAA code requirements. This analysis has assessed the volume of sludge accumulated on an annual basis, and the maximum daily effluent flow during a full capacity event such as a function. This value is currently estimated as 51,630 L per day, conservatively taken as 60,000L per day for the purpose of sizing balance tanks and pumping arrangements.

The wastewater generated from the development will be stored within a balance tank with sufficient storage to cater for a power failure period of 1 day, totalling 120,000 L. Effluent from this balance tank will be pumped towards an existing Adelaide Hills Council pump station (Stirling Catchment PS2) which is located within the Golflinks Road Reserve, which shares a boundary adjacent the subject site to the south. This pump station elevates wastewater to ultimately discharge into the SA Water Heathfield Wastewater Treatment Plant (WWTP).

FMG has liaised with Adelaide Hills Council who have advised the existing capacity and pump sizes of the PS2 pump station. Using this information FMG has nominated a new pump flow rate specification (2.6 L/s) to replace the existing pumps (1.5L /s) and provide supplementary emergency storage which will ensure the pump station remains compliant with WSA-04 Sewage Pumping Station Code of Australia. The proposed peak flow within the rising main will remain under 1.5m/s and hence an upgrade of the rising main itself is not necessary.

This approach has been reviewed by the Adelaide Hills Council and preliminary endorsement has been provided by written email which has been included as an appendix to this report.

SA Water was initially contacted in August 2023 when Council supplied preliminary endorsement of the approach, however have been unable to resource the network analysis to confirm additional flows will be able to be received by their sewer reticulation system, and ultimately the Heathfield wastewater treatment plant. FMG will continue to liaise with SA Water to seek confirmation this can be accommodated, however in our experience and anecdotal conversations with SA Water, it seems unlikely that there will be a scenario where additional flows cannot be incorporated into the network, with the only unknown being whether any external augmentation will be required.

Full design calculations, and correspondence with Adelaide Hills Council has been included in Appendix B.

Stormwater

The majority of existing buildings which affect water on site consists of a number of small golf facility buildings (referred to here within as the clubhouse), associated asphalt hardstand for carparking and deliveries, and the perfumery, which is located discretely away from the clubhouse. These buildings are generally located in the location of future development on the site.

To the north and north-east of the existing clubhouse (which coincides with the future hotel location), Cox's Creek can be observed, along with a man made dam which harvests runoff from the northern side of the Cox's Creek and is used for irrigation of the golf course. No works or modifications are proposed to the existing dam or golf course irrigation methods.

1% AEP flood levels within Cox's Creek have been estimated on a high level basis, with results indicating a maximum flow depth of 2.5m from the invert of Cox's Creek. The lowest Finished Floor Level (FFL) within the development is located approximately 5.5m above the invert of the adjacent watercourse, ensuring a minimum freeboard in the order of 3m. This freeboard is sufficiently large enough to mitigate the need for

further studies of the watercourse or flooding. No anecdotal reports of flooding of the current clubhouse buildings were reported by the asset owners.

Cox's Creek runs through the site, flowing in a south easterly direction. Generally, this is located at the low point of the entire golf course site, with smaller tributaries flowing into Cox's Creek. All runoff from the existing buildings flow into Cox's Creek, through a series of formal and informal flow paths. Drainage for the minor system consists of roof drainage, stormwater inlet pits and pipes which can be observed on site and in aerial imagery, but condition, capacity and alignment are not well documented, and assumed to be beyond useful life. To the south of the existing buildings, an upstream catchment of approximately 6ha is observed, and is generally funnelled around the east and west of the clubhouse buildings informally under current conditions.

Under the proposed development, runoff from upstream catchments will be safely routed around the east and west of the proposed building, mimicking existing conditions and protecting the development from inundation. Runoff intercepted by the roof area will be harvested for reuse as outlined within the Water Balance section of this report. Runoff captured at surface level within the hotel will be collected into a minor stormwater pit and pipe network fitted with gross pollutant intercepting baskets, or conveyed via overland flow during a major storm event, towards a stormwater basin located adjacent Cox's Creek. Within this basin a tertiary level water quality improvement will be achieved through use of a bioretention raingarden capable of treating at least the volume of runoff generated by the 4EY ARI in accordance with the EPA and Water Sensitive SA best practice guidelines.

Stormwater collected into the basin will also be detained to ensure post-development peak runoff does not exceed the pre-development peak runoff figures for the minor and major storm respectively. The detention volume held within this basin during the 1% AEP storm event is estimated to be in the order of 150m^3. Should further investigations determine this basin is required to be enlarged, sufficient room exists along the length of Cox's creek to increase the basin size. The basin is likely to be nominated beyond the 1% AEP flood level, however could be designed to be adequately protected within the floodway if required.

All wastewater infrastructure, general waste infrastructure and equipment storage facilities will be nominated within the footprint of the proposed hotel facility, which will be at or above the minimum FFL of 419.80mAHD, and adequately protected from upstream catchments which will be safely diverted around or away from the building along existing overland flow routes.

The detailed stormwater management plan can be found within Appendix C where further calculations are provided.

A review of SARIG mapping suggests a depth to groundwater in the order of 5-10m throughout the subject site. No works are proposed which will affect groundwater, however groundwater may be encountered during construction depending on proposed footing systems.

Conclusion

It is the conclusion of this report that the proposed works can be suitably designed and developed to holistically manage water both on site and within the surrounding catchment to mitigate negative effects on the environment. This assessment has been undertaken with consideration to the EPA, SA Health and WSAA code requirements, along with best practices for stormwater management.

This report will be updated upon receipt of final approvals for proposed wastewater management solutions when received from authorities.

Appendix A

Dsquared Sustainability Report

dsquared

Mount Lofty Golf Estate

Sustainability Strategy Report

D Squared Consulting Pty Ltd
Trading as dsquared
ACN 159 612 067
ABN 38 159 612 067

Suite 5, 241 Pirie Street
Adelaide SA 5000
T: 0404 568 053
E: jarrad@dsquaredconsulting.com.au
W: www.dsquaredconsulting.com.au

Project Number: 2623

Issue	Date	Change	Checked	Approved
01	07/09/2022	Development Report Issue	JB	DD
02	03/03/2024	Minor updates to suit revised Master Plan	JB	DD

Our vision is to think beyond the square.

Our mission is to reduce the impact on the environment of our client's actions by providing innovative solutions, challenging perceived thinking, and pushing the boundaries of achievement whilst using all resources in a sustainable way.

We confirm that all work has been undertaken in accordance with our ISO 9001 accredited quality management system.

Acknowledgement of country

The dsquared team wish to acknowledge the Traditional Custodians of all country throughout Australia, and their cultural, spiritual, physical, and emotional connection with their land, waters, and community. We pay our respects to all Elders past, present, and emerging.

Contents

1 Introduction

1.1 Introduction

This report presents the Sustainability Strategies and Ecologically Sustainable Design (ESD) initiatives proposed for the Mount Lofty Golf Estate development, which will reduce the development's impact on the environment in both construction and operation.

The proposed development has been designed with a holistic approach to ESD, creating an exemplar environment for all users including visitors, guests, and staff, while minimising energy use and greenhouse gas emissions.

This report follows the development of the master plan and building designs by the design team led by R-Architecture. Computer building simulation design techniques have been employed to inform the design initiatives and to assess the sustainability performance of the built form.

1.2 Strategy

The sustainability strategy and outcomes proposed are summarised as follows:

2 Performance

2.1 Green Star certification

The project is registered with the Green Building Council of Australia to obtain a certified Green Star As-Built rating using the new Green Star Buildings v1 rating tool, which is the GBCA's next-generation rating tool replacing the previous 'Design and As-Built v1.3' tool.

The project is targeting a 5 Star outcome under the GBCA's new Buildings v1 rating tool. The GBCA defines 5 Stars as 'Australian Excellence' in sustainable building design.

Obtaining a third-party certified Green Star rating acts as a verification method for the project's ESD design initiatives and modelled performance outcomes. This approach will ensure ESD remains a core part of the project scope throughout the detailed design and construction phases.

2.2 Energy

The development is being designed and will be constructed to meet the energy efficiency requirements of the Green Building Council of Australia's Green Star Buildings v1 rating tool, which are as follows:

- The development will achieve at least 10% better energy and greenhouse gas emissions performance compared with a NCC / BCA 2019 deemed-to-satisfy reference case; and
- The façade and building fabric will exceed the NCC / BCA 2019 deemed-to-satisfy requirements for energy efficiency and thermal performance.

Preliminary modelling of the proposed concept design indicates that the development's **energy consumption will be 25% lower** than a NCC 2019 deemed-to-satisfy reference case, and its **carbon emissions from energy use will be 18% lower**. Refer to section 3 for a list of energy efficiency initiatives which will contribute to achieving these outcomes.

	Reference Building (NCC 2019 code compliant)	Mount Lofty Golf Estate	Improvement
Energy use (MJ p.a.)	3,412,264	2,557,868	25%
CO_2 emissions (kg CO_2e p.a.)	365,214	298,418	18%

Energy modelled performance summary

	Reference Building (NCC 2019 code compliant)			Mount Lofty Golf Estate		
	Electricity kWh p.a.	Gas MJ p.a.	CO_2 emissions kg CO_2e p.a.	Electricity kWh p.a.	Gas MJ p.a.	CO_2 emissions kg CO_2e p.a.
Hotel	375,681	443,790	185,390	387,452	0	162,730
Facilities Building	404,465	159,948	179,824	323,067	0	135,688
Total	**780,146**	**603,738**	**365,214**	**710,519**	**0**	**298,418**

Energy modelled performance results

2.3 Carbon emissions

The development will be all-electric and will not use fossil fuels (natural gas) for heating, cooling, or hot water services, promoting the transition to 100% renewable energy from off-site and on-site sources.

20% of the development's annual electrical demand will be supplied by on-site renewable energy via a rooftop solar PV system.

A Zero Carbon Action Plan will be prepared and will include strategies for how the project will achieve net zero carbon emissions in operation. This includes strategies for phasing-out and eliminating all fossil fuels from the development and transitioning away from petrol- and diesel-powered golf carts and grounds maintenance vehicles and equipment.

2.4 Daylight

All hotel suites and public facilities (golf club, restaurant, and function rooms) have access to daylight in accordance with Green Star standards.

The daylight access has been verified using IES Virtual Environment building computer simulation software, with modelled results as follows. Sample plots from the daylight modelling are provided in Appendix A.

	Occupied floor area (sqm)	Compliant area (sqm) *(Note 1)*	Compliant % *(Note 2)*	Green Star result
Facilities Building	1,802	993	55%	Complies
Hotel Building	3,084	1,488	48%	Complies
Whole development	**4,886**	**2,481**	**51%**	**1 out of 2 points achieved**

Daylight modelling results

Note 1: Compliance target is a minimum of 160 lux of daylight achieved during >80% of daytime hours.
Note 2: Green Star targets are 40% compliant area for 1 point, or 60% for 2 points.

Refer also to Appendix A for sample daylight modelling plots.

2.5 Water

The development will achieve at least a 10% reduction in potable water use when compared to a reference building in accordance with the Green Star Buildings v1 rating tool requirements.

Preliminary water balance modelling indicates the development will achieve a 33% reduction in potable water demand when compared with a 'standard practice' reference case as defined by the Green Building Council of Australia. This exceeds Green Star Water Use requirements under the Buildings v1 rating tool.

A 50 kL rainwater storage tank will be provided and harvest rainwater for landscape irrigation, laundry services, and washdown of bin rooms and golf carts, which will contribute 13% of the buildings' total annual water demands, or 25% of the buildings' non-potable water demands.

	Standard practice	Mount Lofty Golf Estate
Total water demand (kL p.a.)	6,380	4,884
Rainwater contribution (kL p.a.)	Nil	639 (13% of demand)
Resultant potable water demand (kL p.a.)	6,380	4,245
Improvement achieved	-	33%

Water modelling results

3 Initiatives

3.1 Passive Design

The following passive design features are included:

1. Buildings are oriented north which captures free heating from the winter sun. External shade elements and balconies provide shade protection from the summer sun.
2. The building form, façade shading elements, and glazing system specifications have been informed by energy performance modelling and computer simulation techniques.
3. High performance double-glazed facades are provided throughout the development. Glass systems' solar heat gain coefficients (SHGCs) have been optimised for each building type depending on solar exposure, to provide an optimum balance between summer and winter comfort.

   Façade glazing systems will meet the following performance specifications.

	U-value Whole of system $W/m^2.K$	Solar Heat Gain Coefficient (SHGC)	Visible Light Transmittance (VLT)	Glazing system type
Hotel Building	3.2 or less	0.40 or less	45% or higher	Double-glazed Neutral glass with low-E performance coating
Facilities Building	3.2 or less	0.40 or less	45% or higher	Double-glazed Neutral glass with low-E performance coating

Façade glazing performance specifications

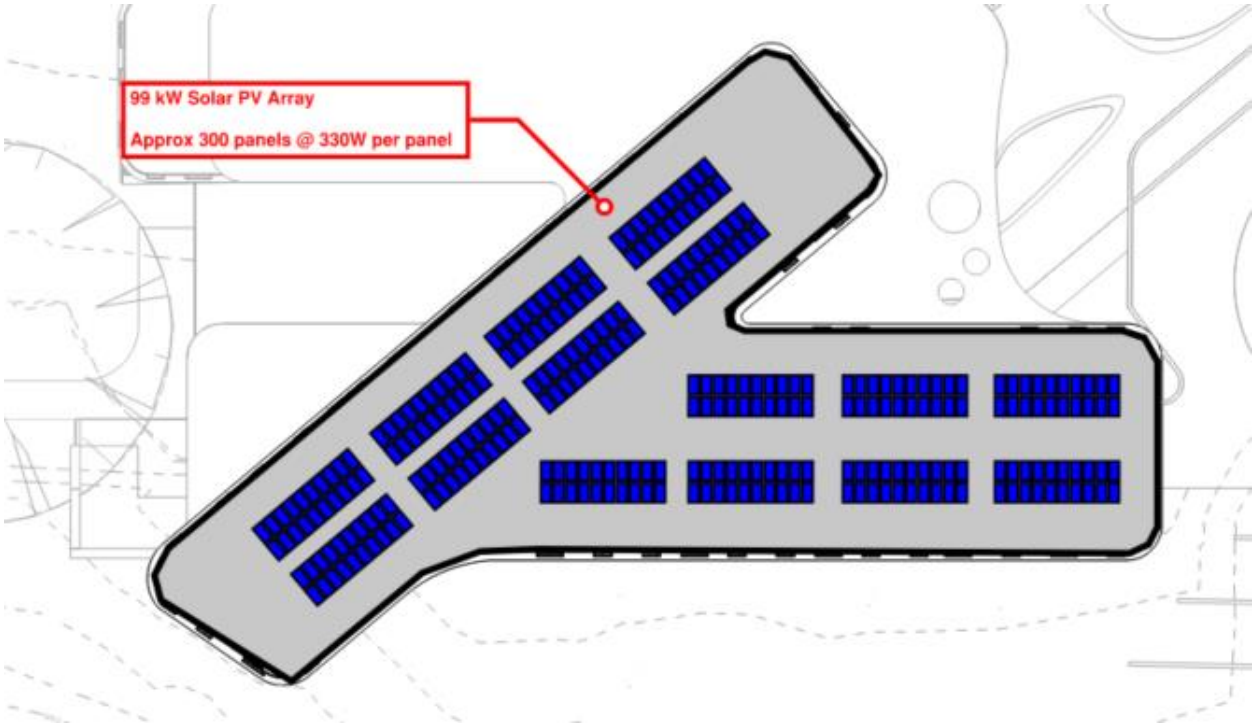
4. Natural ventilation is available in all hotel rooms and the gallery/café space, thereby reducing mechanical cooling demands.
5. The external façade will be subject to air leakage pressure testing to ATTMA standards, and the façade supplier required to meet prescribed air leakage rates as per GBCA / Green Star Standards. As well as significantly reducing the air conditioning energy consumption, this will also improve the indoor air quality, particularly during high external air pressure conditions.
6. Passive cooling from green roof, façade planters, and green landscaping around the buildings. Water transpiration from the plants and landscaping provides a natural cooling effect.
7. Light-coloured roof finishes and landscaping finishes will minimise heat absorption and reduce the heat island effect in accordance with Green Star standards. Roof finishes will have a solar reflective index (SRI) of minimum 82 and hardscaping elements at ground level will have a solar reflective index (SRI) of minimum 39.
8. Daylight is provided to all hotel rooms and indoor public spaces (Restaurant, Function Room, Golf Club and Sports Bar) which reduces artificial lighting demand.

3.2 Energy

The following Energy initiatives are included:

1. The buildings are fully electrified including cooling, heating, hot water, and cooking. No fossil fuels / natural gas services are provided to the buildings.
2. A rooftop solar PV array provides renewable energy to power the building. Energy balance modelling demonstrates the system will provide at least 20% of the site's annual energy demand.

   A solar PV layout sketch is shown as follows (refer also to Appendix B).



Proposed solar PV array

3. HVAC systems comprise high-efficiency air-cooled heat pump thermal plant for heat rejection and heat injection. All central plant is contained within distinct plant enclosures which minimises acoustic impacts and visual obtrusiveness of plant equipment.
   - A ground-loop heat exchange system is being explored as an alternative heat rejection strategy, in collaboration with specialist consultants GeoExchange. This option will further improve heating and cooling system efficiencies and will provide a natural and renewable source of thermal energy from the ground.
4. A shared condenser water loop system will provide heating and cooling energy to the Hotel and Facilities buildings using an efficient centralised approach.
5. Heat recovery between HVAC and domestic hot water systems via the shared condenser water loop system. In summer when HVAC systems are in cooling mode and rejecting heat from the occupied spaces into the condenser water loop, the rejected heat energy will be recovered and used to heat water for showering and other domestic hot water uses.
6. High-efficiency electric heat pump domestic hot water plant. System efficiency rating (Coefficient of Performance) will be in excess of 300% efficient.

7. All hotel rooms have access to natural ventilation via private balconies. Air-conditioning will shut down automatically whenever the balcony door is left open, to save energy when guests choose to open up their room and allow natural ventilation and external breezes to enter.
8. Air-conditioning and lighting in hotel rooms will switch off automatically when rooms are unoccupied.
9. Economy cycle HVAC mode provides free-cooling in public spaces (Restaurant, Function Room, Golf Club and Sports Bar).
10. Demand-controlled ventilation including indoor CO_2 monitoring will reduce thermal loads in public spaces (Restaurant, Function Room, Golf Club and Sports Bar) whilst maintaining a high indoor air quality at all times.
11. Automatic BMS controls for retail and commercial HVAC systems with distinct thermal zoning to suit the comfort needs of individual areas.
12. Energy efficient LED lighting throughout.
13. Energy metering and sub-metering of distinct load centres, connected to a fully integrated BMS.

3.3 Water

The following Water initiatives are included:

1. A rainwater capture and reuse system will provide rainwater for landscape irrigation, laundry services, and washdown of golf carts/waste storage rooms. A 50 kL rainwater storage tank will contribute 13% of the development's total water demand / 25% of non-potable water demand.
2. Landscaping comprises native and drought-tolerant planting species which have low irrigation water demands.
3. Water efficient fittings with the following minimum WELS ratings:
    - Taps 6 Stars
    - WCs 4 Stars
    - Urinals 4 Stars
    - Showers 4 Stars
4. Selecting water-efficient washing machines and dishwashers which are within one Star of the highest available water rating.
5. No water will be consumed for HVAC heat rejection purposes, i.e. no cooling towers. All HVAC heat rejection will be air-cooled or via ground heat exchange.
6. Stormwater systems designed such that pre-development peak stormwater outflows will not be exceeded, and all stormwater run-off will be appropriately treated before discharge to the local waterways. The use of stormwater detention tanks will contribute to meeting these outcomes.

3.4 Waste

The following Waste initiatives are included:

1. Construction waste will be minimised through efficient design techniques including standardisation and off-site pre-fabrication wherever practicable. A minimum 90% diversion from landfill rate will be targeted.
2. Separate bins will be provided for organic waste, recyclable waste, and general waste, to encourage and facilitate diversion of waste from landfill.

3. Waste storage facilities for the collection and disposal of general, recyclable, organic waste, and bulky waste, which will be separated on site to facilitate ease of disposal for recycling.
4. A site-specific Operational Waste Management Plan will be developed in accordance with Green Building Council of Australia guidelines for best practice waste management. The Plan will inform the design of waste storage and handling facilities, waste bin provisions, and signage requirements.

3.5 Indoor Environment Quality

The following Indoor Environment Quality initiatives are included:

1. All hotel suites have access to natural ventilation via private balconies.
2. Mechanical ventilation will be provided to hotel rooms when balcony doors are closed, and to all public spaces. Outside air supplies will be in accordance with Green Star and AS1668.2 minimum requirements.
3. Daylight access is provided in all hotel suites and public spaces (Restaurant, Function Room, Golf Club and Sports Bar) in accordance with Green Star criteria (minimum 160 lux of daylight during at least 80% of daytime hours).
4. Glare from sunlight is managed through a combination of external shade elements, internal blinds, and building orientation (north-facing aspect).
5. Views to the surrounding natural landscapes are available in all occupied spaces.
6. The use of low VOC and low formaldehyde paints, sealants, adhesives, carpets, coverings, and furniture.
7. Acoustic performance in occupied spaces will be in accordance with Green Star and AS 2107 standards. Façade systems, acoustic treatments to internal ceilings and walls, and services plant will be designed to meet Green Star acoustic standards. This includes background noise levels, reverberation levels, and acoustic privacy requirements.
8. Air conditioning systems will be centralised, concealed, and located in acoustically sheltered plant areas, such that external noise will not impact on the amenity of guests, customers, or staff.

3.6 Construction

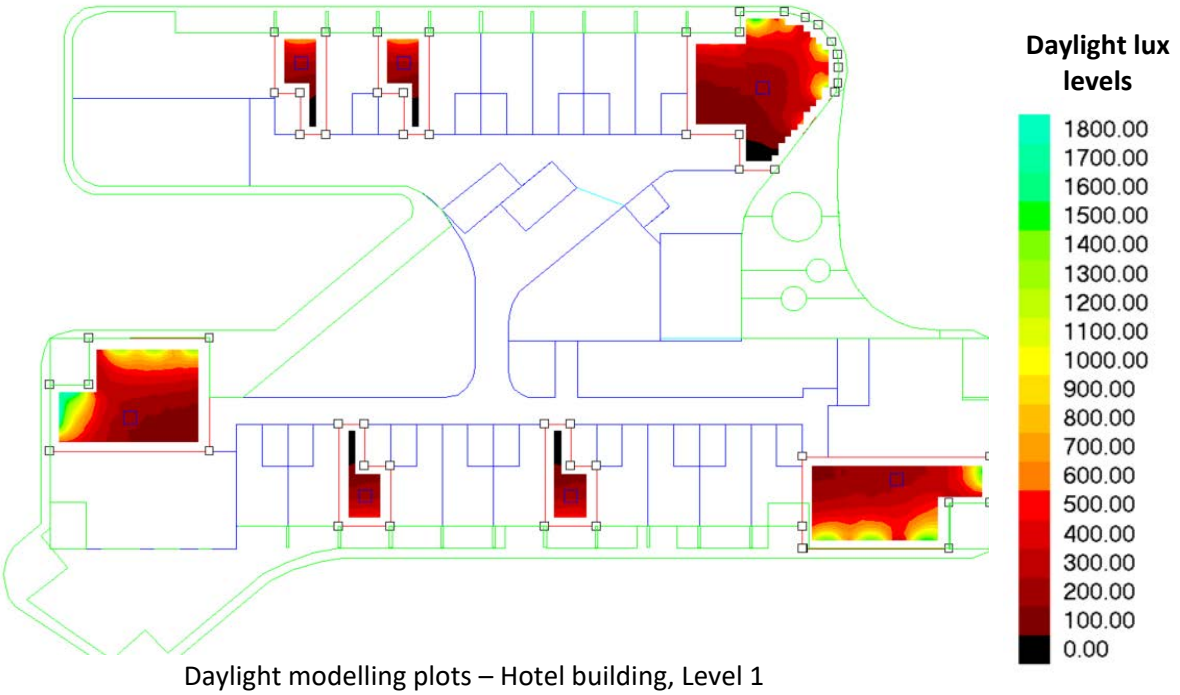
The following Construction initiatives are included:

1. Embodied carbon of construction (i.e. ‘upfront emissions’) will be at least 10% lower than a reference case, in line with Green Star requirements.
2. Refrigerants with low Global Warming Potential (GWP) ratings will be specified for central thermal plant and hot water plant.
3. Building materials which are made from recycled materials e.g. fly ash in concrete, reinforcement bar, recycled content floor coverings, and recycled insulation products, wherever viable.
4. Head contractor will be required to implement an Environmental Management Plan compliant with Green Star standards.
5. Using off site pre-fabrication techniques to reduce on site construction time, waste, and greenhouse gas emissions, wherever practicable.
6. Locally sourced materials and labour will be sought wherever viable.
7. Using Building Information Modelling (BIM) as a design and construction management tool to minimise on-site clashes and abortive/wasteful work.

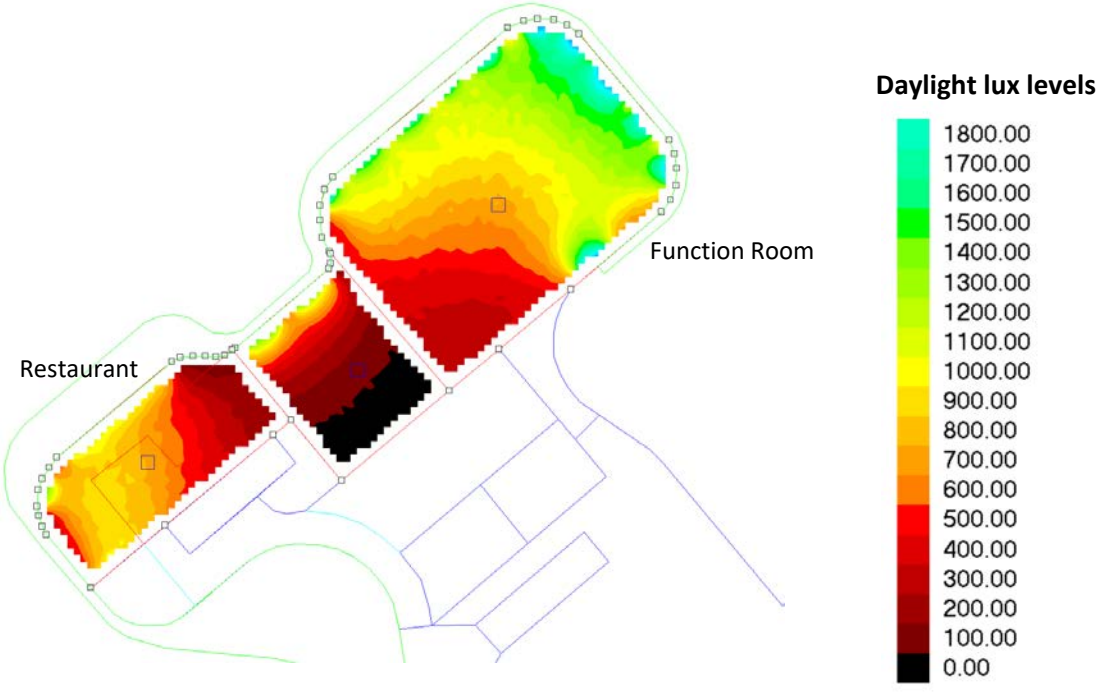
3.7 Community and Social Sustainability

The following social sustainability initiatives are included:

1. The development includes a Wellness Centre, Gym, and extensive common outdoor amenity space.
2. The Facilities building is designed and located as a shared gathering point for various users and visitors including golf players, hotel patrons, restaurant customers, gym users, and Function Room guests. Shared outdoor terraces encourage interaction and community between the various user groups.
3. A communal creche / childcare is provided in the Hotel building.
4. All public spaces have good access to daylight, ventilation, and views to the surrounding landscapes.
5. Heritage listed Scent Factory building from the historic Mount Lofty Flower Farm will be restored as part of the development works, and incorporated as an attraction feature for guests and visitors to the development.
6. Local ecology and vegetation will be featured and integrated into the development.

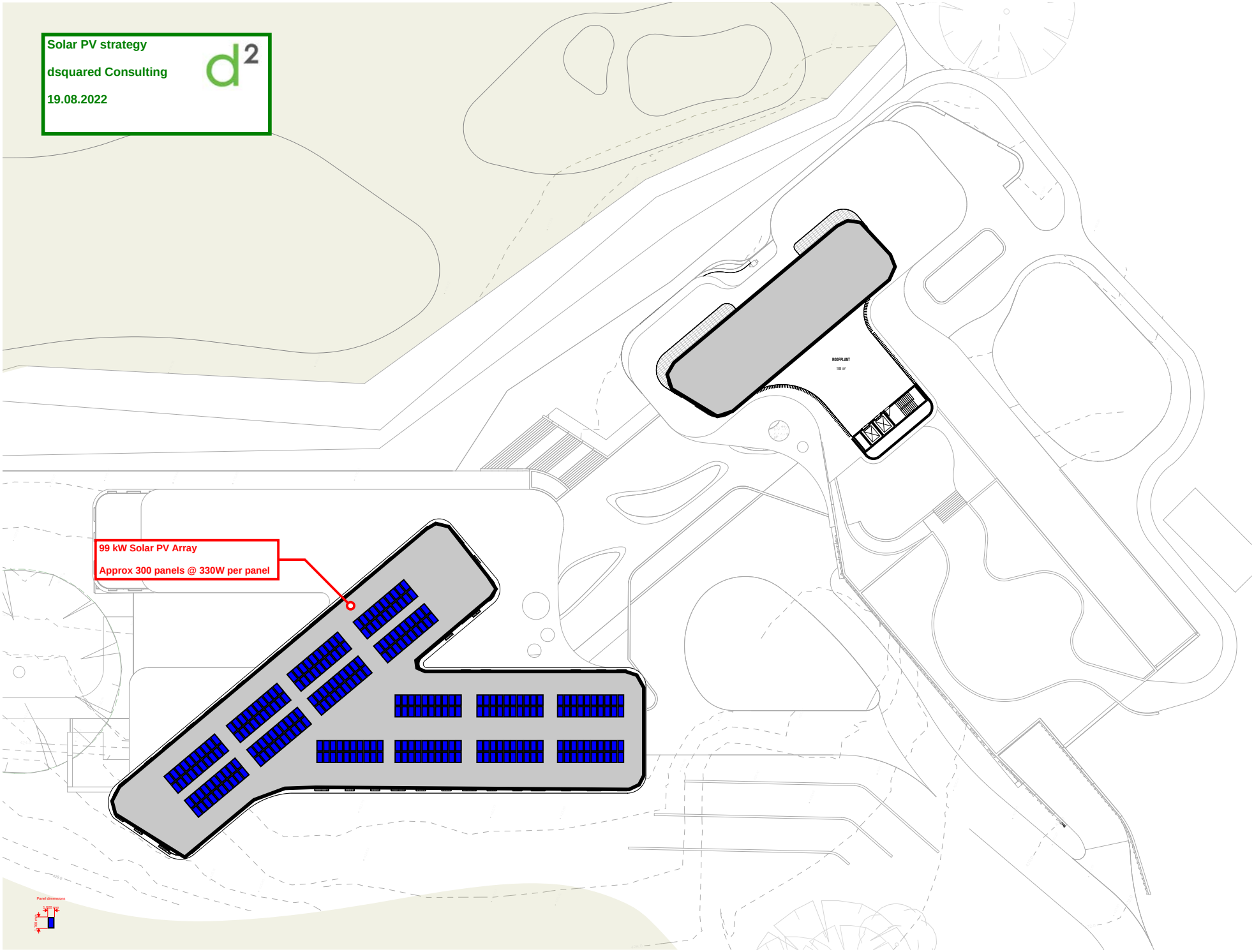


Daylight modelling plots – Hotel building, Level 1



Daylight modelling plots – Facilities building, Level 1

Appendix B Solar PV sketch layout



HOTEL DEVELOPMENT SUMMARY

35 GOLFLINKS RD, STIRLING, SA.

DEVELOPMENT SITE AREA	
HOTEL	
SUITES	56 SUITES
SERVICED APARTMENT - 2 BED	15 APARTMENTS
SERVICED APARTMENT - 3 BED	15 APARTMENTS
PENTHOUSE APARTMENTS	2 APARTMENTS
TOTAL	88 UNITS
PODS	
TOTAL	20 UNITS - 1 BEDROOM
PARKING	
CAR SPACES - MAIN BUILDING	200 SPACES
CAR SPACES - PERFUMERY OVERFLOW	50 SPACES

AREA SUMMARY

AREA TYPE	AREA
FACILITIES	
BACK OF HOUSE / SERV. - LG	1039 m²
BACK OF HOUSE / SERV. - LVL 1	233 m²
GROUND FLOOR - F&B	325 m²
GROUND FLOOR - GOLF	429 m²
LEVEL 1	1393 m²
LEVEL 2	570 m²
LEVEL 3	447 m²
LOWER GROUND	937 m²
SERVICES CORE-L3	54 m²
	5426 m²
FACILITIES CARPARK	
FIRST FLOOR CARPARK	1461 m²
GROUD FLOOR CARPARK	1886 m²
LOADING BAY	67 m²
	3413 m²
HOTEL	
GROUND FLOOR	1095 m²
LEVEL 1	2334 m²
LEVEL 2	1659 m²
LEVEL 3	1921 m²
LOWER GROUND	1149 m²
	8157 m²
HOTEL CARPARK	
HOTEL CARPARK	1352 m²
LOWER GROUND CARPARK	1515 m²
	2867 m²
Grand total: 19	19864 m²

No.	Description	Date
A	CONSULTANT REVIEW	20.10.21
B	DA SUBMISSION	01.12.21

PROJECT
MOUNT LOFT GOLF ESTATE

ADDRESS
35 GOLF LINKS ROAD, STIRLING SA 5152

Scale@A1	1:250
Scale@A3	1:500
Date:	01.12.21
Drawn:	Author

SHEET NAME
LEVEL 3 PLAN

SHEET NO.
TP06

REVISION:
B

PRELIMINARY *NOT FOR CONSTRUCTION*

r architecture
architecture | interior design | urban design | landscape
ph: 8362 0328 e: studio@rarchitecture.com.au

Appendix B

Preliminary Wastewater Management Plan
Council Endorsement of preliminary plan

ENGINEERING

Engineering your success.

ADELAIDE
MELBOURNE
SYDNEY

Ref: 282604 / S53897
28/03/2023

Re: Wastewater proposal at Mount Lofty Golf Estate

FMG Engineering has been engaged to prepare a plan for managing wastewater generated by the proposed development at Mount Lofty Golf Estate.

The subject site is located within the Adelaide Hills Council (Council), which operates and maintains a number of community waste management schemes (CWMS) to service areas which cannot drain sewer via gravity to SA Water infrastructure, as is the case with the subject development site. Adjacent to the site, no SA Water infrastructure is present, however a Council owned and operated pump station is present on the corner of Old Carey Gully Road, and Spring Gully Road.

FMG Engineering has presented a preliminary wastewater management plan to Council that has been endorsed and supported which can be summarised as;

- Collection of wastewater from all wastewater generating facilities into septic tanks which are desludged on a yearly basis
- Residual effluent from the septic collection will be conveyed into a holding tank, and pumped to the existing Council pump station on Golflinks Road at nominally 1.4 L/s.
- Council's existing pump station will be upgraded from the current 1.5L/s capacity, to a new pump capacity of 2.6L/s within the existing rising main. Additionally, a further 20m^3 of emergency storage will be provided below ground at the Council pump station.

On the above in principal support, FMG has prepared preliminary wastewater calculations in accordance with SA Health and WSAA code requirements which provides indicative minimum sizing of septic tanks. Final details will be confirmed to the satisfaction of Adelaide Hills Council and SA Water during detailed design. A schematic has also been attached for reference.

This letter outlines a feasible plan for managing wastewater which can be assessed for planning purposes, with final details to be confirmed and approved by SA Health and referred to Adelaide Hills Council as the approving authorities.

Yours sincerely

Jordan Colbert

National Civil Manager
FMG Engineering

Attached: Wastewater calculations
Schematic plan

Desludge Rate 1 years

Accommodation

Sludge/Scum Rate (S)	48	L/person/year
Daily Flow (DF):	100	L/person/day

Non-resident staff

Sludge/Scum Rate (S)	25	L/person/year
Daily Flow (DF):	30	L/person/day

Function centre (Seminar/Conference)

Sludge/Scum Rate (S)	35	L/person/year
Daily Flow (DF):	40	L/person/day

Restaurant

Sludge/Scum Rate (S)	35	L/person/year
Daily Flow (DF):	20	L/person/day

Sports Bar

Sludge/Scum Rate (S)	5	L/person/year
Daily Flow (DF):	10	L/person/day

Gallery Café

Sludge/Scum Rate (S)	30	L/person/year
Daily Flow (DF):	10	L/person/day

Perfumery Restaurant

Sludge/Scum Rate (S)	35	L/person/year
Daily Flow (DF):	20	L/person/day

Golf course facilites included in numbers above

Number of single bed equivalents (P1)	Number of single bed equivalents (P2)	
305	305	45140 L

Number of staff per shift x number of shifts (I	Number of staff per shift x number of shifts (P2)	
101	101	5555 L

Total seating capacity (P1)	Total seating capacity (P2)	
270	270	20250 L

Average daily number over 7 days (P1)	Highest daily number over 7 days (P2)	
50	100	3750 L

Average daily number over 7 days (P1)	Highest daily number over 7 days (P2)	
80	160	2000 L

Average daily number over 7 days (P1)	Highest daily number over 7 days (P2)	
85	170	4250 L

Average daily number over 7 days (P1)	Highest daily number over 7 days (P2)	
50	100	3750 L

Sludge	39515	L/year		
Total Daily Flow	51630	L	**Tank Size**	**84695** L
			(SxP1xY) + (PSxDF)	

All commercial kitchens are to have grease arrestors fitted and sized using SA Water guidelines

Desluge rate to be every **1 years**

FMG ENGINEERING	Project: Stirling Golf Club, 35 Golflinks Road, STIRLING, SA 5152				Job Ref.: 282604 - S53897	
	Section: Balance Tank Calculations				Sheet no./rev.: 1 / D	
	Calc. by: Jarrad Barford	Date: 23/03/2023	Chk'd by: Jordan Colbert	Date: 23/03/2023	App'd by:	Date:

Internal wastewater pump and holding tank design

As per Wastewater Calculations total maximum daily effluent flow is 51,630L.

To allow for an additional buffer round this volume up to 60,000L.

Due to the size of the development it is assumed that backup generators will be installed on site. Allow for a worst-case power failure period of 1 day.

Balance tank to be 120,000L in size.

This volume is to be completely emptied before the next peak cycle occurs. This is assumed to be the following day, i.e. subsequent events. On this basis the total tank volume must be empited within 24 hrs.

120000 L/ (24x60x60) = 1.389L/s ≈ 1.4L/s

Two pumps of pump rate 1.4L/s shall be provided, the two pumps shall be configured to automatically alternate as the duty pump.

Downstream receiving pump station capacity

Adelaide Hills Council has provided a series of calculations outlining the current capacity of the Stirling STEDS network;

- We understand there are two pump stations as part of the Stirling STEDS network;
  - PS1 on Golf Links Road (at the eastern end of Golflinks Road) which pumps effluent towards PS2
  - PS2 at the intersection of Golf Links Road, and Golf Links Close, which receives flow from PS1, and is then assumed to pump onwards to SA Water infrastructure outside of AHC's control.
- To mitigate upgrading two pump stations, we have revised our proposal to show the rising main to be connected to PS2
- Due to the increased inflow rate (an additional 1.4 L/s as per the attached balance tank sizing calculations sheet, the pumps within PS2 will need to be upgraded. Our review of the calculations package suggests a new pump capacity of 2.6L/s may be appropriate, as this keeps velocities within the 50mm rising main to <1.5m/s and approximately 80m of head loss.
- The increased inflow results in a deficiency in emergency storage at PS2. As a result, an additional 20m^3 of supplementary emergency storage is proposed to augment to the existing pump station. This will take the form of a concrete chamber below ground adjacent the pump station which will be linked. All storage will be provided between the invert and high level alarm elevation. Provision of this additional storage ensures an emergency storage % of ADF of 50.7% is achieved, aligning with the WSAA requirements for >50% emergency storage.

Stirling STEDS - Pump Stations Summary

							Entire Network power failure			Local station failure			
Pump Station	Location	Pump discharge (L/s)	Peak Inflow (L/s)	Pump Rate > Peak Inflow	Pump rate achieves % of peak inflow	Storage above HLA (m^3)	Storage at ADF (hours)	> 5 hours (20%) storage @ ADF?	emergency storage % of ADF	Storage at ADF (hours)	> 5 hours (20%) storage @ ADF?	emergency storage % of ADF	Comment
PS1	End of Golf Links Road	1.000	0.221	Yes	452%	6.795	25.60	Yes	106.7%	25.60	Yes	106.7%	
PS2	Golf Links Road near Golf Links Close	1.500	0.953	Yes	157%	14.379	16.38	Yes	68.2%	12.58	Yes	52.4%	

Council capacity summary under Existing Conditions at the Stirling STEDS pump network

Stirling STEDS - Pump Stations Summary

							Entire Network power failure			Local station failure			
Pump Station	Location	Pump discharge (L/s)	Peak Inflow (L/s)	Pump Rate > Peak Inflow	Pump rate achieves % of peak inflow	Storage above HLA (m^3)	Storage at ADF (hours)	> 5 hours (20%) storage @ ADF?	emergency storage % of ADF	Storage at ADF (hours)	> 5 hours (20%) storage @ ADF?	emergency storage % of ADF	Comment
PS1	End of Golf Links Road	1.000	0.221	Yes	452%	6.795	25.60	Yes	106.7%	25.60	Yes	106.7%	
PS2	Golf Links Road near Golf Links Close	2.600	2.353	Yes	111%	34.379	39.16	Yes	163.2%	12.18	Yes	50.7%	Additional 1.4L/s inflow, accordingly pump discharge has been increased to 2.6 L/s. Additional 20m3 of storage volume also to be provided at PS2 to achieve a minimum 50% emergency storage volume

Council capacity summary following connection of proposed 1.4 L/s additional inflow.

SITE MASTERPLAN

LEGEND

1. Old Carey Gully Road Access
2. Staff carpark
3. Perfumery carpark
4. Perfumery courtyard
5. Tree orchard
6. Perfumery gardens
7. Cox Creek improvements
8. Heysen trail connection
9. Stormwater quality improvement basin
10. Deck
11. Lawn terrace
12. Practice putting green
13. Tourist accommodation drop-off
14. Pedestrian concourse
15. Golflinks road main access
16. Entry Avenue
17. Emergency maintenance vehicle access only
18. Dedicated pedestrian trail

KEY

- Internal path
- Internal driveway
- Heysen trail connection
- Carpark entries
- Sewer holding tank
- Perfumery sewer tank
- Stormwater basin
- Roof rainwater drainage pipe
- Internal drainage pipe
- Overland flow direction
- Gravity sewer from hotel
- Sewer rising main to pump station
- Perfumery gravity sewer
- Existing rising main to pump station
- Existing rising main to treatment plant

ECOLOGY

- Creek Revegetation zone
- Revegetation zone
- Trees to be removed

OLD CAREY GULLY ROAD

HEYSEN TRAIL

PERFUMERY

COX CREEK

TOURIST ACCOMMODATION

35M BUFFER

35M BUFFER

GOLFLINKS ROAD

GOLFLINKS ROAD

MANNA GUM AVE

TO S.E. FREEWAY

WASTEWATER GENERATED AT PERFUMERY TO BE COLLECTED INTO SMALLER SEPTIC TANK LOCATED AT THE PERFUMERY AND THEN PUMPED TO HOLDING TANK

PROPOSED GRAVITY SEWER FROM HOTEL, AND GOLF FACILITIES TOWARDS SEPTIC TANK SIZED TO MEET SA HEALTH REQUIREMENTS.

EFFLUENT TO BE CONVEYED INTO HOLDING TANK, AND PUMPED AT APPROVED FLOW RATE VIA RISING MAIN TO EX. ADELAIDE HILLS COUNCIL PUMP STATION PS-2. HOLDING TANK, PUMP SPECIFICATION TBC IN CONJUNCTION WITH PUMP STATION UPGRADE DISCUSSIONS WITH ADELAIDE HILLS COUNCIL.

EXISTING ADELAIDE HILLS RISING MAIN CONVEYING FLOWS SOUTH TO SA WATER TREATMENT PLANT

EXISTING ADELAIDE HILLS COUNCIL STIRLING STEDS SYSTEM PUMP STATION 2 - PS2.

UPGRADE EXISTING PUMPS TO NEW PUMPS CAPABLE OF 3 L/S. NO MODIFICATION TO EMERGENCY STORAGE BELIEVED TO BE REQUIRED.

EXISTING ADELAIDE HILLS RISING MAIN PS1 TO PS2

EXISTING ADELAIDE HILLS COUNCIL PUMP STATION - PS1 .

PS1 PUMPS TO PS2

Mount Lofty Golf Estate

oxigen

1:1500 (A1), 1:3000 (A3)

0 10 25 50m

N

Jordan Colbert

From: Kim Krieg <kkrieg@ahc.sa.gov.au>
Sent: Friday, 24 March 2023 7:13 AM
To: Jordan Colbert
Cc: Ari Mudugamuwa
Subject: Stirling Golf Course Development
Attachments: RE_ MLGE - Preliminary Wastewater discussions current proposal.eml

Hi Jordan,

Thanks for the chat yesterday regarding the above development. I can confirm that Council has in principle support for the proposed development including upgrade to Council's Golflinks Rd CWMS pump station 2 infrastructure located opposite Golflinks Court, Stirling. The developer will be responsible for all augmentation charges associated with the proposed pump station 2 upgrade and must seek approval from SA Water to discharge into their infrastructure.

Once the application is lodged further discussions can take place regarding the necessary upgrade.

Kind regards

Kim

Kim Krieg (Pearson)
Community Wastewater Management System (CWMS) Technical Officer
Adelaide Hills Council

p 08 8408 0410
e kkrieg@ahc.sa.gov.au
w ahc.sa.gov.au

Visit me at: 63 Mount Barker Road, Stirling SA 5152
Postal: 63 Mount Barker Road, Stirling SA 5152

Appendix C

Stormwater Assessment Report

ENGINEERING

Stirling Golf Course

Stormwater Management Plan

JOB NUMBER:	S53897 - 275203; 282604
CLIENT:	Venture Capital Developments Pty Ltd
SITE:	Stirling Golf Club, 35 Golflinks Road, STIRLING, SA 5152
DATE:	02/04/2024
REVISION:	E

Engineering your success.

ADELAIDE
MELBOURNE
SYDNEY

Document Status

REV NO.	STATUS	AUTHOR	REVIEWER			APPROVED FOR ISSUE		
			NAME	SIGNATURE	DATE	NAME	SIGNATURE	DATE
A	For Lodgement	J Colbert	Jeremy Clapp	JHC	28.11.2021	Jordan Colbert	JTC	28.11.2021
B	For Approval	J Colbert	Jeremy Clapp	JHC	24.11.2022	Jordan Colbert	JTC	24.11.2022
C	For Approval	J Colbert	Jeremy Clapp	JHC	1.12.2022	Jordan Colbert	JTC	1.12.2022
D	For Approval	J Colbert	Jeremy Clapp	JHC	02.04.2024	Jordan Colbert	JTC	02.04.2024
E	RFI (PLUS)	G.Ashtijou	Jeremy Clapp	JHC	28.05.2024	Jeremy Clapp	JHC	28.05.2024

Table of Contents

Introduction

FMG Engineering has been engaged by Venture Capital Developments Pty Ltd to undertake a preliminary stormwater assessment and develop a preliminary Stormwater Management Plan for a proposed development of the Stirling Golf Club. The Stirling Golf Course is located in the Adelaide Hills approximately 18km south east of the Adelaide CBD between Stirling and Bridgewater and is situated on the north side of the South Eastern Freeway. T

This preliminary Stormwater Management Plan describes the assessment undertaken and addresses the requirements provided by Adelaide Hills Council's engineering and planning departments.

Site Description

The site is located at 35 Golflinks Rd, Stirling SA 5152 as shown in Figure 1. The site is bounded by Old Carey Gully Rd to the North West, Golflinks Rd to the South West and Mount George Conservation Park to the East and South East. The Golf Course is surrounded by several land use zones including Country Living, Watershed (Primary Production) and Public Purpose zones.

The Cox Creek runs through the site in a south easterly direction. The site is undulating with a general downwards slope towards the south east. The catchment area of the Cox Creek upstream of the Golf Course has been estimated using local contour data available in NatureMaps.

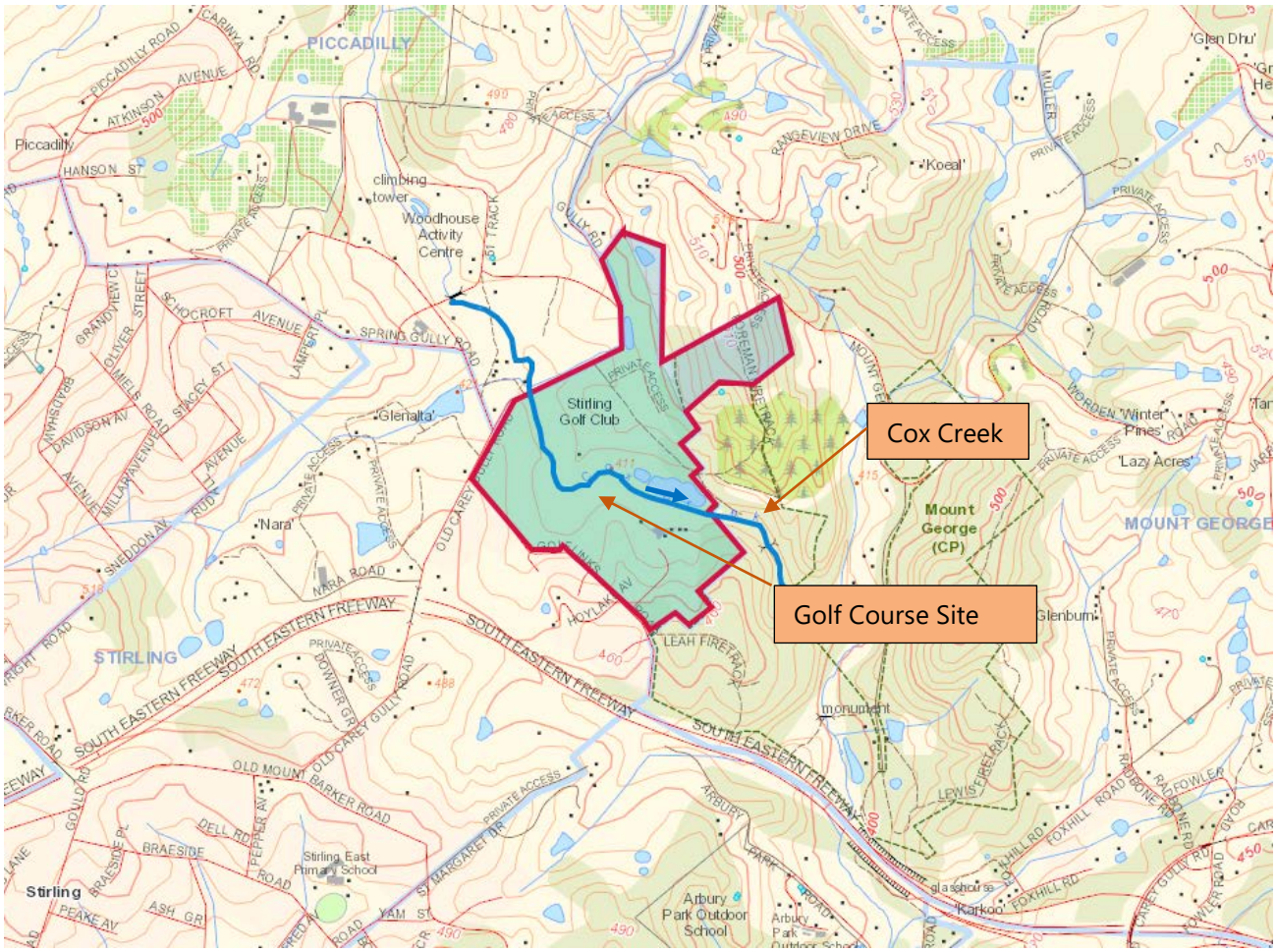


Figure 1 - Site locality plan (Nature Maps)

Proposed Development

The proposed development is for tourist accommodation and golf course and associated club facilities (ancillary bar, gymnasium and function rooms), together with landscaping, subdivision, tree and native vegetation removal. The proposed development is summarised as follows:

- Construction of a 3-5 level tourist accommodation building comprising 56 units, 15 two bedroom serviced apartments, 15 three bedroom serviced apartments and 2 penthouse serviced apartments. Together with, back of house, plant storage and maintenance areas, function room, restaurant and external terrace, sports bar, gallery and cafe and wellness centre.
- Adaptive reuse of the Local Heritage Perfumery building as a retail, cafe and multipurpose function space.
- Golf course facilities building - 2-5 level building comprising function facilities, cart storage and clubhouse, pro-shop, administration areas, gym and change rooms.
- Retention of the 18-hole golf course with improvements.
- Car Parking, access and waste management including a total of 257 car parking spaces, Including:
  - 200 formalised car parking spaces and a porte cochère (set-down/pick-up) facility at the tourist accommodation and golf club facilities building;
  - 20 spaces adjacent to the Perfumery Building accessible from Old Carey Gully Road; and
  - 37 spaces for staff only adjacent to the circulation road connecting from Old Carey Gully Road with further informal parking opportunities within the site.
- Subdivision of the land (1 into 3) allotments to formalise the areas for tourist accommodation, golf course facilities building and balance of the site for leasing purposes.
- Stormwater detention basin, creek and lake restoration activities including planting natives in the beds, erosion control works and creek crossings.
- Construction of entry wall and new entry signage at the existing Golflinks Road entry.
- New dedicated pedestrian trail adjacent Golflinks Road.

A whole of site plan is provided in the Appendix which details the proposed development.

The current building and carpark facilities situated up the hill and to the south west of the lake have a total hard surface area of approximately 5,000m^2. Preliminary measurements indicate that the proposed development buildings and carparks have a total hard surface area of approximately 8,300m^2. This increased hard surface area of 3,300m^2 represents <1% of the golf course area.

Stormwater Management

Current Site Drainage

Cox Creek enters the golf course site from the north as it passes under Old Carey Gully Road and runs through the site in a south easterly direction. The creek exits the site to the east, continues in a south easterly direction and passes under the South Eastern Freeway approximately 1,250m downstream of the site.

Preliminary investigations indicate the catchment area of Cox Creek upstream of the site exit point is approximately 2,000Ha. This catchment area includes sections of Summertown, Carey Gully, Crafers and Piccadilly and includes residential, primary production and public purpose land use areas. The approximate catchment area of Cox Creek upstream of the golf course site is shown in Figure 3.

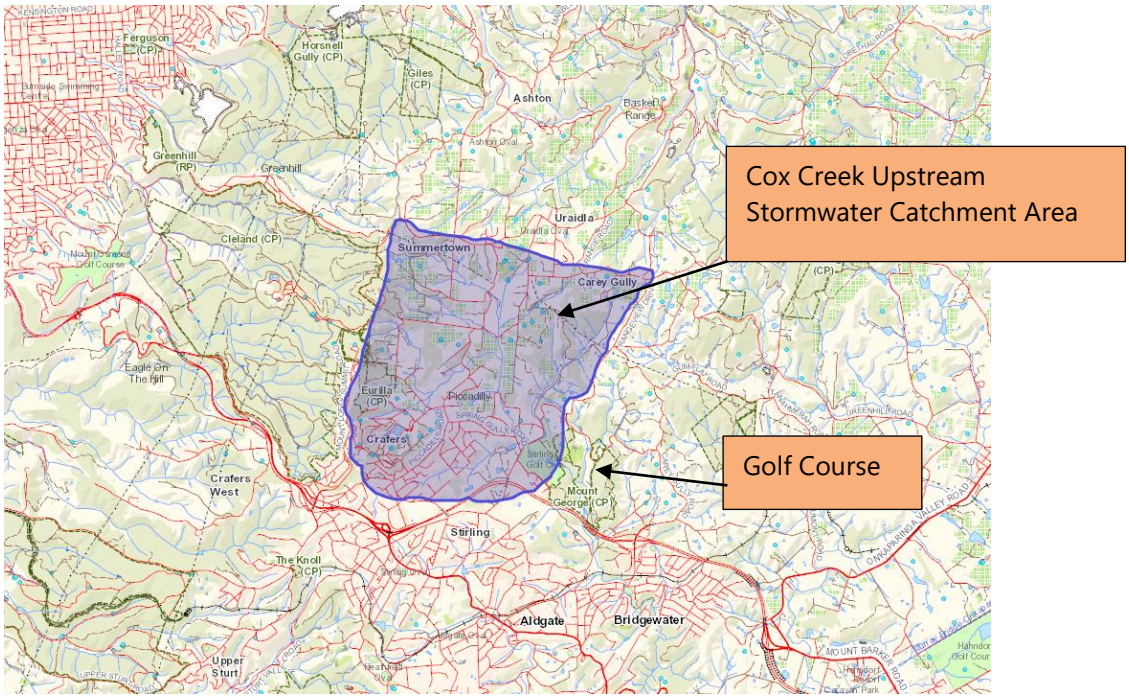


Figure 2 – Approximate Upstream Catchment Area of Cox Creek (Nature Maps)

BOM Rainfall data for Piccadilly Station 23891 indicates an average annual rainfall of 1068mm with the highest rainfalls occurring in the winter months as expected. A summary of the previous 20 years of data is provided in Table 1.

Table 1 – Piccadilly Rainfall Data Summary

Month	Mean (mm)	5th percentile (mm)	95th percentile (mm)
Jan	37.5	11.2	81
Feb	34.6	1.3	83.9
Mar	38.6	11.7	80.3
Apr	68.9	6.6	167.2
May	133.3	68.3	191.1
June	149	19.2	226.1
July	160.6	66.6	276.6
Aug	147.9	43.6	243
Sep	119.4	48.5	222.8
Oct	68.1	2.8	179.4
Nov	51.5	13.8	120.7
Dec	53.3	20.1	141.5
Annual	1068.6	933.1	1227.4

Source: BOM Rainfall Data 2001 – 2020 Piccadilly Station 23891

Stormwater Management Requirements

This stormwater management plan will address the following State Planning Commission requirements (with other items within the specialist reporting provided by others);

- Integrated Water Management Plan (IWMP);
    - Infrastructure for the storage and treatment of stormwater
    - Predicted stormwater generation volumes and details of stormwater quality improvements, including the location and sizing of the bio-retention swales and basins, anticipated quality improvements and details of any other proposed stormwater quality treatment features.
    - Whole site, upstream catchment and downstream stormwater discharge point
    - (balance of IWMP provided by others reporting)
- Demonstration of no stormwater nuisance or flooding to occur on downstream properties due to the development
- Compliance with Council and Natural Resource Management Board requirements

It is noted that a surface water management plan has been included within the Construction Environmental Management Plan (CEMP) prepared by FMG as a separate report.

Adelaide Hills Council Stormwater Drainage Design Guidelines for Submission of Engineering Plans for New Developments require the following to be considered;

- The designer ensure that the proposed development within the drainage reserves such as fences of facilities shall not obstruct the path of flows from major storm events
- The major drainage network shall have the capacity to control stormwater flows under normal and minor system blockage (50% blockage) conditions for an ARI 1 in 100 years
- The drainage system shall be designed to ensure that the landform of watercourses is stabilised and that erosion is minimised
- All dwellings must be protected from inundation during a flood of 1 in 100years ARI
- The drainage system shall be designed to ensure that flows downstream of the site are restricted to pre-development levels, unless council approves increased flows
- Underground stormwater systems designed to convey the minor 1 in 10 year ARI storm event
- Minimum 300mm freeboard to the 100 year ARI flood / ponding level

Further to the above, FMG recognises the sensitive urban environment the proposed development is located within, and following feedback from the EPA during pre-lodgment meetings, understand there to be a need for a tertiary level stormwater quality system to be implemented on site which fully complies with the South Australian EPA water quality reduction targets for runoff generated by the development;.

- 80% retention of the typical urban annual load for Total Suspended Solids (TSS)
- 60% retention of the typical urban annual load for Total Phosphorus (TP)
- 45% retention of the typical urban annual load for Total Nitrogen (TN)
- 100% retention of the typical urban annual load for Gross Pollutants (litter)

Stormwater Assessment

Proposed Development Drainage

Stormwater drainage of the golf course facilities situated to the south west and uphill of both Cox Creek and the existing dam / lake observed on site. Lake levels are managed through pumping of stormwater local storage ponds throughout the golf course, and is utilised for irrigation. Peak levels within the lake are managed via a weir which spills into Cox Creek when full.

Surface run off from the subject development area, and further upstream catchments drains into open drains associated with the carpark retaining wall and runs into entry pits and underground stormwater pipes. This runoff is currently diverted towards Cox Creek.

It is envisaged that where possible, existing drainage pits and pipes will be retained to minimise the construction impact of the development. Generally, the new stormwater pit and pipework will be laid within the building footprint and collect all rainwater runoff for storm events up to the minor storm event (10 year ARI) into a below ground drainage pipe. Major storm events which exceed the drainage pipe capacity will travel overland towards the north. Roof runoff will be collected into downpipes and conveyed into a rainwater retention tank (designed and documented by others with water balance calculations to support) with 100 year ARI overflows connected into the below ground outlet drain.

Discharge from the underground drain, and major storm overland flow will be conveyed into a new detention and water quality improvement stormwater basin located adjacent Cox's creek. The stormwater basin will be sized during detailed design to achieve the following performance requirements;

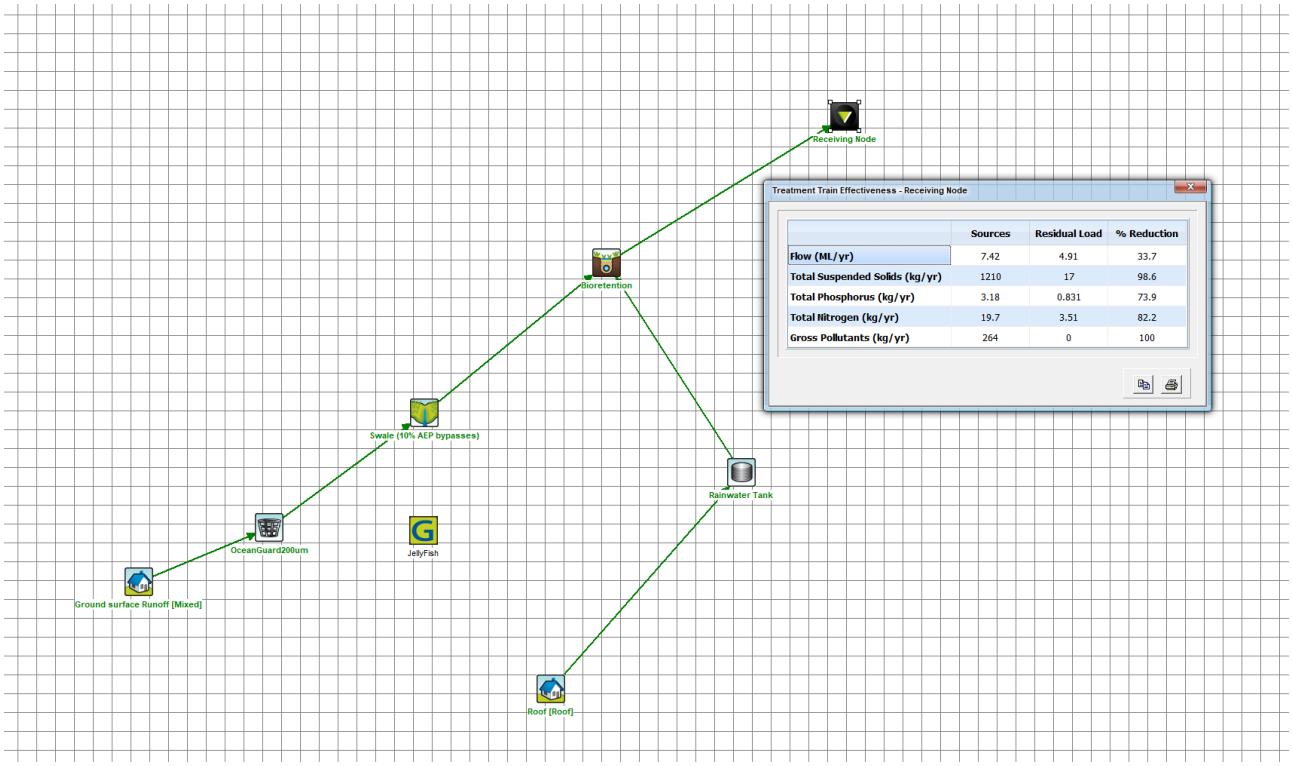
- Approximately 150m^3 detention storage with a staged flow control (i.e. dual orifice control or similar) over the outfall to Cox's creek to limit post-development flow rates to pre-development flow rates. Detention volume will be calculated and adjusted as necessary to ensure peak outflows do not exceed pre-development flow rates for the minor and major storm events respectively.
- Minimum 300mm freeboard from peak 1% AEP storm event basin water level, to emergency overflow weir to Cox creek
- Provision of 300mm of extended duration detention depth, sized to capture and treat the 3mo ARI (4EY AEP) storm event for all runoff from the ground surface areas of the basin.
- Provision of 200micron stormwater filter baskets within all stormwater inlet pits within the development to remove
- Basin floor to be planted with effective nutrient removal native vegetation, deep filter media, transition layers and drainage layers in accordance with EPA / Water Sensitive SA best practice guidelines.
- Provision of a emergency overflow to Cox creek via a rock lined weir or similar approved to mitigate erosion and protect the existing watercourse in the event of a blockage.

Internal drainage pipe capacity requirements will be determined during detailed design of the proposed development, however as a minimum requirement all below ground pipes will be designed to ensure conveyance of the 10% AEP (10 year ARI) storm event, and a minimum pipe diameter of 225mm to mitigate the likelihood of blockages in this environment.

A plan showing the stormwater concept, with bulk elevation estimates and earthworks renders is included as an appendices to this report.

Music modelling results

A Music model was developed to assess the reduction in pollutants based on the proposed treatment train consisting of bioretention raingardens and grassed roadside swales. This assessment was undertaken in accordance with the Water Sensitive SA MUSIC modelling guidelines. The results of the model can be seen in Figure 9 with a summary of reductions shown in Table 1. A filter cartridge based device was considered (Jellyfish) however was not necessary to achieve adequate water quality improvements.



Pollutant	Water Sensitive SA Target	Reduction achieved
Total Suspended Solids	80%	98.6%
Total Phosphorous	60%	73.9%
Total Nitrogen	45%	82.2%
Gross Pollutants	90%	94.1%

Table 1 – Summary of MUSIC model results

Cox Creek Preliminary Drain Model

A preliminary stormwater assessment was undertaken to assess required floor levels for the proposed development. The following parameters were used to develop a preliminary Drain Model using an extended rational model.

- Upstream catchment area of 2,115Ha
- Impervious area 10%, pervious area 90%
- Flow in 1% AEP major storm event of approximately 47.5m^3/s
- Irregular channel cross section based on contour data

Calculations indicate the water depth in Cox Creek and the associated lake may approach 2.5m increase in height with a maximum velocity of 5m/s during a 1% AEP major storm event. According to contour plans, Cox Creek is at an elevation of approximately 412m AHD at the location directly downhill from the proposed development. The proposed development area is at an elevation between 418m – 420m AHD which is 6m-8m above the creek. An increase in creek level of 2.5m would not impact the floor level of the proposed development. The preliminary creek cross section showing an increased water level of 2.5m is provided in Figure 4.

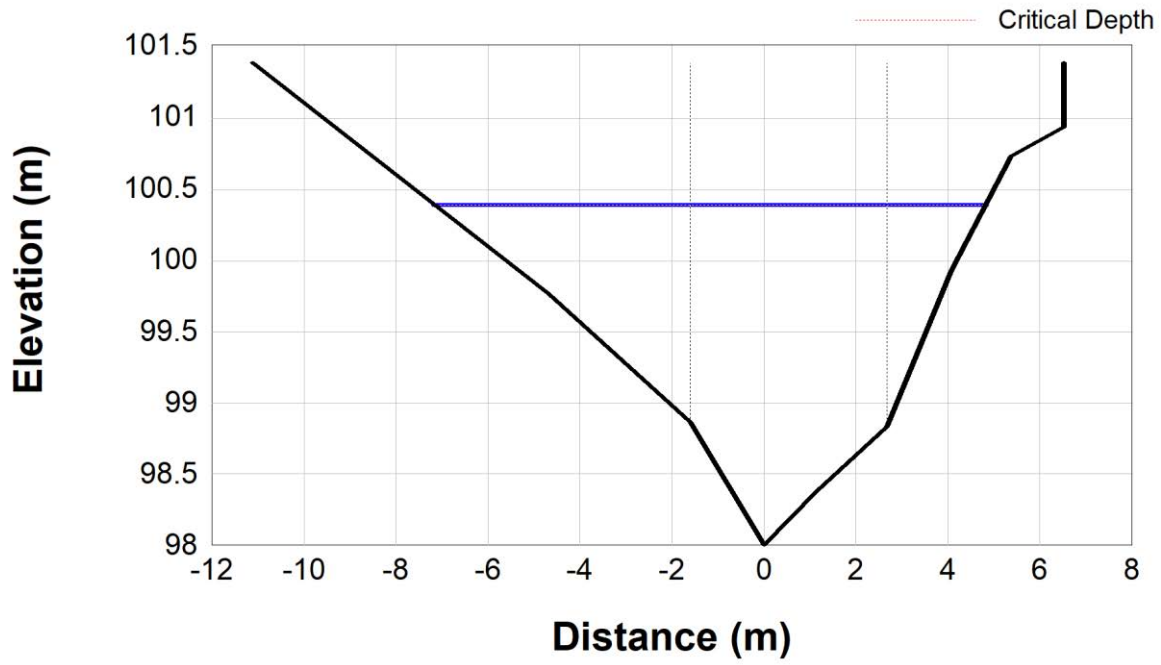


Figure 3 – Cox Creek Cross Section Preliminary Stormwater Assessment

Note that the creek invert on the model is an arbitrary datum. Elevation 98 equates approximately to the Cox Creek invert level of 412m AHD (from contour plans)

Conclusion

This Preliminary Stormwater Management Plan has been prepared prior to detailed design and outlines the general intent for managing stormwater runoff from the site. The requirements set out in this document should be adhered to within final detailed design to ensure compliance with the requirements of the Adelaide Hills Council and EPA.

Specifically, site stormwater should be retained and detained on site to ensure post development peak flows do not exceed pre-development peak flows for an equivalent storm event. Furthermore, management and reduction of pollutants within stormwater runoff is of high importance within this sensitive environment, and EPA water quality targets must be adhered to.

Minimum finished floor levels shall be 300mm above the maximum flood level within Cox Creek, which is estimated at 414.5m AHD. Concept site plans suggest this will be easily incorporated with all structures sited around the existing development at 419-420m AHD.

Detailed stormwater design including MUSIC and DRAINS modelling will be completed to verify the performance of the drainage network in meeting the retention/detention and water quality parameters in line with Adelaide Hills Council and EPA requirements.

Appended;

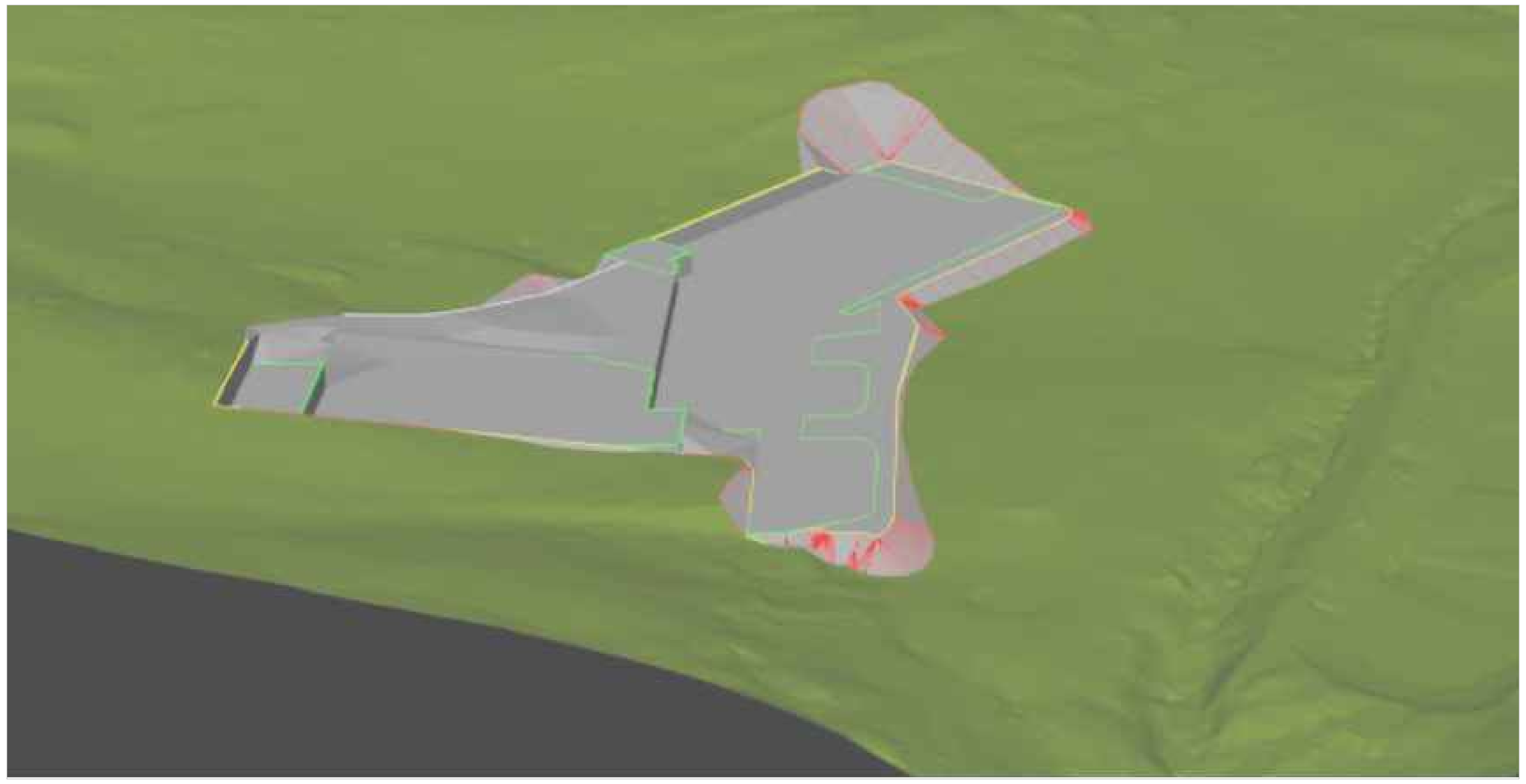
C110 Perspective Images

C120 Earthworks Plan

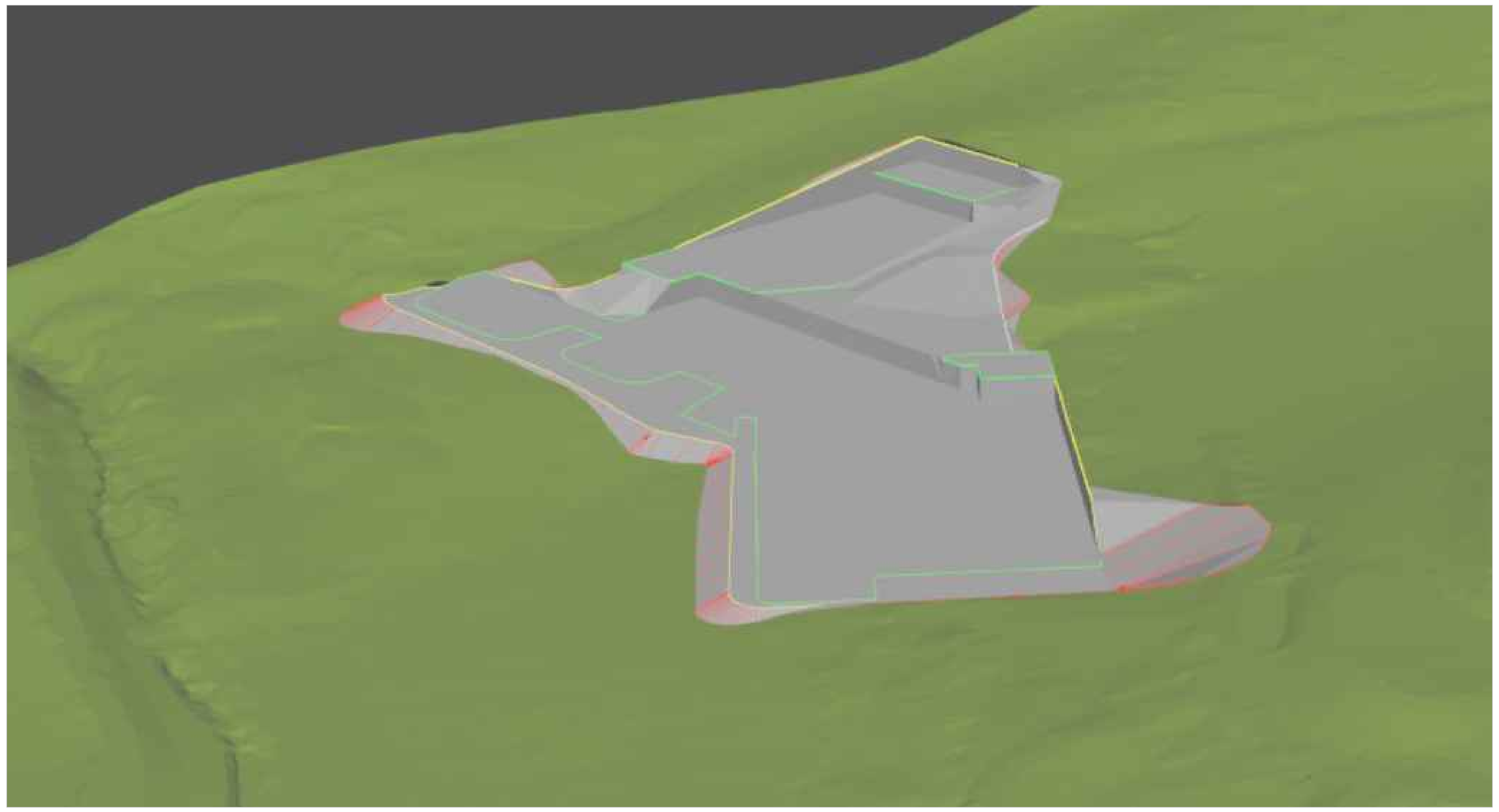
C130 Stormwater Management Plan

NORTH ELEVATION
SCALE NTS

SOUTH ELEVATION
SCALE NTS



EAST ELEVATION
SCALE NTS



WEST ELEVATION
SCALE NTS

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A	PRELIMINARY ISSUE	23.09.2022	JS	JC

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SIGNATURE

CLIENT VENTURE CAPITAL DEVELOPMENTS PTY LTD		DESIGNED JS	DRAWN JS
PROJECT TITLE MOUNT LOFTY GOLF ESTATE		CHECKED JC	No. OF SHEETS -
SITE ADDRESS 35 GOLFLINKS RD, STIRLING SA		SCALE NTS	DATE STARTED 23.09.2022
		SITE ID & JOB No. S53897_282604	REV. A
DRAWING TITLE PERSPECTIVE IMAGES		DRAWING No. C110	

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N

INDICATIVE EARTHWORKS VOLUMES:
CUT = -15871m3
FILL = 2978m3
NET = 12892m3 EXCESS OF CUT OVER FILL

ASSUMPTIONS:
- 100mm TOPSOIL STRIP
- COMPACTION/EXPANSION FACTORS IGNORED
- VOLUMES TO FINISHED LEVELS, NO ALLOWANCE FOR SLAB, FOOTINGS OR BENCHING AT THIS TIME.

NOTE:
CUT/FILL VOLUMES ARE UNRELIABLE & CONTRACTOR SHALL UNDERTAKE THEIR OWN DUE DILIGENCE TO DETERMINE SUITABLE EARTHWORKS ALLOWANCES.

EARTHWORKS LEGEND

- EXTENT OF EARTHWORKS CUT (red)
- EXTENT OF EARTHWORKS FILL (green)

SCALE 0 4 8 12 16 20 METRES

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CLIENT	VENTURE CAPITAL DEVELOPMENTS PTY LTD
PROJECT TITLE	MOUNT LOFTY GOLF ESTATE
SITE ADDRESS	35 GOLFLINKS RD, STIRLING SA
DRAWING TITLE	EARTHWORKS PLAN
DESIGNED	JS
DRAWN	JS
CHECKED	JC
No. OF SHEETS	-
SCALE	1:400 AT A1
DATE STARTED	23.09.2022
SITE ID & JOB No.	S53897_282604
DRAWING No.	C120
REV.	A

Outlet to Cox creek via concrete drainage pipe and associated headwall.
1% AEP overflows protected via rock rip rap suitable sized to manage both site generated flows, and bypassing Cox creek 1% AEP flood waters.

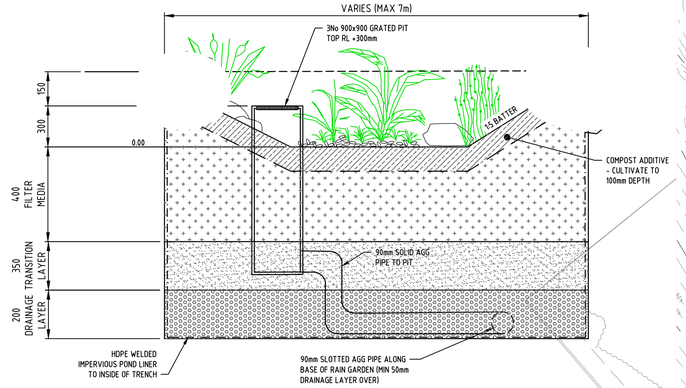
Stormwater basin
Nominally 150m³ detention storage volume with 300 freeboard
900x900 GIP outlet drain set 300mm above invert of basin.
Outlet from 900x900 GIP limited via orifice plate weir within pit to restrict peak discharge post-development, back to estimated pre-development peak flow rates.
300mm extended detention depth to retain and treat all flows up to the 4EY (3 month ARI) storm event.
Biofiltration treatment to base of basin, planted with effective nutrient removal vegetation.

Internal drainage network designed to cater for the 10% AEP storm event

Roof drainage and overflow from rainwater retention tank piped directly to outflow control

Overland flow path shaped to ensure excess major storm runoff is diverted towards basin

SWD



RAIN GARDEN - TYPICAL SECTION

SCALE NTS
REFER TO GENERAL NOTES FOR RAINGARDEN SPECIFICATIONS

SCALE 0 2 4 6 8 10 METRES

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CLIENT: VENTURE CAPITAL DEVELOPMENTS PTY LTD
PROJECT TITLE: MOUNT LOFTY GOLF ESTATE
SITE ADDRESS: 35 GOLFLINKS RD, STIRLING SA
DRAWING TITLE: STORMWATER MANAGEMENT PLAN

DESIGNED	DRAWN
JS	JS
CHECKED	No. OF SHEETS
JC	-
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Appendix D

IWMP Masterplan

SITE MASTERPLAN

LEGEND

1. Old Carey Gully Road Access
2. Staff carpark
3. Perfumery carpark
4. Perfumery courtyard
5. Tree orchard
6. Perfumery gardens
7. Cox Creek improvements
8. Heysen trail connection
9. Stormwater quality improvement basin
10. Deck
11. Lawn terrace
12. Practice putting green
13. Tourist accommodation drop-off
14. Pedestrian concourse
15. Golflinks road main access
16. Entry Avenue
17. Emergency maintenance vehicle access only
18. Dedicated pedestrian trail

KEY

- Internal path
- Internal driveway
- Heysen trail connection
- Carpark entries
- Sewer holding tank
- Perfumery sewer tank
- Stormwater basin
- Roof rainwater drainage pipe
- Internal drainage pipe
- Overland flow direction
- Gravity sewer from hotel
- Sewer rising main to pump station
- Perfumery gravity sewer
- Existing rising main to pump station
- Existing rising main to treatment plant

ECOLOGY

- Creek Revegetation zone
- Revegetation zone
- Trees to be removed

STORMWATER FROM MINOR CARPARKING AREAS TO BE COLLECTED INTO GRASSED SWALES. OVERFLOWS FROM SWALES TO BE CONVEYED INTO THE NEARBY WATERCOURSE VIA PIPED / OPEN SWALES

WASTEWATER GENERATED AT PERFUMERY TO BE COLLECTED INTO SMALLER SEPTIC TANK LOCATED AT THE PERFUMERY AND THEN PUMPED TO HOLDING TANK

PROPOSED GRAVITY SEWER FROM HOTEL, AND GOLF FACILITIES TOWARDS SEPTIC TANK SIZED TO MEET SA HEALTH REQUIREMENTS.

EFFLUENT TO BE CONVEYED INTO HOLDING TANK, AND PUMPED AT APPROVED FLOW RATE VIA RISING MAIN TO EX. ADELAIDE HILLS COUNCIL PUMP STATION PS-2. HOLDING TANK, PUMP SPECIFICATION TBC IN CONJUNCTION WITH PUMP STATION UPGRADE DISCUSSIONS WITH ADELAIDE HILLS COUNCIL.

EXISTING ADELAIDE HILLS RISING MAIN CONVEYING FLOWS SOUTH TO SA WATER TREATMENT PLANT

EXISTING ADELAIDE HILLS COUNCIL STIRLING STEDS SYSTEM PUMP STATION 2 - PS2.

UPGRADE EXISTING PUMPS TO NEW PUMPS CAPABLE OF 2.6 L/S. NO MODIFICATION TO EMERGENCY STORAGE BELIEVED TO BE REQUIRED.

EXISTING ADELAIDE HILLS RISING MAIN PS1 TO PS2

EXISTING ADELAIDE HILLS COUNCIL PUMP STATION - PS1 .

PS1 PUMPS TO PS2

OLD CAREY GULLY ROAD
HEYSEN TRAIL
PERFUMERY
COX CREEK
TOURIST ACCOMMODATION
35M BUFFER
35M BUFFER
GOLFLINKS ROAD
GOLFLINKS ROAD
MANNA GUM AVE
TO S.E. FREEWAY

Mount Lofty Golf Estate

oxigen

1:1500 (A1), 1:3000 (A3)
0 10 25 50m
N

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