

Special Council Assessment Panel Agenda & Reports

6 March 2024

Our Vision

*A City which values its heritage, cultural diversity,
sense of place and natural environment.*

*A progressive City which is prosperous, sustainable
and socially cohesive, with a strong community spirit.*

City of Norwood Payneham & St Peters
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City of
Norwood
Payneham
& St Peters

6 March 2024

To all Members of the Council Assessment Panel:

- Mr Terry Mosel (Presiding Member)
- Ms Jenny Newman
- Mr Mark Adcock

NOTICE OF MEETING

I wish to advise that pursuant to Clauses 1.5 and 1.14 of the Meeting Procedures, the next Special Meeting of the Norwood Payneham & St Peters Council Assessment Panel, will be held in the Council Chambers, Norwood Town Hall, 175 The Parade, Norwood, on:

Wednesday 6 March 2024, commencing at 7.00pm.

Please advise Kate Talbot on 8366 4562 or email ktalbot@npsp.sa.gov.au if you are unable to attend this meeting or will be late.

Yours faithfully



Geoff Parsons
ASSESSMENT MANAGER

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175 The Parade, Norwood SA 5067

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City of
Norwood
Payneham
& St Peters

VENUE Council Chambers, Norwood Town Hall

HOUR 7:00pm

PRESENT

Panel Members Mr Terry Mosel
Mr Mark Adcock
Ms Jenny Newman

Staff
Kieran Fairbrother, Senior Urban Planner

APOLOGIES Mr Ross Bateup
Cr Christel Mex

ABSENT

1. **COMMENCEMENT AND WELCOME**
2. **APOLOGIES**
3. **CONFIRMATION OF THE MINUTES OF THE MEETING OF THE COUNCIL ASSESSMENT PANEL HELD ON 19 FEBRUARY 2024**
4. **DECLARATION OF INTERESTS**

5. DEVELOPMENT APPLICATIONS – PDI ACT

5.1 DEVELOPMENT NUMBER 24000067 – CITY OF NORWOOD PAYNEHAM & ST PETERS
 – 188 O G ROAD, FELIXSTOW

DEVELOPMENT NO.:	24000067
APPLICANT:	City of Norwood Payneham & St Peters
ADDRESS:	188 O G RD FELIXSTOW SA 5070 188 O G RD FELIXSTOW SA 5070 188 O G RD FELIXSTOW SA 5070
NATURE OF DEVELOPMENT:	Variation to Development Applications 22017508 and 23024217 comprising the removal of Tree 2 (a significant Flooded Gum)
ZONING INFORMATION:	<p>Zones:</p> <ul style="list-style-type: none"> • Housing Diversity Neighbourhood <p>Overlays:</p> <ul style="list-style-type: none"> • Affordable Housing • Future Road Widening • Hazards (Flooding) • Heritage Adjacency • Hazards (Flooding - General) • Local Heritage Place • Prescribed Wells Area • Regulated and Significant Tree • Stormwater Management • Traffic Generating Development • Urban Transport Routes • Urban Tree Canopy • Water Resources • Airport Building Heights (Regulated) • Advertising Near Signalised Intersections
LODGEMENT DATE:	9 Jan 2024
RELEVANT AUTHORITY:	Assessment panel/Assessment manager at City of Norwood, Payneham and St. Peters
PLANNING & DESIGN CODE VERSION:	P&D Code (in effect) Version 2023.19 - 21 December 2023
CATEGORY OF DEVELOPMENT:	Code Assessed - Performance Assessed
NOTIFICATION:	No
RECOMMENDING OFFICER:	Kieran Fairbrother Senior Urban Planner
REFERRALS STATUTORY:	Nil
REFERRALS NON-STATUTORY:	Nil

CONTENTS:

APPENDIX 1:	Relevant P&D Code Policies	ATTACHMENT 4:	Instrument of Delegation to the CAP
ATTACHMENT 1:	Application Documentation (Including Applicant's Response to Deferral Reasons)	ATTACHMENT 5:	Approved Site Plan
		ATTACHMENT 6:	Minutes for the CAP Meeting of 19 February 2024
ATTACHMENT 2:	Subject Land Map		
ATTACHMENT 3:	Applicant's Responses		

DETAILED DESCRIPTION OF PROPOSAL:

By way of development authorisation 22017508, the Applicant obtained planning consent for the "demolition of existing swimming pools, pavilion and minor structure and the construction of new swimming pools, pavilion, plant room, pool enclosure and shade structures". Several variations to the proposal were then made and approved as part of development authorisation 23024217. For both Development Authorisations, the Applicant sought to retain the tree that is the subject of this application and were able to demonstrate how the proposed development could occur without impacting the tree.

Now, the Applicant seeks removal of this significant tree for several reasons including, but not limited to, construction efficiencies, costs savings, the ability to use the space under the tree as recreation space, and preventing potential damage to the new swimming pool.

BACKGROUND

At its meeting on Monday 19 February 2024 ("First Meeting"), the Council Assessment Panel heard this matter and resolved as follows:

That the Council Assessment Panel resolved to defer Development Application ID 24000067 to enable the following information to be submitted:-

- *Further exploration and justification for the management and disposal of the contaminated soil including rationale as to why the removal of the significant tree is necessary to accommodate such; and*
- *Further information and justification regarding the consideration of all reasonable development options and design solutions to avoid the removal of the significant tree in accordance with PO 1.4(b) of the Regulated [and] Significant Tree Overlay.*

The Applicant has now provided information in response to these deferral reasons, and these are contained **Attachment 1** (page 29 onwards), along with all other previous documentation.

PLANNING ASSESSMENT

The application has been assessed against the relevant provisions of the Planning & Design Code, which are contained in Appendix One. The previous Assessment Report is contained within **Attachment 6** – the undisputed parts of which will not be reiterated in this report.

Performance Outcome 1.2 of Regulated and Significant Tree Overlay states:

"Significant trees are retained where they:

- (a) Make an important contribution to the character or amenity of the local area*
- (b) Are indigenous to the local area and are listed under the National Parks and Wildlife Act 1972 as rare or endangered native species*
- (c) Represent an important habitat for native fauna*

- (d) *Are part of a wildlife corridor of a remnant area of native vegetation*
- (e) *Are important to the maintenance of biodiversity in the local environment and/or*
- (f) *Form a notable visual element to the landscape of the local area.”*

There was no doubt by the Panel at its First Meeting that the subject tree satisfied at least one of the criteria in PO 1.2 such that retention of the tree is warranted in the first instance. The Panel opted to defer its decision because it was not satisfied that Performance Outcome 1.4 of the Overlay had been met to justify the removal of the tree.

Performance Outcome 1.4 of the Regulated and Significant Tree Overlay states:

“A tree-damaging activity in connection with other development satisfies all of the following:

- (a) It accommodates the reasonable development of land in accordance with the relevant zone or subzone where such development might not otherwise be possible*
- (b) In the case of a significant tree, all reasonable development options and design solutions have been considered to prevent substantial tree-damaging activity occurring.”*

In respect of attempting to satisfy PO 1.4, the Applicant has now provided further information, contained within **Attachment 1**.

Firstly, it would be unwise to ignore the fact that an existing development authorisation exists for the redevelopment of the Payneham Memorial Swimming Pool facility (development authorisation 22017508 and variation authorisation 23024217), and that the development encapsulated by these approvals required the endorsement of the Council and are subject to a Local Government Infrastructure Partnership Program (“LGIPP”) Grant Deed of \$5.6 million. Consequently, it is worth noting that any further changes to the already-approved development, or any complete re-design of this development, would be required to go through the same rigor and submissions as has already occurred with the current approval; the history of which is outlined by the Applicant in pp. 29-34 of **Attachment 1**.

It is the administration's view that to require the Applicant to re-design the redevelopment of this facility and go through these processes again, with no guarantee of a positive outcome in respect of either process, is inherently unreasonable and therefore PO 1.4(b) should be considered satisfied. Moreover, the Applicant has advised that any proposed redesign would be a breach of the LGIPP Grant Deed agreement and likely result in the loss of grant funding (**Attachment 3**). Nevertheless, the Applicant was asked to produce evidence that there has been consideration of all other reasonable development options and design solutions to avoid the removal of the tree.

Five (5) draft masterplan options were developed and presented to the Council, with the option that was endorsed being that which was ultimately granted development approval (ID 22017508). The Administration has verbally confirmed with the Applicant that all five options included the retention of the subject tree, but none of those options would've provided sufficient space on site to retain the contaminated material that has now come the light.

Investigations undertaken by LBW Co, on behalf of the Council, identified that there is approximately 3,376m³ of contaminated soils and material on the site that need to be managed and disposed. At an earlier stage, it was determined that the retention of this contaminated material on site was not feasible for two reasons (quoted from page 36 of **Attachment 1**):

“1. The site contamination is primarily uncontrolled fill and cannot be classified and approved as engineered fill under the buildings or pool structures without excavating, grading and further testing of soils during the construction stage. This would be an inefficient process without any guarantee of how much contaminated soil would actually be suitable for reuse.

2. Due to the increase in the total area of the site being development to accommodate the buildings, swimming pools, zero depth play and waterslides and tree protection zone, there is limited suitable area available (approximately 600m²) on-site to retain and encapsulate contaminated soils.”

Now that the cost for the disposal of this waste is known to be \$1.8 million, the Applicant seeks the removal of the tree so that this area can accommodate the on-site retention and encapsulation of all this contaminated material, thus providing significant savings.

The Applicant has demonstrated that there is not sufficient room on site to accommodate this material, due to the location and siting of buildings and the TPZ of the subject tree. Any alternative design or re-siting of buildings will still not be able to accommodate this uncontrolled fill, and so to this extent PO 1.4(b) is considered satisfied.

The Applicant was asked to investigate how much contaminated material could be stored on site based on the existing design (i.e. within the 600m² of aggregate space available) and what savings that might produce against the \$1.8 million disposal fees. Discussions with the construction contractor resolved that the retention of contaminants in multiple, smaller locations on the site would be so labour intensive and inefficient that the costs of undertaking that work and disposing of what remains would likely be more costly than disposing of all the material off-site. Accordingly, this is not considered to be a reasonable design solution either.

With the above in mind, as well as the other reasons put forward by the Applicant in **Attachment 3** (e.g. the removal of the tree allows for better use of the area), the removal of the subject tree is justified by virtue of satisfaction of PO 1.4 of the Regulated and Significant Tree Overlay.

To offset the loss of shade cover and habitat and biodiversity value that the subject tree provides, the Applicant has proposed a new landscaping plan (see p 105 **Attachment 1**) – and the Panel will recall that a detailed landscaping plan was recommended to be required by way of a Reserved Matter the last time this item was presented for your consideration. This landscaping plan provides for an additional ten (10) trees being planted on the site and a more usable lawn area for visitors. The Applicant has confirmed that any change to the landscaping plan does not require Council endorsement nor a variation to the existing LGIPP Grant Deed. This landscaping plan goes beyond what is required by regulation 59(1)(b) of the *Planning, Development and Infrastructure (General) Regulations* – that is, to plant just 3 replacement trees – and is consequently considered an acceptable response.

RECOMMENDATION

It is recommended that the Council Assessment Panel resolve that:

1. Pursuant to Section 107(2)(c) of the Planning, Development and Infrastructure Act 2016, and having undertaken an assessment of the application against the Planning and Design Code, the application is NOT seriously at variance with the provisions of the Planning and Design Code; and
2. Development Application Number 24000067, by City of Norwood Payneham & St Peters is granted Planning Consent subject to the following conditions:

CONDITIONS

Planning Consent

Condition 1

The development granted Planning Consent shall be undertaken and completed in accordance with the stamped plans and documentation, except where varied by conditions below, noting that all previous stamped plans and documentation, including conditions previously granted Planning Consent for Development Application ID No's 22017508 and 23024217 are still applicable except where varied by this authorisation.

Condition 2

Condition No 2 imposed on Planning Consent for Development Application ID No 23024217 is hereby deleted and replaced by the following:

With respect to Tree 1 and Tree 3 detailed in the Arboricultural Impact Assessment (AIA), dated 20 June 2022, prepared by Urbans Arboriculture, the following measures shall be undertaken in addition to the recommendations contained in the AIA:

- all service trenches shall avoid each tree's Tree Protection Zone (TPZ) where possible. Where this is deemed not possible, exploratory work for the service trenches shall be undertaken under the

supervision of a level 5 arborist (or higher), with any structural roots of a diameter of 25mm or greater being retained where possible;

- the paving in the vicinity of Tree 1 be undertaken in accordance with amended plan 21-0255 (Drawing No. AA1221, dated 13/07/23) herein granted Planning Consent, and where excavation is required for the alignment of the paths and for stormwater or irrigation purposes it to be undertaken using boring or hydrovac excavation methods as appropriate under the supervision of a level 5 (or higher) arborist;
- physical tree protection barriers are to be installed with signage for the full duration of the works for the full extent of undisturbed TPZs (that is the areas of the TPZ within which no work is proposed), or to the largest extent possible, and not removed without consent of the Project Arborist;
- Irrigation must not be turned off between the months of October to May as the significant trees have developed a reliance on irrigation over time. Alternatively, supplementary watering shall be provided during this time; and
- any pruning should be undertaken by, or in the presence of, the Project Arborist, including any root pruning.

Condition No 3

Three (3) replacement trees, with a minimum mature height of 5 metres, shall be planted on the subject land as soon as is practical within 12 months of the removal of the significant tree herein approved. The replacement tree shall not be planted within 10 metres of a dwelling or in-ground swimming pool and cannot be of a species identified in Regulation 3F(4)(b) of the Planning, Development and Infrastructure (General) Regulations 2017.

Condition No 4

All areas of landscaping demonstrated on the herein approved Landscape Plan (Drawing No: 321-0359-00-L-02-DR01, dated 22.02.2024) shall be planted within the next available planting season after the completion of the development to the reasonable satisfaction of the Assessment Manager and such plants, as well as any existing plants which are shown to be retained, shall be nurtured and maintained in good health and condition at all times, with any diseased or dying plants being replaced, to the reasonable satisfaction of the Assessment Manager or its delegate.

ADVISORY NOTES

Planning Consent

Advisory Note 1

Appeal Rights - General rights of review and appeal exist in relation to any assessment, request, direction or act of a relevant authority in relation to the determination of this application, including conditions.

Advisory Note 2

No work can commence on this development unless a Development Approval has been obtained. If one or more Consents have been granted on this Decision Notification Form, you must not start any site works or building work or change of use of the land until you have received notification that Development Approval has been granted.

Advisory Note 3

This approval varies the original consent / approval to which it applies, but it does not extend nor vary the operative date of the original consent / approval. The consent / approval must be acted upon within the operative date applicable, unless extended by the relevant authority via separate submission.

Advisory Note 4

The Applicant is reminded of its responsibilities under the *Environment Protection Act 1993*, to not harm the environment. Specifically, paint, plaster, concrete, brick wastes and wash waters should not be discharged into the stormwater system, litter should be appropriately stored on site pending removal, excavation and site disturbance should be limited, entry/exit points to the site should be managed to prevent soil being carried off site by vehicles, sediment barriers should be used (particularly on sloping sites), and material stockpiles should all be placed on site and not on the footpath or public roads or reserves. Further information is available by contacting the EPA.

PAYNEHAM MEMORIAL SWIMMING CENTRE

Application for removal of significant tree and variation of existing Planning Consent.

Background

The redevelopment of the Payneham Memorial Swimming Centre at 188 O G Road Felixstow, is proposed to create a brand-new contemporary all aquatic facility for the community with all year-round access and availability which meets all current access, inclusion, and legislative requirements as well as community expectations.

Development Approval has been achieved as per the table below:

STATUTORY APPROVALS - DEVELOPMENT & INFRASTRUCTURE ACT 2016										
26-Sep-23										
PLANNING		Commentary	Appln No	date applied	date approved	BUILDING CONSENT	date of approval/certification	DEVELOPMENT APPROVAL	date of lodgement	date of approval
Initial Planning Consent	#1	Approved	22017508	26-May-22	14-Sep-22	SEE BELOW		SEE BELOW		
Subsequent Planning Approval Variation Application	#2	to vary conditions and seek approval for changes to plans	23024217	25-Aug-23	13-Sep-23	23024217	18-Sep-23	23024217	25-Sep-23	26-Sep-23

The current planning conditions in relation to tree management state:

With respect to the three (3) significant trees detailed in the Arboricultural Impact Assessment (AIA), dated 20 June 2022, prepared by Urbans Arboriculture, the following measures shall be undertaken in addition to the recommendations contained in the AIA:

- i. Service trenches are to avoid each trees Tree Protection Zone (TPZ) where possible but if not, they are to be installed using boring or hydrovac excavation methods under the supervision of a level 5 arborist.);*
- ii. The paving in the vicinity of Tree 1 be undertaken in accord with amended plan 21-0255- AA1221 dated 13/07/23 and where excavation is required for the excavation of the alignment of the paths and for stormwater or irrigation purposes it be undertaken using boring or hydrovac excavation methods as appropriate under the supervision of a level 5 arborist*
- .iii. Physical tree protection barriers are to be installed with signage for the duration of the works for the full extent of the undisturbed TPZ's (or to the largest extent possible) and not removed without consent of the project arborist*
- iv. Irrigation must not be turned off between the months of October - May as the significant Trees have developed a reliance on irrigation here over time). Alternatively, supplementary irrigation must be established for this period of time (i.e. October - May, warmer months of the year); and*
- v. All pruning should be undertaken by, or in the presence of, a level 5 arborist (project arborist), including root pruning*

Tree 2 is located on the eastern side of the site a few meters from the eastern boundary and approximately in line with half-way between the deep and shallow ends of the existing and future 50m outdoor pools.

It has become apparent that the retention of Tree 2 has a number of impacts which affect the constructability of the facility, structural integrity of the pool long term, ability to achieve positive environmental outcomes through retention of contamination on site, and functionality of the open space areas of the pool for the community. The remaining life of the tree is also a concern for safety, with tree removal also to be highly challenging immediately adjacent the pool within a constrained site.

Collectively these issues create a compelling argument that justifies the need for the removal of this tree under the Planning and Design Code Regulated and Significant Tree Overlay PO 1.4:

A tree-damaging activity in connection with other development satisfies all the following:

- (a) It accommodates the reasonable development of land in accordance with the relevant zone or subzone where such development might not be possible*
- (b) In the case of a significant tree, all reasonable development options and design solutions have been considered to prevent to prevent substantial tree-damaging activity occurring.*

The planning approval which was originally granted in September 2022 and the more recent variation to the planning approval granted in September 2023 both sought to protect the three significant trees on the site. In fact significant work was undertaken to address concerns about the impact of site works and approved paved areas and likely trenching in the vicinity of Tree 1 in the submission for the variation in September 2023, so that Tree 1 could and would be properly protected.

Measures have also been introduced to the construction contract to also control the activities within the TPZ of Tree 3 and mitigate tree damaging activities from happening there.

Significant Tree 2 is the one of current concern and the submission below provides the context and reasoning for the request for approval to remove this tree.

Tree 2

General

The arborist that prepared the attached tree report indicates that Tree 2 *“is a healthy flooded gum but possibly will prove a challenging tree to retain, especially if it shows a tendency to keep growing. It looks to have established an extensive root system in the immediate area. It appears probable that roots are growing in the vicinity of the pool. The tolerance of this tree to localised root disturbance is questionable in my opinion. It looks to have a modest ULE, but at least 10 years.”*

Tree 2 is not a local indigenous or remnant species. It was planted post 1979, as attested by the attached aerial photo of the site from that year and therefore definitely planted during the tenure of the existing pool facility which was built in 1968 and from the evidence of the aerial photography, it is no more than 44 years old.

If developing the site now from scratch without any existing vegetation the selection and location of trees would be made with consideration of several criteria such as location (afternoon shade), eventual size, safety (i.e. limb drop), maintenance (i.e. trimming), amenity, amount of leaf-drop and non-invasive root systems. This tree was not a desirable species for the existing setting when considering the criteria listed above and is not an appropriate tree for retention in a highly used, public space. The initial attempt to retain of Tree 2 has meant significant compromise and/or risk to the project and community in a number of areas.

Proximity to the Pool

The approved 10 lane 50m outside pool is to be constructed generally in the same location as the existing 8 lane pool with the additional 2 lanes being added on the eastern side. This means the new pool and its surrounding concrete concourse will be 5m approx. closer to Tree 2. It will still be outside the SRZ and TPZ but when considering the statement in the Arborists report *“It appears probable that roots are growing in the vicinity of the pool”* it is possible that some roots of the tree will be affected through construction. According to the Arborist, *“The tolerance of this tree to localised root disturbance is questionable in my opinion”*

It is also possible the tree roots have exacerbated cracking causing leakage in the existing pool. It is of some concern that the new pool, with minimum expected useful life of 50 years may be impacted by the root system of Tree 2. Removal and replacement with a more appropriate species will mitigate the risk of damage to the pool and associated pipe networks from the tree root system. It will also mitigate impacts from potential root disturbance leading to issues with the tree in the short to medium term.

The proximity of Tree 2 to the pool is also of concern from a maintenance perspective. Although leaf litter can be managed through increased maintenance, given the opportunity, this tree would not be ideally located adjacent a pool. It is not a defining factor for tree removal but would be a net positive impact should approval be granted for removal of Tree 2.

Tree life

According to the Arborist report, Tree 2 has “a modest ULE, but at least 10 years” and “The tolerance of this tree to localised root disturbance is questionable in my opinion” may mean the tree itself is not expected to have a long-life span when considered in relation to the lifespan of the redeveloped pool facility, which should be more than 50 years. This is especially the case when considering the concern of the arborist regarding Tree 2’s tolerance to some root damaging activity through construction of the new pool.

Safety

Given the useful life of Tree 2 is anticipated to be significantly less than the useful life of the pool, this presents a significant risk of limb drop and failure to the community within the pool grounds. Initial plans were devised to provide some protection to the community through mulching and garden beds around the tree, however this has the effect of dramatically decreasing the useable area for the community to relax and recreate, with no guarantee that these areas are sufficient to ensure the safety of the community.

Removal and Access

Consideration of how the tree would be removed when it reaches end of useful life has identified challenges regarding access. Slides and water play will be constructed to the north, with the pool immediately adjacent to the west limiting access and working areas. There are also facilities and club rooms to the south and the creek/drainage infrastructure to the east. Effectively, limited access will be available through a small and constrained service entrance onto the communal lawn area. This will result in a challenging removal environment risking damage to the pool itself with the lawned area and irrigation requiring replacement as a minimum.

Recreation Area

With the fear for public safety regarding limb drop, significant exclusion zones around Tree 2 were established in the attached landscape plan and the resultant mulched area significantly reduces the lawned area available to the community for recreation and picnic space.

Mulching and exclusion of people from the area is also required as the existing surface roots of Tree 2 are proud of the existing lawn and have been damaged by mowing over the years and are now a tripping hazard in the lawn area and will continue to be an issue.

Tree 2 is also not positioned in such a way as to allow shade from afternoon sun. With the required exclusion zones, the tree will provide little to no shade benefit for the community.

Recent modelling suggests that given the significant improvement in facilities and amenity, patronage will increase from approximately 50,000 users per year to 300,000 users per year. It is expected that through the warmer months when the slides and zero depth play areas are a strong drawcard any lawned area for families and children will be in high demand. The extensive exclusion zones around Tree 2 are now viewed as highly undesirable given the updated modelling for usage of the facility.

Environmental Considerations

Contaminated waste has been identified in the parts of the site and needs to be appropriately dealt with under EPA legislation and guidelines. The appropriate hierarchy of controls from the EPA is to, wherever possible, treat and or contain contaminated material on site through burial and capping. This is in preference to removal, transport, and disposal offsite.

The contaminated material is not able to be placed under buildings or structures as it is uncontrolled fill. As such, the only area potentially available for containment is the area between the outdoor pool and the eastern fence line where the significant tree is located. Should this option become available to explore through tree removal, it will not only provide an environmentally preferred disposal location in accordance with EPA guidelines, it will also potentially provide significant savings to the community through reduced contaminated waste disposal fees.

Constructability

Upon receipt and interrogation of the construction program through tender evaluation, it has been identified that the lack of space available on site is a significant challenge to the efficient construction of this new community facility. Cranes and other heavy equipment will have to operate in the area of the existing 50m pool whilst the buildings are constructed, with very little other site area available for plant, equipment, and work areas. This in turn creates an extended program, resulting in delays to facility opening and additional cost to the community for this project.

The removal of Tree 2 will provide additional area within the site, allowing for exploration of program efficiencies, ease of construction and improved safety of the construction team. Whilst construction can take place with Tree 2 in place, substantial efficiencies and safety improvements could be realised should it be removed.

Safety through line of sight

The new facility has been designed to meet a minimum floor (and pool concourse level to reduce the risk of flood impacts from Third Creek in a 1 in 100-year ARI storm event. This resulted in the building floor levels and pool concourse and corresponding water levels being lifted by approximately 500mm. Whereas the area under the Tree 2 is quite flat with a slight rise of 250mm from the edge of pool to the tree trunk, the new levels mean that the ground to the east beyond the concourse is lower than the pool itself, with a slope slightly down of approx.250mm to the tree and then another 250mm (approx.) to the fence behind.

Such a slope, although slight, will create an environment for parents and carers where surveillance of behaviour and safety in the main pool becomes more restricted. The visual connection to and view of the water will be reduced when further away from the pool, keeping in mind that the lawn areas will be used widely for placement and sitting or lying on of towels, low to the ground. Correspondingly, the passive surveillance of items left on the lawn area will also be reduced for someone in the pool itself.

The removal of Tree 2 will allow for a re-grading of the area to elevate the grassed area and thus improve a parent or caregivers line of sight to those in their care in the main pool.

Outcomes

The removal of Tree 2 would allow for the creation of a safer environment for the community. This would occur through reduced risk of limb drop as well as improved surveillance and monitoring by parents and care givers through re-grading to improve sight lines.

Improved landscaping and grading would allow for the introduction of appropriate shade tree plantings in locations for the best long-term outcome. The amount of lawn area would also be able to be increased thus making best use of the available open space which will be in high demand in summer months.

The removal of the tree would also create more space and remove some of the existing constraints for the contractor to build the new building swimming pools which will allow a better efficiencies and staging/sequencing of the works to save on cost but also time to the benefit of the community.

The potential for improved environmental outcomes with the retention and appropriate storage of contaminated material could then be explored.

The attached plans indicate how landscaping and tree planting is currently proposed, and how it could be undertaken should the Tree 2 be removed. Trees with non-invasive roots would be planted closer to the outdoor pool to provide afternoon shade to the area between the eastern side of the pool concourse and the eastern site boundary which would be planted with lawn to provide as much open and usable space as possible for the patrons.

If the removal of Tree 2 is approved then more detailed landscaping, planting and irrigation plans would be prepared and submitted for consideration and approval prior to any landscape works commencing.

With acknowledgement that the removal of Tree 2 would reduce the amount of tree canopy in the locality in the short to medium term, it is proposed that the project fund the supply and planting of an additional

20 trees in accordance with Councils Tree Canopy Strategy within the locality, to mitigate that immediate effect and increase the tree canopy in the longer term. To be clear this is an undertaking that will be in addition to any existing tree street or open space planting program under the Council's operating budgets. Tree planting will be completed prior to the opening of the facility in 2026.

In Summary

Significant work has been put into ensuring the retention and health of Tree 1 as evidenced by the measures taken recently to change the plans and work methodologies in the Planning Variation in September 2023 and Tree 3 is being protected using appropriate specifications and conditions of contract for the construction contract.

However, it would be safer, more cost effective, more environmentally beneficial, and ultimately of more community benefit to remove Tree 2 now through the construction phase. This would allow for landscaping and tree planting that provides better shade, amenity, safety, and maintenance outcomes that can be more aligned to the life of the pool.

Tree 2:

- Is not a local indigenous species
- Is not a species that is suitable for such a high use area.
- Has issues with exposed roots requiring a landscape design response that impacts access and usage of the area
- Possibly has roots which are already in the vicinity of the existing pool
- Has questionable tolerance to root damaging activities
- Has a questionable useful life
- Requires pruning to maintain some level of safety for pool patrons in the area
- Requires an exclusion zone to be established under a reasonable area of the canopy
- Will be increasingly dangerous as it approaches end of life
- Will be difficult to remove in a constrained site
- Impact on useable green space for the community
- Would continue to offer little shade or protection for patrons at the pool
- Limits the ability to plant more appropriate trees in the vicinity
- Prevents appropriate regrading of the site to improve sight lines to the pool and thus safety for pool users requiring supervision.
- Creates significant construction program limitations
- Prevents exploration of environmental outcomes with contaminated waste storage
-

If Tree 2 were removed:

- There would be no safety risk of falling branches therefore more lawn area and useable space can be created for the public, which is highly desirable for a swimming pool redevelopment and to meet the needs of the expected increase in patrons, post redevelopment.
- There would be the opportunity to for efficient burial and containment of on-site contaminated waste (in accord with approved EPA standards) resulting in less waste being transported offsite and substantial cost savings for the community.
- There would be more space on site able to be used for construction storage and allow more timely and cost-effective staging of works with substantial cost savings for the community.
- Changes in site level in the area east of the pool can be incorporated into the new landscape plan to account for the changes in pool level in relation to the existing open space resulting in improved safety of pool users.
- Additional tree planting is possible in the expanded lawn area in locations which will provide more afternoon shade and amenity for users in the short, medium, and long-term.
- Additional tree planting (twenty new Trees) will be provided within the locality to offset the immediate reduction in canopy cover

- A new landscape plan would be prepared and submitted to incorporate the above design matters.

It is proposed:

1. That the removal of Tree 2 detailed in the Arboricultural Impact Assessment (AIA), dated 20 June 2022, prepared by Urbans Arboriculture be approved as this submission meets the criteria in the Planning and Design Code; Regulated and Significant Tree Overlay PO 1.4 and
2. That the conditions of consent relating to the protection of significant trees on site be amended accordingly to remove any reference to this Tree 2, viz

With respect to the Tree 1 and Tree 3 of the three (3) significant trees detailed in the Arboricultural Impact Assessment (AIA), dated 20 June 2022, prepared by Urbans Arboriculture, the following measures shall be undertaken in addition to the recommendations contained in the AIA regarding those 2 trees:

i. Service trenches are to avoid each tree's Tree Protection Zone (TPZ) where possible but if not, they

are to be installed using boring or hydrovac excavation methods under the supervision of a level 5 arborist.);

ii. The paving in the vicinity of Tree 1 be undertaken in accord with amended plan 21-0255-AA1221

dated 13/07/23 and where excavation is required for the excavation of the alignment of the paths and

for stormwater or irrigation purposes it be undertaken using boring or hydrovac excavation methods

as appropriate under the supervision of a level 5 arborist

.iii. Physical tree protection barriers are to be installed with signage for the duration of the works for the full extent of the undisturbed TPZ's (or to the largest extent possible) and not removed without consent of the project arborist

iv. Irrigation must not be turned off between the months of October - May as the significant Trees have developed a reliance on irrigation here over time). Alternatively, supplementary irrigation must

be established for this period of time (i.e. October - May, warmer months of the year); and

v. All pruning should be undertaken by, or in the presence of, a level 5 arborist (project arborist), including root pruning

3. That a new condition of consent be set that ensures an appropriate landscape plan is provided and approved and that the landscaping is maintained appropriately thereafter, viz

An alternate landscape plan shall be provided to the reasonable satisfaction of the Assessment Manager prior to Landscape works commencing on site showing a suitable mix and density of trees, shrubs and groundcovers and all such plants shall be planted within the next available planting season after the occupation of the premises and thereafter nurtured and maintained in good health and condition at all times, with diseased or dying plants being replaced, to the reasonable satisfaction of the Council or its delegate.

4. That the applicant be held to the undertaking to provide, plant, and maintain twenty additional trees at its cost in all things elsewhere in the locality, over and above any existing tree planting programs, through a new condition, viz

That an additional twenty trees (in addition to any existing or programmed tree plantings) be planted in accordance with Councils Tree Canopy Strategy and accepted arboriculture standards in the locality and those trees be replaced if they fail at any time in the initial 3 years after planting.

AERIAL PHOTOGRAPH OF THE PMSC IN 1979 WHICH DOES NOT SHOW TREE 2 TO THE EAST OF THE MAIN POOL

Aerial Imagery 1979

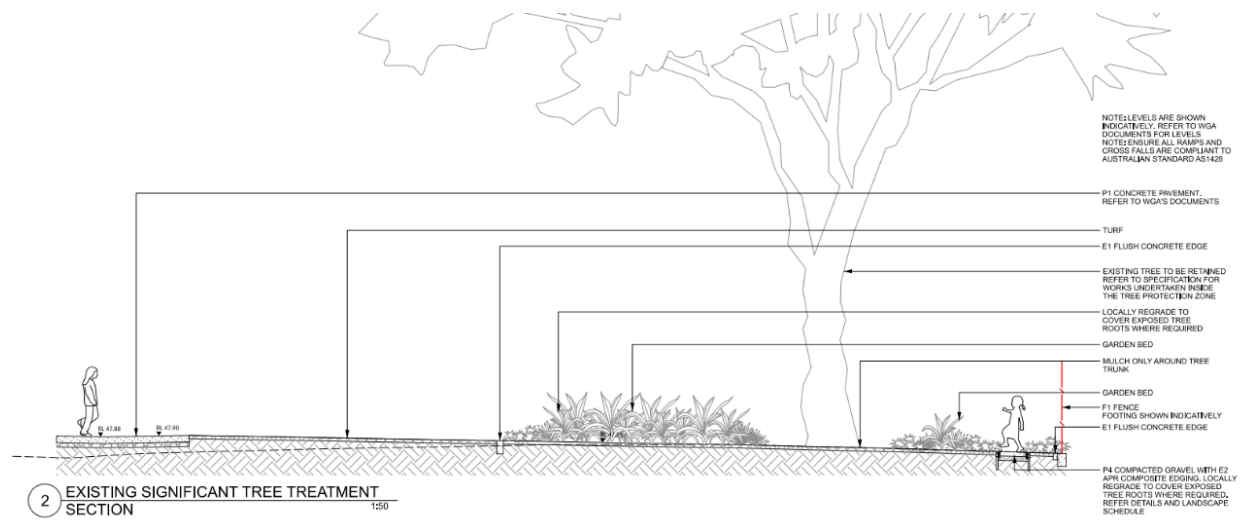
Payneham Memorial Swimming Centre, Felixstow, SA 5070



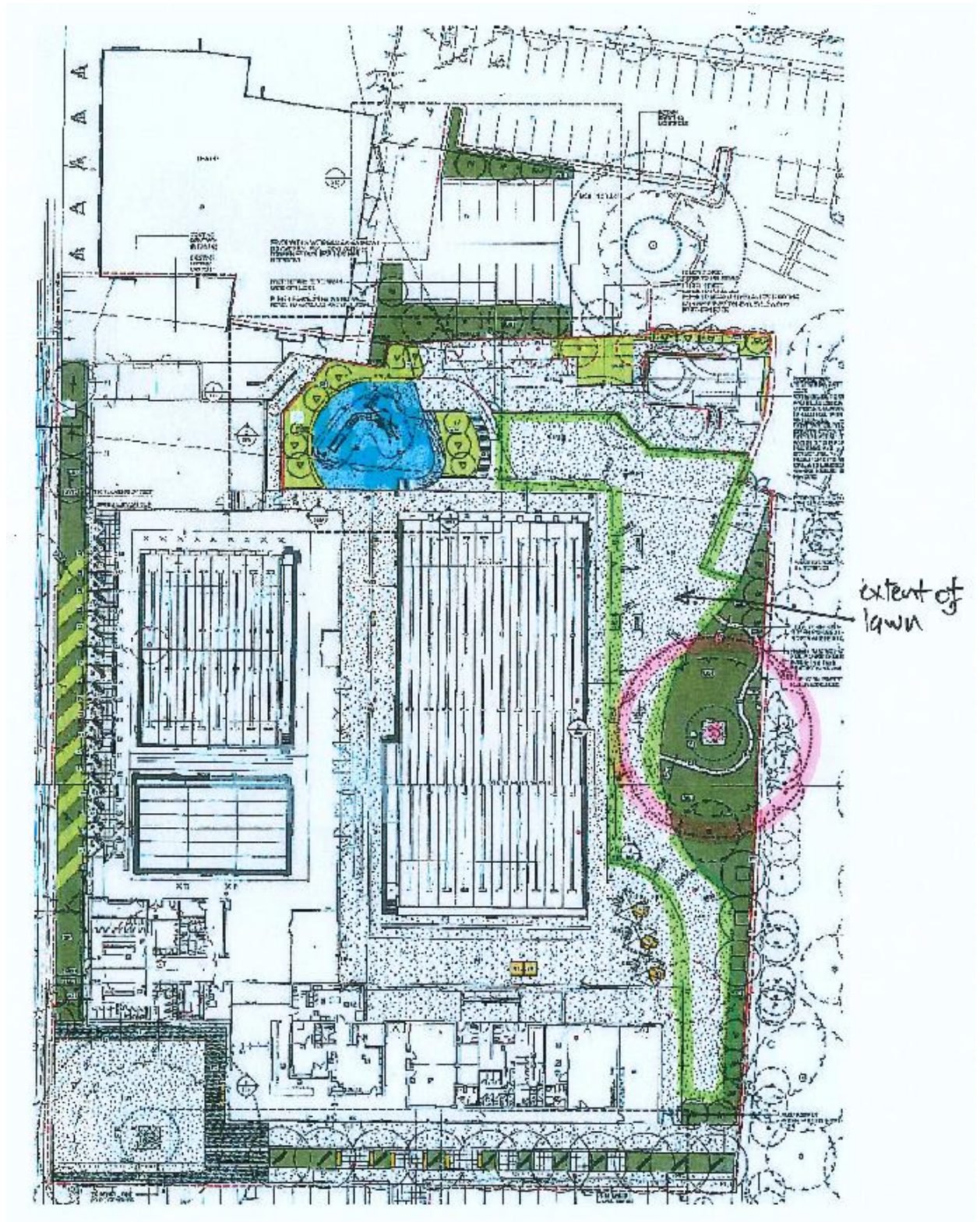
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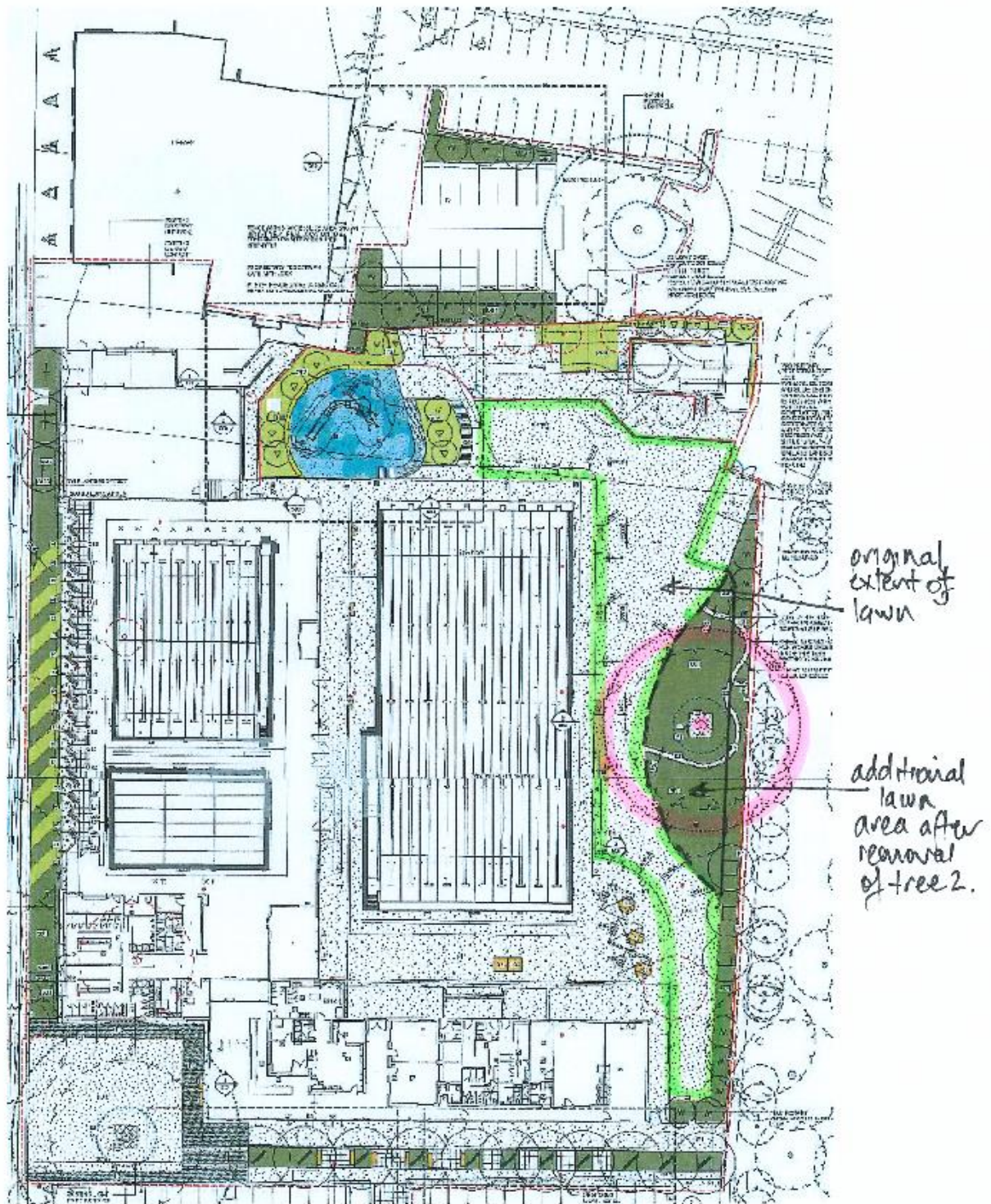
CROSS SECTION OF EASTERN SIDE OF POOL IF TREE 2 IS RETAINED – slope away from pool shown



EXISTING LANDSCAPE PLAN OF THE EASTERN SIDE OF THE OUTDOOR POOL AREA



ADDITIONAL LAWN AREA SHOULD TREE 2 BE REMOVED





Arboricultural Impact Assessment

Site: Payneham Swimming Centre
OG Road Felixstow



Prepared for: Richard Wunderlich
City of Norwood, Payneham & St Peters
Urbanvirons ref: 50466
20/6/2022



City of Norwood, Payneham & St Peters:
Payneham Swimming Centre Development

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Tree assessments and report by:

Dr Martin Ely PhD
Registered Landscape Architect (AILA)
Dip.Hort.(Arboriculture)

assisted by

Ross Greene
B.App.Sc.(Horticulture)
Dip.Hort.(Arboriculture)



*City of Norwood, Payneham & St Peters:
Payneham Swimming Centre Development*

1. Introduction

Urbanvirons was commissioned by Richard Wunderlich of the City of Norwood, Payneham & St Peters to prepare a report on three regulated trees located at the Payneham Swimming Centre. Plans have been prepared to redevelop the existing centre and the retention of the three trees is proposed. Development activities of various levels are to occur adjacent to the trees. Council has requested a report on potential impacts to the trees and to provide guidance as to how these impacts might be minimised.

The objective of this report is to:

- determine the regulated status of the trees under SA legislation.
- establish the likelihood of retaining each tree given the layout of the planned development utilising specifications and recommendations within *Australian Standard 4970-2009 Protection of trees on development sites*.
- recommend remediating measures where appropriate.

2. Method

The following activities were undertaken to complete the report:

- A site visit was undertaken on the 14th of June 2022 to inspect the trees.
- The trunks were measured to establish legislated status and protection zone radii in accordance with AS4970. The dot point at the centre of each trunk (Centre of Stem) is used to measure the protection zone radii.
- Encroachments into the protection zones were used to assess the potential level of impact that each tree will be exposed to (as per AS4970). The nature of the encroachments was also considered.
- Recommendations determined for measures to mitigate impacts caused by the implementation of the development.

3. Relevant Documentation

The City of NP&SP provided the following document:

- *Payneham Pool Redevelopment Planning Application drawings by DWP dated 18/5/2022.*

Civil drawings were not available at the time of the assessment.

The following legislation, associated planning provisions and Australian Standard were referenced during the preparation of this report:

- South Australian Planning, Development and Infrastructure Act 2016
- South Australian Planning, Development and Infrastructure Regulations 2017
- South Australian Planning and Design Code
- Australian Standard 4970-2009 Protection of trees on development sites



*City of Norwood, Payneham & St Peters:
Payneham Swimming Centre Development*

4. Tree Locations







City of Norwood, Payneham & St Peters:
Payneham Swimming Centre Development

5. Tree Data

Tree 1

Species		<i>Eucalyptus camaldulensis</i>	
Common name		River red gum	
Trunk circum. @ 1m		4.2m	
Legislated status		Significant	
Estimated size	Height	27m	
	Width	N/S 20m x E/W 19m	
Estimated age		60+ yrs	
Estimated useful life		20+ yrs	
Immediate Environment	Growing in a maintained lawn area 3.3m from the nearest site building. The area of crown overhanging the building has been managed with pruning but is still 8m+. The car park is 4.6m from the tree at its closest point. Overhang of car parking to the south is confined to 2-3 parks and has also been regularly reduced. The lawn is in good condition indicating a regular supply of water, and the tree presents as having grown with strong vigour as a result.		
Health	Good – presents as a healthy river red gum based on crown density, leaf condition and evidence of occlusive growth over wounds. It is likely able to experience some root disturbance and remain in good condition.		
Structure	Fair – a large tree that shows indicators of fast growth. The white lower bark and crown density support this assertion. There is very little root flare at the trunk/ground interface. There could be various explanations but the trunk presents as well attached to the ground. The major branch attachments look sound. There is some horizontal branch orientation. Hollowing of trunk areas is obvious. Some branch failures have occurred, with at least two of significant size. The tree appears to be popular with parrots that have been tearing at bark and contributed to hollow formation. There is a good supply of pruning points to help manage the crown going forward.		


Tree 2

Species		<i>Eucalyptus grandis</i>	
Common name		Flooded/rose gum	
Trunk circum. @ 1m		3.5m	
Legislated status		Significant	
Estimated size	Height	30m+	
	Width	N/S 22m x E/W 21m	
Estimated age		60+ yrs	
Estimated useful life		10+ yrs	
Immediate Environment	Growing in a maintained lawn area. The local conditions would support the water requirement of this species. No buildings in the vicinity. Main crown overhang is of public space within the pool compound. There is a low-use footpath to the east outside of the compound. The large pool is approx. 21m west.		
Health	Good – presents as a healthy flooded gum based on crown density, leaf condition and occlusive growth over wounds. Hollowing of trunk areas is obvious. There are some brown striations on the lower trunk which may be a low-level infection but this is very localised and likely recoverable. Regular skimming of large surface roots with a mower doesn't appear to be causing any major health impacts.		
Structure	Fair – typical of the species, a tall form with a strong central leading trunk. The central leader divides at about 20m but the emergent stems remain ascending. Branch attachments look well-formed. There is very little horizontal branch orientation but a few branches are starting to extend. Hollowing of trunk areas is obvious. The tree appears to be popular with parrots that have been tearing at bark and contributed to hollow formation. There are large, above-ground surface roots extending from the trunk base to the east and west. Those to the west extend for up to 11m.		



City of Norwood, Payneham & St Peters:
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Tree 3

Species	<i>Eucalyptus grandis</i>		
Common name	Flooded/rose gum		
Trunk circum. @ 1m	3.3m		
Legislated status	Significant		
Estimated size	Height	30m+	
	Width	N/S 20m x E/W 22m	
Estimated age	60+ yrs		
Estimated useful life	10+ yrs		
Immediate Environment	Growing in a maintained lawn area adjacent to car parking. The hard surfacing within the car park is permeable near to the tree. The local conditions would support the water requirement of this species. The only building in the vicinity is a plant room approx. 13m to the south, near the crown perimeter. A playground sits partially under the perimeter of the western crown.		
Health	Good – presents as a healthy flooded gum based on crown density, leaf condition and occlusive growth over wounds. Bark is in good condition throughout. The ground below the car park would be compacted to some degree but no major health impacts observed.		
Structure	Fair – typical of the species, a tall form but with multiple leading trunks that form between the 4 & 8m points. Branch attachments look well-formed. There is some branch orientation towards horizontal and few branches are starting to extend. Not hollowed or damaged by birds to the extent of Tree 2. Undulation of the permeable hard surfacing adjacent to the tree indicates the presence of large surface roots within the parking area.		

Relevant Characteristics of the Species

Tree 1 *Eucalyptus camaldulensis*

Eucalyptus camaldulensis (river red gum) is a well-known native tree with a wide-spread distribution in south-eastern Australia. It grows large and naturally wide, often seen as wide as it is high. It is a hardy tree reputed to have an extensive and deep root system which can exploit underground water sources. In habitat it is a tree of riverine or seasonally inundated sites and is recognised as having a high habitat value for native fauna. It is also a species recognised as having a good tolerance to root disturbance and copes well with challenging growing conditions.

Trees 2 & 3 *Eucalyptus grandis*

Trees 2 & 3 are mature specimens of *Eucalyptus grandis* (flooded gum or rose gum) a tall forest tree from the high rainfall coastal belt of eastern Australia. In habitat it can growing 50m+. It is usually seen with an ascending, almost excurrent form, with a single leading trunk and angled lateral branches. Where water is in good supply it grows very quickly. Its aesthetic can reduce during drought conditions. It was once often planted as a shade tree for parks. It is not generally suited to confined spaces such as small suburban gardens and is rarely seen for sale nowadays. The species is relatively shallow rooted and when grown in lawn areas it tends to develop substantial surface roots which later present turf management problems and potential trip hazards. Typical of numerous types of gums, large mature trees can be difficult to reduce in size with any degree of subtlety.



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Tree 1. The new building is moving further from the tree. A small new encroachment to the north.



Tree 1. Some crown lifting may be required to complete the build but pruning points are available.



Tree 2. Large, exposed surface roots present as a trip hazard.



Tree 2. They extend up to 11m from the trunk. A low-rise lawned mound or decking present as options.



Tree 3. The lawn area is being reduced to be replaced with car parking. The loss of the only open ground within the TPZ may affect the tree.



Tree 3. Permeable paving can minimise impacts.



6. Proposed Development

The proposed upgrade includes the following. Measurements are taken from Centre of Stem.

Tree1

- Demolition of existing building located approx. 3.9m from the tree.
- New building located approx. 9.6m (east) and 11.9m (north) from the tree.
- New paving located approx. 5.1m (east) and 6.1m (north) from the tree.
- Canopy over eastern section of paving.

Tree 2

- Demolition of existing in-ground pool located approx. 21m from the tree.
- Demolition of existing paving (pool coping and surrounds) located approx. 17m from the tree.
- New in-ground pool located approx. 17m from the tree.
- New paved concourse located approx. 15m from the tree.
- New fenced water slide area located approx. 14m (south) from the tree.

Tree3

- Demolition of existing playground located approx. 7m from the tree.
- Demolition of existing plant room located approx. 13m from the tree.
- New paved car park approx. 4.0m from the tree.

Information was not available on any changes in site levels such as excavation or filling or any trenching for the installation of underground services.

7. Tree Protection Zones

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

Under AS4970-2009 the Tree Protection Zone (TPZ) is the principal means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance so that the tree remains viable. The radius of a tree's TPZ is calculated by multiplying its DBH (Diameter at Breast Height) by 12. The TPZ is to be observed in a symmetrical manner with the tree being in a central position and is measured from the centre of the stem at ground level. AS4970 prescribes that a TPZ should not be less than 2m nor greater than 15m (except where crown protection is required).

The TPZ also incorporates the Structural Root Zone (SRZ) which comprises the area around the base of a tree required for its in-ground stability. An indicative SRZ radius can be determined from the trunk diameter measured immediately above the root buttress using the formula provided in AS4970. Given the root system is below ground, the calculation is indicative and generalised. Root investigation may provide more information on the extent of a root system.



Table 1 illustrates the TPZ and SRZ for the trees surveyed. This information is also presented in the TPZ plans that follow.

Table 1: Tree Protection Zones

Tree No.	Species	TPZ (radius m)	TPZ (area m ²)	Diam. at base (mm)	SRZ (radius m)
1	<i>Eucalyptus camaldulensis</i>	15.0	707	1460	3.90
2	<i>Eucalyptus grandis</i>	12.80	515	1260	3.60
3	<i>Eucalyptus grandis</i>	12.24	470	1220	3.60

8. Development Impacts

The following assessment was made of the encroachments by the existing and proposed development on the trees.

Tree 1

Existing TPZ Occupancy

- The existing building occupies approx. **136m² (19%)** of the TPZ. This has been established for a long period of time and the tree will have adapted to its presence.
- ‘Like for like’ development on the footprint of the existing building (to be demolished) would not be considered to constitute a new encroachment provided the demolition is completed with care.
- The existing bitumen car park occupies approx. **220m² (31%)** of the TPZ. This has been established for a long period of time and the tree will have adapted to its presence.
- The remainder of the TPZ is of a relatively open character.

New Encroachments

- The new building (excluding the area on the footprint of the existing building) occupies approx. **39m² (5.5%)** of the TPZ.
- The new paving (excluding the area on the footprint of the existing building) occupies approx. **125m² (17.7%)** of the TPZ.

This results in a total encroachment of approx. **164m² (23.2%)**. The encroachment is outside of the SRZ indicating that impacts on tree health are possible, but tree stability is unlikely to be compromised. Consideration should be given to mitigating this encroachment using ‘tree sensitive’ construction methods such as permeable paving installed above grade.

The re-location of the new building suggests that crown lifting may not be required to accommodate the build. The tree will tolerate pruning if required. This should be to the minimal necessary and comply with AS4373.



Tree 2

Existing TPZ Occupancy

- The exiting pathway adjacent to the Third Creek culvert occupies approx. **25m² (5%)** of the TPZ. This has been established for a long period of time and the tree will have adapted to its presence. The tree is likely to have benefited from access to additional water resources from leakage from the culvert.
- The existing in-ground pool and paving are located outside the TPZ. The remainder of the TPZ is of a relatively open character without significant structures or sealed surfaces.

New Encroachments

- The new in ground pool, paving and water slide area are located outside the TPZ with no new encroachment.

The proposed development in its current form is considered to be acceptable in relation to this tree. A number of strategies could be considered in relation to management of the exposed roots.

Tree 3

Existing TPZ Occupancy

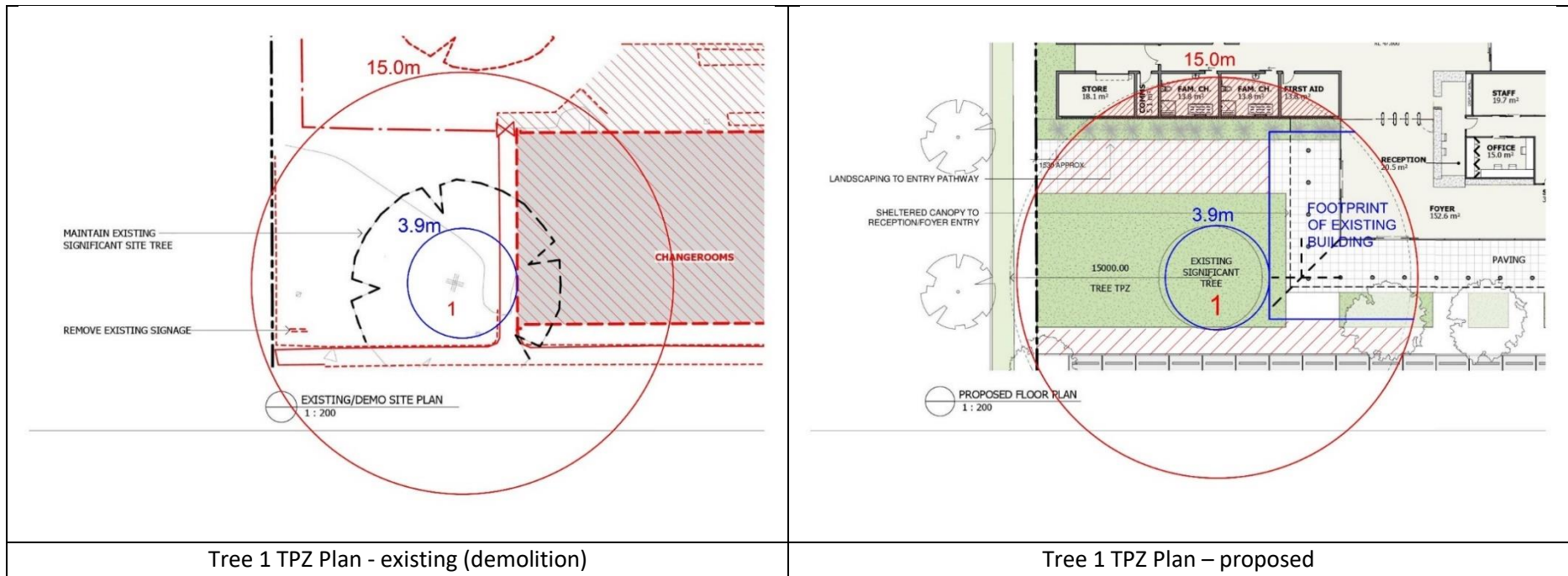
- The existing building occupies approx. **190m² (19%)** of the TPZ. This has been established for a long period of time and the tree appears to have adapted to its presence. Part of this car park comprises permeable paving, which will have mitigated impacts on the tree's root system to some extent.
- The existing playground also occupies a small part of the perimeter of the TPZ (**<5%**). The remainder of the TPZ is of a relatively open grassed character.

New Encroachments

- The new sealed car park occupies approx. **110m² (23.4%)** of the TPZ. This constitutes a major encroachment under AS4970 (>10% of TPZ). This indicates that impacts on tree health are possible, but being outside of the SRZ tree stability is unlikely to be compromised.
- Consideration should be given to mitigating this encroachment using 'tree sensitive' construction methods such as permeable paving installed above grade.



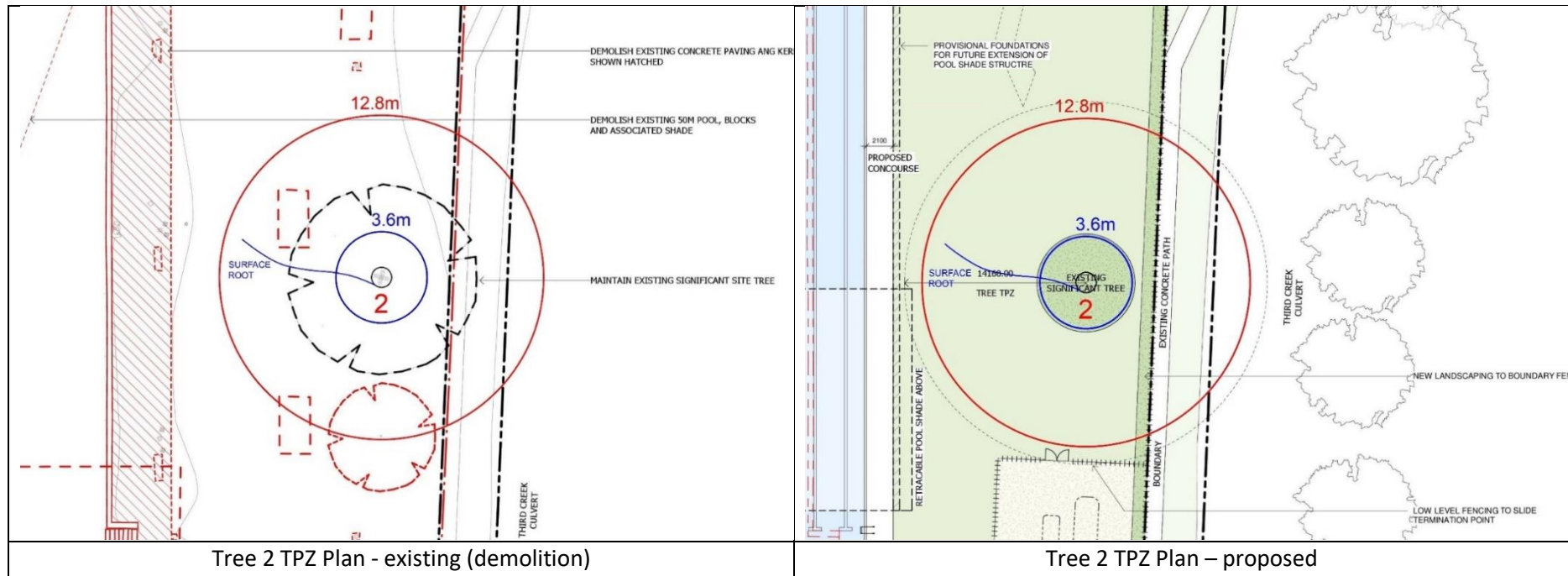
Tree 1





City of Norwood, Payneham & St Peters: Payneham Swimming Centre Development

Tree 2





Tree 3





9. Discussion

Tree 1

For Tree 1 there is a total encroachment of approx. **164m² (23.2%)**. This constitutes a major encroachment under AS4970 (>10% of the TPZ) suggesting impacts are possible and that relevant factors listed in Clause 3.3.4 should be addressed.

In this case the following are relevant:

(b) The potential loss of root mass resulting from the encroachment: number and size of roots

It is evident that reducing the encroachment of the built form has the potential to benefit the tree.

(c) Tree species and tolerance to root disturbance

It is recognised by many arborists and scientists that *E. camaldulensis* is a tree species with a good tolerance to development activities. This is due to its relatively deep root system, ability of its dimorphic root system to draw on underground water sources, and natural adaptation to disturbed riverine sites. 'Dimorphic' refers to the dual root structure of the tree. The surface root system colonises shallow soil layers to access moisture and nutrients, and to aid tree stability. Vertical (sinker) roots develop from the lateral roots and grow vertically down to the water table, providing a more secure moisture source in times of drought. These roots also provide additional anchorage for tree stability.

(d) Age, vigour and health of the tree

This is a mature tree showing good health and vigour. It presents as being able to cope with the degree of root disturbance likely to be caused by the development provided care is taken during the demolition.

(g) The presence of existing or past structures or obstacles affecting root growth

It is likely that the most important roots for tree health and stability are not located under the *in situ* building.

(h) Design factors

Hard paving within a TPZ can impact on tree health by installing impervious surfaces, and by any required excavation works. Paving within the TPZ is recommended to comprise open jointed pavers or a permeable paving system to maintain water infiltration into the soil. If possible paving within the TPZ should be installed without lowering of grade to reduce the need for excavation.



Tree 2

For Tree 2 there is no new encroachment and the proposed development is considered to be acceptable in relation to this tree. Demolition machinery should be positioned outside of the TPZ unless where absolutely necessary. This machinery should not traverse the exposed surface roots without root protection.

The main issue with use of the space appears to be the trip hazard of the large surface roots extending for 11m towards the main pool. A number of strategies could be considered in relation to management of the exposed roots. These include.

- a mulched garden bed around the tree.
- mounding the area with loam fill around the tree roots and installing lawn. The edge could either taper down or be constructed with a low retaining wall also used for seating.
- a raised timber deck on isolated pier footings around the tree.

Reducing these roots further through grinding or removing them is not recommended.

Tree 3

For Tree 3 reducing the open lawn area is proposed and there is an encroachment of new paving of approx. **110m² (23.4%)**. This constitutes a major encroachment under AS4970 (>10% of the TPZ) suggesting impacts are possible and that relevant factors listed in Clause 3.3.4 should be addressed.

In this case the following are relevant:

(b) The potential loss of root mass resulting from the encroachment: number and size of roots

It is evident that the new encroachment has the potential to affect the health of this tree if roots are cut to facilitate the installation of hard surfacing. Removing roots restricts water uptake which is critical to this species remaining in good health.

(c) Tree species and tolerance to root disturbance

Eucalyptus grandis is considered to have a moderate tolerance of development activities, partly due to its relatively shallow rooting habit.

(d) Age, vigour and health of the tree

This is a mature tree showing good health and vigour. It presents as being able to cope with some degree of root disturbance however reducing the encroachment would be a preferable outcome. It should be acknowledged that trees of this size and age do drop branches, and that to some extent installing car parks directly under the crown is installing some degree of risk for damage.

(e) Lean and stability of the tree

There is no lean or likely stability issue. Cutting roots is unlikely to destabilise the entire tree but could cause defoliation and/or dieback. Cutting roots near the SRZ on a 30m tree is generally inadvisable however.



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(g) The presence of existing or past structures or obstacles affecting root growth

Re-locating the pool plant further from the tree and retaining as open ground may be of some benefit given the root system is liable to extend beyond the perimeter of the crown.

(h) Design factors

Reducing the car park area would reduce the encroachment and would be a better outcome for the tree. Reducing by 2 spaces would reduce the encroachment by 12-13% with the residual encroachment approaching the 10% recommended as the maximum permissible within AS4970. Installing the car park without excavating would also likely reduce the impact. Site levels suggest this may be possible.

10. Conclusions and Recommendations

Tree 1

- The proposed development is considered to be acceptable in relation to this tree.
- The use of permeable paving for the new footpath is recommended to minimise impacts.

Tree 2

- The proposed development is considered to be acceptable in relation to this tree.
- The main risk for impacting this tree appears to be due to demolition. Machinery should avoid activity within the TPZ and traversing over surface roots wherever possible.
- Remediating the potential trip hazard of the surface roots is recommended for consideration.

Tree 3

- The proposed development may negatively impact this tree. This is due to the removal of open ground within the TPZ and the installation of hard surfacing. This constitutes a new encroachment of approx. 23.4%.

Impacts could be minimised by:

- Reducing the area of car parking within the TPZ. A reduction of 2 parks would reduce the encroachment closer to the 10% limit recommended by AS4970. A reduction of 4 parks would further reduce any potential impacts.
- Avoiding excavation to install hard surfacing. Installing at or above grade will minimise damage to surface roots.
- Using permeable pavers for the parking area.



Appendix – General tree protection measures

Protective measures may be beneficial to site trees during demolition and construction activities. In relation to the proposed development at this site the following general guidelines are provided.

Protective fencing

- Protective TPZ fencing is recommended around trees in close proximity to development activities.
- Ideally the TPZ fence should be set up at the standard TPZ radius. Where this is not practical the TPZ fence may be reduced but should be maintained to as large an extent as possible. A range of other ground and tree protection measures may be required in some situations.
- The fencing should be secured to restrict access. Appropriate signage is recommended to be placed on the TPZ fence.
- The fenced area shall not be used for storage of machinery or construction materials. The fenced area shall not be used for parking or vehicle access.
- Fencing can be removed to facilitate final landscaping.

Site access

- Site access should be directed around any tree protection zones.

Trunk and branch protection

- Where works are in close proximity to trees and impact by machinery is likely, trunk and branch protection can be utilised. Soft padding and timber battens can be installed around trunks and branches to avoid wounding.

Demolition

- Protective fencing is to be established prior to demolition works. Demolition works must proceed with caution within and adjacent to the TPZ. Demolition machinery must work with caution removing material in a retreating fashion away from the tree. A spotter should be employed when large machinery is working in close proximity to regulated trees.

Associated activities

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

Underground services

- No underground services should be installed within any TPZ. If underground services must pass through any TPZ they must be installed with a low impact method. This may require directional boring or hydro excavation.

Paving

- Paving materials located within a TPZ must use permeable base preparations and permeable paving materials.

Pruning

- Any pruning of regulated/significant trees is to be completed by Level 3 (minimum) qualified arborists observing the specifications of AS4373.

File Number: qA75110
 Enquiries To: Jared Barnes, Manager City Projects
 Direct Telephone: 8336 4506



City of
**Norwood
 Payneham
 & St Peters**

27 February 2024

Kieran Fairbrother
 SENIOR URBAN PLANNER
 City of Norwood Payneham & St Peters
 175 The Parade, Norwood SA 5067

Dear Keiran

ADDITIONAL INFORMATION FOR DEVELOPMENT APPLICATION 24000067

The removal of Tree 2 is being sought for a major project by an appropriately delegated Project Manager. The purposes of this letter are to provide additional information regarding:

1. the history and background of the Payneham Memorial Swimming Centre Redevelopment (the Project), including the development options and design solutions that have been considered for the Project;
2. the construction considerations for the Project, and to further explain why the removal of Significant Tree #2 is important to accommodate the Project construction works and the management of contaminated soil in particular; and
3. the landscape works which are proposed to be undertaken for the Project, including the community benefits and additional tree planting to be undertaken if the removal of Significant Tree #2 is approved.

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 Kent Town SA 5071

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townhall@npsp.sa.gov.au

Website
www.npsp.sa.gov.au

Project Background, Development Options and Design Solutions

The Payneham Memorial Swimming Centre was established in 1968 and comprises:

- a building with reception and staff office areas, toilets and change rooms, a kiosk and clubroom space used by the Payneham and Norwood Swimming Clubs;
- three (3) pools, including an 8 lane, 50 metre lap pool, a learner pool, and a toddler wading pool; and
- grassed areas with shade and barbecue / picnic facilities.

In 2014, the Council initiated a review of the City's Swimming Centres. Following community engagement and market research processes, the Council endorsed the *Swimming Centres Long Term Strategy* at its meeting held on 4 December 2017. At this meeting, the Council also resolved "that the Council liaise with Commonwealth and State Governments to investigate funding possibilities to redevelop the Payneham Memorial Swimming Centre."

The endorsed *Swimming Centres Long Term Strategy* proposes the following improvements for the Payneham Memorial Swimming Centre:

- Refurbishment of the main 50 metre pool;
- Replacement of the learners pool;
- A new water play park, including water slides;
- Upgrade of the facilities; and
- Refurbishment of the amenities building.



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In accordance with the Council's resolution made at its meeting held on 4 December 2017, detailed design documentation for the retention and refurbishment of the existing 50 metre outdoor swimming pool and other components of the Payneham Memorial Swimming Centre, was prepared and a tender process was enacted.

In this respect, at its meeting held on 3 August 2020, the Council considered the results of the tender process and resolved that the matter be deferred until a Masterplan for the Payneham Memorial Swimming Centre and Patterson Reserve (which adjoins the Centre) was presented to the Council for consideration.

In accordance with this resolution, consultants were appointed to prepare the Masterplan and in the interim, the Council established a Regional Capital Projects Committee (the Committee) to consider, amongst other matters, the Payneham Memorial Swimming Centre and Patterson Reserve Masterplan.

To this end, at its meeting held on 27 October 2020, the Committee considered the draft Masterplan and resolved the following:

1. *That the report be received and noted.*
2. *That the Regional Capital Projects Committee recommends to the Council that it reaffirm its support for the Council's decision to refurbish the main pool in accordance with the Swimming Centres' Long Term Strategy.*
3. *That a report be resubmitted to the Council at a later date regarding the Tender for the Stage 2 Refurbishment of the main pool which was deferred by the Council at the August 2020 meeting.*
4. *That TCL (Consultants) be instructed to review Options A, B1 and C1 and develop any other options that are required to complete the Masterplan.*
5. *That TCL (Consultants) consult with the existing stakeholders regarding the draft concepts before finalising the draft concepts for the Committee's consideration.*

In accordance with the Committee's resolution, the draft masterplan options were further reviewed and consulted on with stakeholders. In total, five (5) draft masterplan options were developed for the Patterson Reserve Community & Recreation Precinct and the Payneham Memorial Swimming Centre. The five options were named A, B1, B2, C1 and C2.

The final draft Masterplan was considered at a meeting of the Committee held on 16 December 2020 where the Committee resolved "that Option B2 be recommended to the Council for adoption for the purposes of progressing to the development of a draft Masterplan." This resolution was subsequently endorsed by the Council. A copy of Option B2, which was adopted for the draft Masterplan, is contained in **Attachment 1**.

In January 2021, the Council applied for \$10 million in grant funding through the State Government's *Local Government Infrastructure Partnership Program (LGIPP)* towards redevelopment of the Payneham Memorial Swimming Centre. In March 2021, the Council was notified that the State Government would support the project and provide an LGIPP grant of \$5.6 million. Soon after an amended draft Masterplan was again presented to the Committee for consideration at its meeting held on 21 April 2021, at which the Committee resolved the following:

1. *That the draft Masterplan contained in Attachment B (i.e., Option B2) be recommended to the Council for adoption.*
2. *The Committee recommends to the Council that Stage 1 of the Payneham Memorial Swimming Centre Redevelopment Project, for the purposes of detail design, construction documentation and construction, should comprise of the following elements:*
 - *50 metre pool with provision for a solid cover;*
 - *new semi-enclosed 25 metre outdoor Learners' Pool;*

- *new sports and leisure centre providing pool facilities and café, new gym/dry pool training, clubrooms and lettable function areas;*
 - *new leisure pool with interactive water play and high platform water slides;*
 - *the installation of shade, barbeques and picnic facilities on grassed embankment; and*
 - *new plant room to service the 50m Pool, new 25m Learners' Pool and the aquatic recreation equipment and facilities.*
3. *That the Committee notes that staff will now progress to the detail design and construction documentation stage of the Project for the Payneham Memorial Swimming Centre Redevelopment.*
4. *That the Committee notes that a suitable consultant will now be engaged to prepare a Prudential Report for the Council's consideration.*

In accordance with this resolution, which was subsequently adopted by the Council, a Project Brief for the engagement of design consultants was prepared and released for tender. At its meeting held on 26 October 2021, the Council considered a report on the outcome of the tender process and resolved to appoint DWP (architecture consultants) to prepare the detailed design and construction documentation. Design work commenced on 1 November 2021.

In December 2021, the Council and State Government executed the *LGIPP* Grant Deed for \$5.6 million. The Grant Deed stipulated the following project details:

The Project is the Payneham Memorial Swimming Centre Redevelopment, to be constructed at the Project Location in accordance with the Project Documents. The Project includes the following works (including approximate dimensions where specified):

- *Construct a new semi-enclosed 25 metre, eight lane Learners' Pool with an all-weather cover;*
- *Construct a new two storey building containing administration, function area, clubrooms/training facilities and change room, separate school change areas and cafe; Construct interactive water play area and high platform water slides integrated with the building;*
- *Construct a new plant room to service the refurbished 50 metre pool, 25 metre Learners Pool and water play equipment;*
- *Construct a new zero depth splash pad;*
- *Install shade shelters, barbeques and picnic facilities forming part of the broader redevelopment and upgrade of the Patterson Reserve Community & Recreational Precinct;*
- *For the avoidance of doubt, the Project excludes the refurbishment of the main 50 metre pool, which incorporates the installation of a disabled ramp and wet deck and the replacement of the existing gravity fed sand filtration system.*

At its meeting held on 2 May 2022, the Council considered a report which presented the Schematic Design for the Centre. The purpose of seeking the Council's endorsement of the Schematic Design, was to ensure that the detailed design could be progressed, as well as seeking the Council's approval to proceed with the replacement of the 50 metre Main Pool, rather than refurbishment of the structure.

Following consideration of the report, the Council resolved the following (noting that as part of the resolution the Main Pool was increased from eight (8) lanes to a ten (10) lanes):

- a. *That the Council endorses the construction of a new 50 metre main pool at the Payneham Memorial Swimming Centre.*
- b. *That the new 50 metre main pool at the Payneham Memorial Swimming Centre be a ten (10) lane main pool as per Attachment D.*
- c. *That the Schematic Design for the Payneham Memorial Swimming Centre contained in Attachment D, be endorsed as the basis of preparing the construction documentation.*

The scope of the endorsed Schematic Design, contained in **Attachment 2**, differed in some ways from the *Long Term Strategy*, Masterplan and Grant Deed project details. The project scope differences are indicated in **Table 1** below.

Table 1 – Project Scope Differences

Scope	Long Term Strategy (Dec 2017)	Masterplan (May 2021)	LGIPP Grant Deed (Dec 2021)	Schematic Design (May 2022)
Upgrade 50 m outdoor pool	refurbish	refurbish		new 10 lanes
Replace learners' pool	✓	✓	✓	✓
Build new 25 m pool (8 lanes)		semi-enclosed	semi-enclosed	indoor
Provide water play (zero depth splash pad, water slides)	✓	✓	✓	✓
Upgrade outdoor facilities (e.g. shade, bbq, furniture)	✓	✓	✓	✓
Upgrade amenities building	refurbish	new two storeys	new two storeys	new one storey
Build new plant room		✓	✓	✓
Build multilevel carpark		✓		
Expand Library carpark		✓		✓

Following the Council's endorsement, the schematic design was further refined and amended during the detail design process in response to National Construction Code requirements, Australian Standards, Royal Life Saving South Australia safety requirements and the operational requirements of the Council's staff and key stakeholders such as the Norwood and Payneham Swimming Clubs. Some of the necessary changes included:

- relocating the waterslides for operational safety and efficiency
- increasing the number of toilets and showers
- reconfiguring the indoor pools, plant room, reception, staff office, kiosk, reception, changeroom and multipurpose spaces.

The detailed design, as shown in **Attachment 3**, was substantially completed in May 2023 with the final documentation for construction including:

- demolition and removal of the existing building, swimming pools and other infrastructure assets, including the removal of the existing Library playground
- a new single storey building, comprising:
 - reception and office areas
 - two (2) clubrooms designed for use by the Payneham and Norwood Swimming Clubs
 - a multipurpose function / meeting room
 - multiple male, female and unisex all-access changerooms with showers and toilets
 - a kiosk for preparing and serving food and drinks
 - an 8 lane, 25 metre indoor pool
 - an 11 x 20 metre indoor learner's pool
 - an aquatic plant room
- a 10 lane, 50 metre outdoor pool
- a 14-metre-tall tower with two waterslides

- a zero-depth waterplay area
- outdoor showers and lockers
- shade shelters, outdoor furniture and barbeques
- external lighting and landscaping
- library carpark expansion by 15 spaces
- utility services upgrades (i.e., water and sewer connections, sewer main replacement, electrical transformer).

LGIPP Grant Deed of Variation based on the final detailed design has been executed between the State Government and Council.

The Project was tendered between July and December 2023. A construction contract was awarded on 25 January 2024. Construction commenced on-site in February 2024 and demolition activities are currently underway.

Three (3) development applications have been lodged for the Project, the details of which are included in **Table 2** below.

Table 2 – Development Applications

Application Id	Application Status	Date	Nature of development
22017508	Lodged	26 May 2022	Demolition of existing swimming pools, pavilion and minor structure and the construction of new swimming pools, pavilion, plant room, pool enclosure and shade structures
	Planning Consent Granted	14 Sep 2022	
	Building Consent In Verification	15 Sep 2022	
23024217	Lodged	25 Aug 2023	Variation to Development Application ID 22017508 comprising a variation to conditions 2 and 3, an increased setback of the development from Payneham Road and other minor internal and external changes
	Planning Consent Granted	13 Sep 2023	
	Building Consent Granted	25 Sep 2023	
	Development Approval Granted	26 Sep 2023	
24000067	Lodged	9 Jan 2024	Variation to Development Applications 22017508 and 23024217 comprising the removal of Tree 2 (a significant Flooded Gum)
	Under Assessment	current	

The first development application (22017508) was based on the Schematic Design. The second development application (23024217) was a variation based on the Detailed Design and Construction Documentation. The third development application (24000067), currently under assessment, is a further variation for the removal of a significant tree.

Throughout an extensive design and procurement process, the development options and design solutions for the Project have been continuously reviewed, tested, revised and refined in response to regulatory requirements, stakeholder needs and project opportunities, risks and constraints.

Factors further impacting Tree 2 retention

The Project team has determined to retain as many trees as possible with the design to this point incorporating regulated Trees 1, 2 and 3. As the Project has developed, several additional factors have developed affecting the reasonableness of Tree 2 retention.

The Council 2022—2027 *Tree Strategy* acknowledges that Council owned trees may be removed in association with development, streetscape upgrades and major projects. The *Tree Strategy* provides the following criteria for removing a Council owned tree.

The Council will consider the removal of a Council owned tree, only if the tree is:

- a. *dead;*
- b. *diseased, damaged, disfigured and/or failing to thrive and beyond reasonable rehabilitation;*
- c. *structurally unsafe or poses a level of risk that is considered to be unacceptable or intolerant;*
- d. *assessed as having a short life expectancy;*
- e. *causing damage to Council infrastructure or private property;*
- f. *preventing safe and convenient use of footpaths, which cannot be alleviated by a mitigation strategy;*
- g. *presenting a significant road safety risk eg traffic visibility, which cannot be alleviated by pruning or other mitigation strategy;*
- h. *preventing the development of land (eg by impeding access) and reasonable alternative development design options that would obviate the need to remove the tree have been considered;*
- i. *subject to a specific Council policy, eg: Queensland Box that is unhealthy or poorly shaped.*
- j. *subject to a strategic streetscape upgrade or major project where:*
 - *Retaining the tree is incompatible with the objectives of the project;*
 - *The tree is a species that, at maturity, will provide a low level of canopy cover in the context of the available space; or*
 - *will deliver a net gain in the:*
 - *number of trees; and/or*
 - *long term canopy cover.*

Other considerations may include:

- k. *the amenity value of the tree.*

In terms of the Council's tree removal criteria, the request to remove Tree 2 has merit. Although the original intent to retain Tree 2 is understood, a close read of the arborist report now casts doubts and uncertainty about the useful life expectancy of the tree and the ability to appropriately retain it through construction and incorporate it into the new development. The safety concerns, which are stated in the original application to vary the approval, are significant particularly as the estimated usage of the pool has become better understood. It is anticipated 300,000 users will visit the site, with many using the lawn area in the vicinity of Tree 2. The wisdom of retaining a potentially unsafe tree in a crowded public space is therefore questionable.

Tree 2 retention also required significant design compromise regarding sightlines and visibility. The required lifting of the pool to protect against flood levels has resulted in the grass area sloping away from the pool out of necessity through Tree 2 retention. This outcome is also far from ideal resulting in a less desirable and less safe public space for the community.

Shade and amenity are also impacted, with Tree 2 effectively being inappropriately located on the east boundary of the, and therefore providing little shade and amenity to the public and restricting the opportunity to plant new shade trees within the lawn area. New environmental and cost considerations have now arisen, which when considered in combination with the safety and amenity issues and the objectives of the Project, add substantial weight to the valid reasons for removing Tree 2.

As further background, the Council engaged LBWco (environmental consultants) to undertake a Preliminary Site Investigation (PSI) of the Payneham Memorial Swimming Centre site. The PSI completed in March 2022, comprised a desktop site history investigation and limited intrusive soil investigation. The PSI desktop investigations found historical aerial photos which are contained in **Attachment 4**. As can be seen in **Figures 1 & 2** below, Third Creek originally ran through the site.

The creek was infilled and realigned along the eastern boundary to accommodate the development of the original swimming pool facility in the 1960s.

FIGURES 1 & 2: HISTORICAL AERIAL PHOTOS OF SITE



The PSI soil investigations identified elevated concentrations of polycyclic aromatic hydrocarbons (PAH) in the soil samples. PAHs are chemicals that can pose potential risks to human and ecological health. Therefore, the resulting PSI recommendations included preparing a Remediation Management Plan (RMP) and Construction Environmental Management Plan (CEMP) to guide the effective management of contaminated soil.

A combined RMP and CEMP was subsequently prepared and issued by LBWco on 31 August 2022. The RMP/CEMP Report identified two options for remediation of contaminated soils as follows.

Option 1 – Excavate PAH impacted soil with off-site disposal

This option proposes PAH impacted soils are excavated and disposed off-site where materials are considered surplus following excavations to achieve required development levels. This option will remove the contamination source.

Option 2 – On-site retention / encapsulation of impacted soils

This option proposes residual PAH impacted soils are retained beneath either hardstand surfaces such as bitumen/concrete or beneath a visual marker layer overlain with a suitable growing medium and landscaping. As PAH impacted soils were assessed to not be leachable, containment beneath hardstand surfaces or landscaping is not considered to pose a risk to groundwater and will eliminate the pathway of exposure between the residual contaminant source and the receptor.

Option 2 was considered the most appropriate option based on the following considerations.

- Option 2 aligns most closely with the EPA waste management hierarchy with retention of waste onsite preferred over offsite disposal.
- The PAHs in soil were assessed to not be leachable and therefore Option 2 does not pose a risk to groundwater.
- Option 2 is the most sustainable of the two options as it eliminates transport of waste and does not add waste to landfill.
- Option 2 is the most cost efficient of the two options as it is very costly to transport and dispose of contaminated waste.

In May 2023, the Council engaged ProcurePM (project management and procurement consultants) to assist the Project team in reviewing and finalising the drawings, specifications and draft contract documents in preparation for tender. During this process, it was identified that there was insufficient information from the previous soil investigations to accurately quantify the amount of soil contamination. Insufficient information could lead to significant cost variations and delays to the Project during construction. Therefore, the Council commissioned additional soil investigations and testing to be able to determine the amount of site contamination.

The additional soil investigations and testing identified several chemical contamination hotspots. Test pits also confirmed that former creek bed was backfilled with material containing construction and demolition waste (e.g., brick, concrete, metal, asbestos), rubbish and other contaminants. A plan showing the soil bore locations, contamination hotspots and waste classifications is contained in **Attachment 5**. A summary of the hotspot areas, depths, volumes and waste classifications is provided in **Table 3** below.

Table 3 – Contamination Hotspot Areas and Volumes

Hotspot Area Reference	Location	Inferred Contamination Depth Interval (m)	Approximate Area (m ²)	Estimated Volume (m ³)	Waste Classification
A (not including B)	Northern Area	0 to 0.5 – 1.0 (0.75 average)	903	677	LLCW
B	Former Creek	0 to 2.5	320	800	LLCW asbestos contaminated
C	Former Creek	0 to 2.5	112	280	IW asbestos contaminated
D	Former Creek	0 to 2.5	510	1,275	IW
E (not including E1)	Southern Building Footprint	0 to 0.3	1,094	328	LLCW
E1	Southern Building Footprint	0 to 1	16	16	LLCW

The amount of site contamination is estimated to be 3,376m³. In further discussion with the Project's engineering and environmental consultants, it was then determined that the option for retention and encapsulation of contaminated soils onsite was not practical for the following reasons.

1. The site contamination is primarily uncontrolled fill and cannot be classified and approved as engineered fill under the buildings or pool structures without excavating, grading and further testing of soils during the construction stage. This would be an inefficient process without any guarantee of how much contaminated soil would actually be suitable for reuse.
2. Due to the increase in the total area of the site being developed to accommodate the buildings, swimming pools, zero depth play and waterslides and tree protection zone, there is limited suitable area available (approximately 600m²) on-site to retain and encapsulate contaminated soils.

On this basis, it was determined that excavating the impacted soil with off-site disposal would be the preferred remediation option. A copy of the Site Remediation Plan issued for tender and construction is contained in **Attachment 6**.

Construction Works and Rationale for Removing Significant Tree #2

Project construction will take approximately two years. The key construction program milestones and dates are shown in **Table 4** below.

Table 4 – Construction Program Milestones

ID	Construction Milestone	Date	Month
1	Commencement of Construction Services	Mon 08/01/24	1
2	Commence Works On Site	Mon 5/02/24	2
3	Demolition Existing Centre Complete	Thu 21/03/24	3
4	Civil & Remediation Works Complete	Fri 24/05/24	5
5	Balance Tank Substructure Complete	Mon 29/07/24	7
6	Pool Hall - 25m & LTS Pool Shells Complete	Wed 21/08/24	8
7	Pool Hall - Structural Steel / Suspended Slabs Complete	Mon 23/09/24	9
8	Pool Hall - Geogrid Timber Feature Ceiling Complete	Fri 20/12/24	12
9	Pool Hall - Crane Lifts Complete / Commence 50m Pool	Fri 17/01/25	13
10	Pavilion - Internal Fit Out & Finishes Complete	Mon 30/06/25	18
11	Pool Hall - Internal Fit Out & Finishes Complete	Wed 13/08/25	20
12	External Works Complete	Thu 18/09/25	21
13	Pool Contractor Handover	Fri 21/11/25	23
14	Practical Completion (Net)	Thu 27/11/25	23
15	Practical Completion (Gross)	Mon 26/01/26	25

Construction will occur in four stages which are shown in **Attachment 7**. Stage 1 includes the building enabling works such as demolition, soil remediation and bulk earthworks, pad preparation and compaction, and piling for the buildings, pools, zero depth play and waterslides. Demolition is currently in progress and will be completed in March 2024. Following demolition, there will be approximately two months of work to undertake the civil works and remediate the site.

The civil earthworks and piling will be very extensive and complex to undertake. The levels of cut and fill across the site vary depending on the depth of the pools and building foundations. A grid of piles will be driven approximately every four to five metres under the aquatic structures.

While Tree 2 has always been a constraint to the project's design and construction, its removal has only been seriously considered since receiving tenders in September 2024 and understanding how the tree's retention influences the project's construction methodology and costs. While the overall development site is relatively large, there will actually be very limited space to stockpile, sort and test soils for reuse, and subsequently retain and encapsulate soils on site. This was a key consideration in changing the preferred remediation option from on-site retention to off-site disposal prior to tender.

The cost to excavate and dispose of the known site contamination (i.e. 3,376m³) is approximately \$1.8 million. This is a significant additional project cost which will be borne by ratepayers.

Discussions with the contractor during tender confirmed that the TPZ for Tree 2 affected their construction methodology and ability to maximise construction program efficiency. If Tree 2 were to be removed, there would be almost double the area available on-site for stockpiling and handling soil materials during bulk earthworks. In addition, the contractor would have better site access and ability to utilise machines (e.g. excavators, dump trucks, cranes) and store building materials, thereby improving the efficiency of earthwork operations as well as the overall construction of the pools and buildings. Importantly however, the additional area would make it practical to revert to on-site retention and encapsulation of contaminated soils, which more closely aligns with the EPA waste management hierarchy (retention of waste onsite preferred over offsite disposal) and potentially save several hundreds of thousands of dollars or more in project costs.

With the significant safety concerns now being compounded with environmental and cost considerations, it is no longer considered reasonable, practical, safe or appropriate to retain Tree 2. As such, on removal, the opportunity would exist to not only eliminate safety concerns, but improve environmental outcomes and improve the public's experience of this new community facility.

Proposed Landscape Works

The Landscape Plans which have been issued for construction (IFC) are contained in **Attachment 8**. There are 43 new trees to be planted, the details of which are included in **Table 5** below.

Table 5 – Tree Planting Schedule

CODE	BOTANIC NAME	DENSITY	SIZE (AT MATURITY)	INSTALLATION SIZE	QTY
TREES					
	<i>Catalpa bignoniodes</i> 'Nana' Designer Indian-Bean Tree	As Shown	5 x 3m	200L	14
	<i>Corymbia ficifolia</i> 'Fairy Floss' Flowering Gum	As Shown	6-8 x 5-7m	100L	12
	<i>Eucalyptus leucoxydon</i> 'Euky Dwarf' Dwarf Yellow Gum	As Shown	5-8 x 4-5m	100L	3
	<i>Eucalyptus leucoxydon</i> subsp. <i>Megalocarpa</i> Large Fruited South Australian Blue Gum	As Shown	8-10 x 5-7m	100L	3
	<i>Acer x freemanii</i> 'Jeffersred' Autumn Blaze Maple	As Shown	13 x 10m	200L	11
				Total	43

As previously outlined in the development application to remove Tree 2, the retention of Tree 2 is also a constraint to full use and enjoyment of the development site by the community. A large number of patrons are expected to use the pool facilities following redevelopment. Lawn area is extremely valuable and important for pool users to picnic and sunbathe.

The roots of Tree 2 are extensively protruding above ground level and present a trip hazard. The tree species (i.e. *Eucalyptus grandis* – Flooded Gum) is also a potential risk for sudden limb failure. For these reasons, a large garden bed has been designed beneath Tree 2 to prevent people from walking or sitting beneath the tree and thereby reduce the safety risk to the public. However, this 'Safety in Design' measure will significantly reduce the lawn area that will be available for use by the public.

It is worth noting that Tree 2 has been a very fast-growing tree. As can be seen in the aerial imagery (refer to **Attachment 4**), when the Payneham Memorial Swimming Centre was first built in 1968, all existing trees which had been previously growing on the site and along Third Creek were removed, except for a river red gum (i.e. Tree 1) which is located at the southwest corner of the building. After ten years (1979), several trees had already been planted onsite. Following twenty years (1989), the canopy of Tree 2 had already grown significantly larger than most other trees on site.

In the 29 April 2022 Tree Report by Urbans Arboriculture, which was submitted with the Development Application, it states that Tree 2 "can grow large where water is available, with heights of 50m reported." However, the species "lacks a lignotuber which suggests biologically its strategy is not geared to longevity." The estimated useful life is 10+ years. The Payneham Memorial Swimming Centre Redevelopment has been designed to last and serve the community for the next 50+ years.

An Alternate Landscape Plan, which is contained in **Attachment 9**, illustrates the proposed changes to the landscape if Tree 2 is approved to be removed. The proposed changes include:

- less garden bed area / more lawn area available for public use; and
- ten (10) additional new trees, comprising:
 - 4 no. *Zelkova serrata* (Japanese Zelkova), an exotic species which will provide shade in the lawn area;

- 3 no. *Corymbia ficifolia* 'Fairy Floss' (Flowering Gum), an ornamental Australian native tree species to be planted in the garden bed adjacent the east boundary fence; and
- 3 no. *Eucalyptus leucoxylon ssp megalocarpa* (Large-fruited Blue Gum), a South Australian tree species also to be planted in the garden bed adjacent the east boundary fence.

The ten (10) additional trees will increase the total number of new trees to be planted as part of the Project from 43 to 53. If Tree 2 is approved for removal, it is proposed that the ten (10) additional trees would be installed:

- within two (2) years of the removal of the significant tree;
- as part of the landscape works for the Project;
- at an appropriate advanced size (e.g. 100L) which is commercially available; and
- at least ten (10) metres from the swimming pool.

It is expected that within 10-15 years, the Japanese Zelkova trees will provide a good amount of natural shade for users in the lawn area. The Flowering Gum and Large-fruited Blue Gum trees will provide food (i.e. nectar) and habitat for native wildlife (e.g. birds, insects).

Conclusion

In summary:

- the Project has been through an exhaustive planning and design process over several years;
- the design process included various iterations of community consultation, committee recommendations and Council decisions incorporating a range of matters important to the community including size, scale and layout of the facility;
- a review of the community outcomes following final investigation, tender assessment and contract award has re-highlighted the excessive compromises being made from both a cost and safety perspective in attempting to retain Tree 2;
- the site has contaminated soils, and the preferred method of site remediation is on-site retention and encapsulation, which is the most sustainable and cost-effective option;
- Tree 2 has a useful life of 10+ years, whereas the new development will have an asset life of 50+ years;
- retaining Tree 2 requires the off-site disposal of contamination and will reduce the available lawn area available for public use;
- removing Tree 2 will provide substantial community benefits through significant project cost savings and more lawn area and shade available for public use; and
- removing Tree 2 will also eliminate the substantial design compromises and safety risks associated with retention of Tree 2; and
- ten (10) additional trees will be planted as part of the Project in replacement of Tree 2.

On this basis, it is no longer considered reasonable to accept foreseeable safety risks, poor environmental outcomes, poor financial outcomes and poor amenity for the community through attempting to retain Tree 2 on a site where it is simply not compatible with the intended use or Project objectives. As such Tree 2 is being recommended for removal by an appropriately delegated Council Project Manager.

Yours sincerely



Jared Barnes
MANAGER, CITY PROJECTS

Attachment 1 – Draft Masterplan Option B2

Draft Masterplan Option B2



Attachment 2 – Schematic Design

D

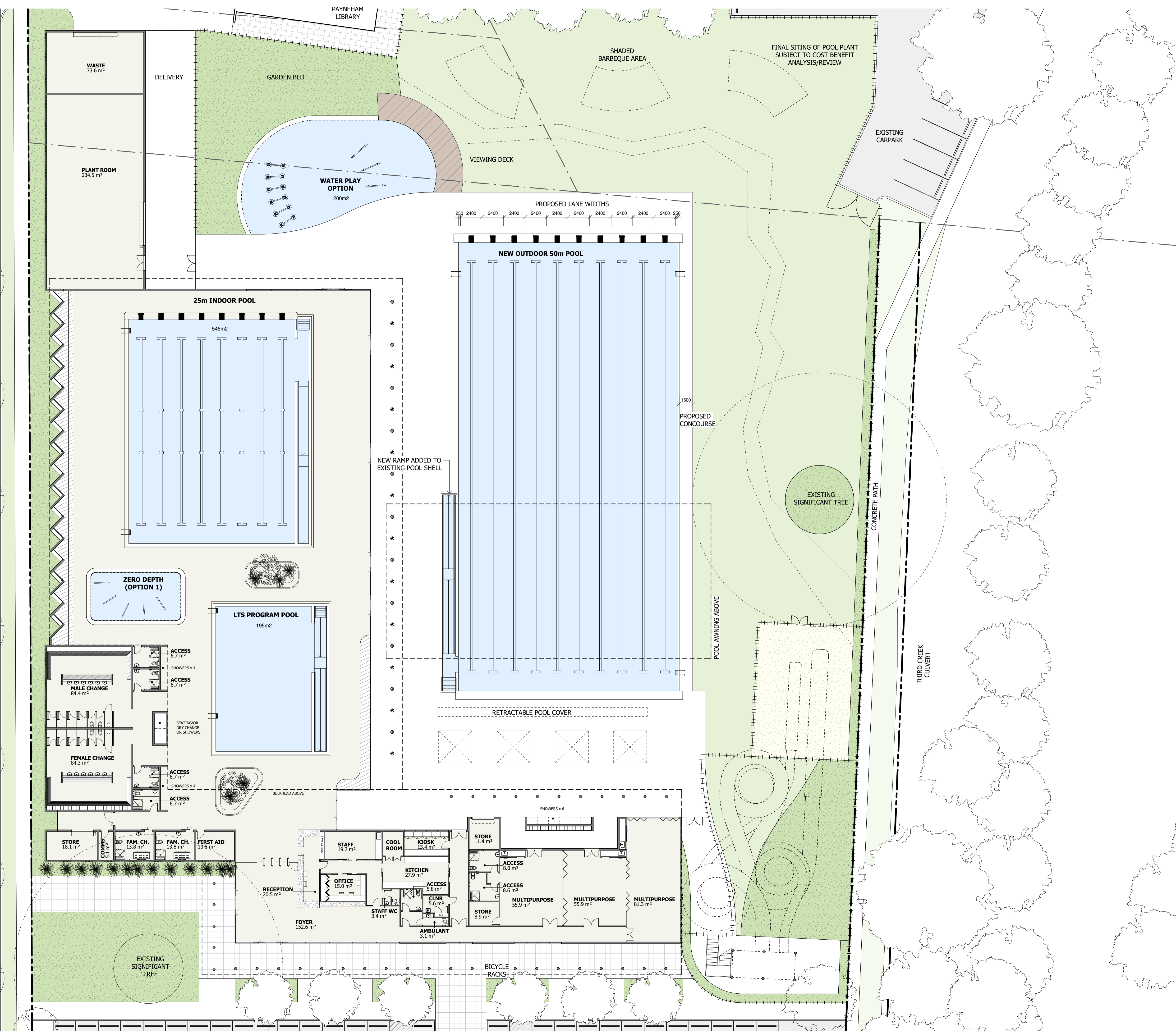
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SCHEMATIC DESIGN
 NOT TO BE USED DURING CONSTRUCTION

Issue	Description	Date	Chk	Auth
1	Architect/ Designer dwp www.dwp.com			

Client
CITY OF NORWOOD PAYNEHAM AND ST PETERS

Project
PAYNEHAM POOL REDEVELOPMENT

Location
 194 O G Rd,
 Felixstow SA 5070

Project Number
21-0255

Drawing
PROPOSED FLOOR PLAN - 10 LANE POOL OPTION

Scale (A1) Date Printed
 1 : 200 27/04/2022 11:05:03 AM

Drawing Number Issue
AA1005



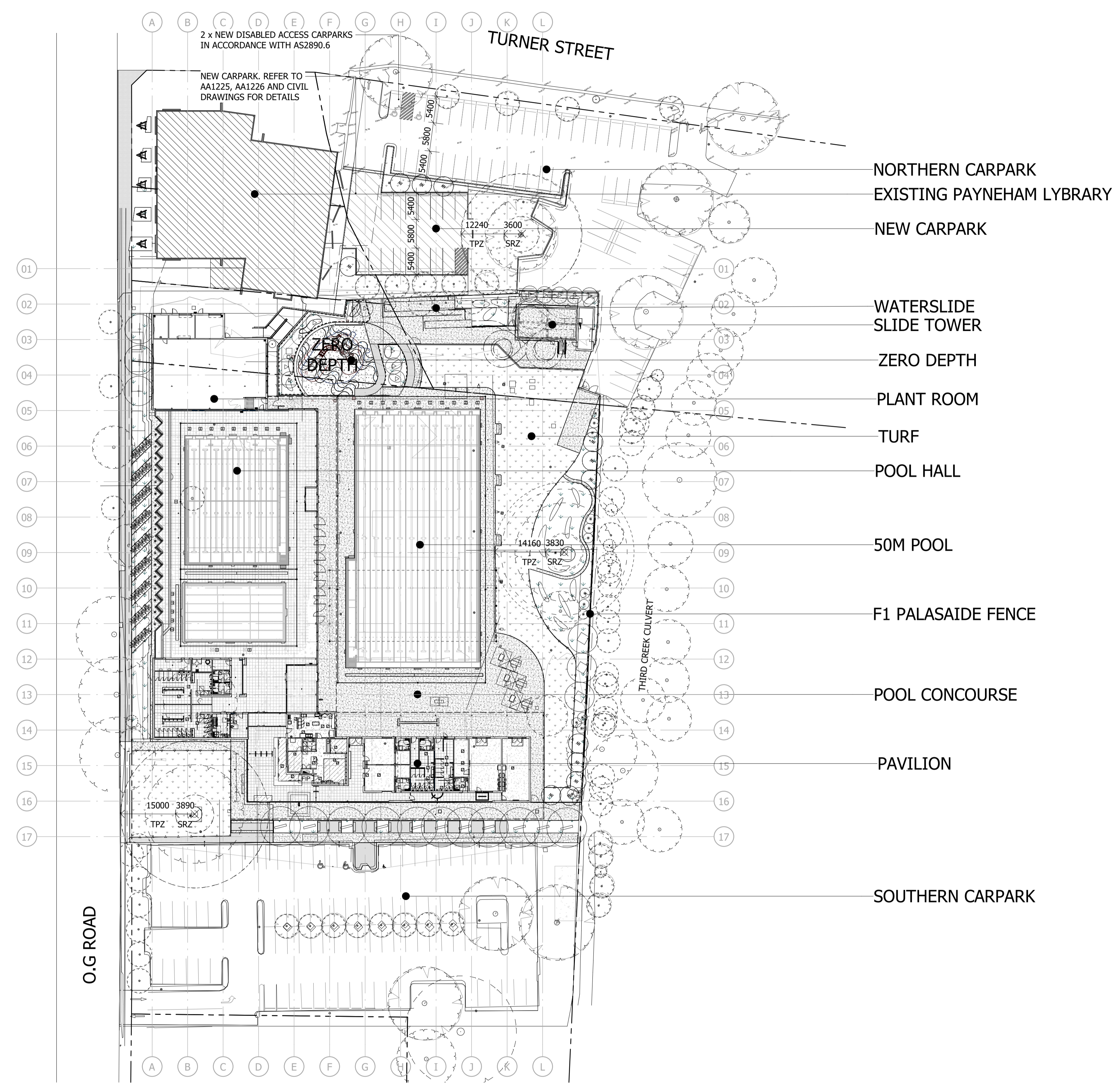
File Name: B:\194 O G Rd\21-0255_Payneham Pool Redevelopment\21-0255-AR-PPR-R20.rvt

Attachment 3 – Detailed Design

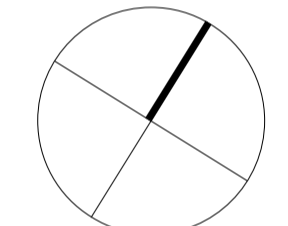
REFER TO LANDSCAPE ARCHITECTS AND CIVIL ENGINEER DRAWINGS FOR EXTERNAL WORKS DETAILS

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- NORTHERN CARPARK
- EXISTING PAYNEHAM LYBRARY
- NEW CARPARK
- WATERSLIDE SLIDE TOWER
- ZERO DEPTH
- PLANT ROOM
- TURF
- POOL HALL
- 50M POOL
- F1 PALASADE FENCE
- POOL CONCOURSE
- PAVILION
- SOUTHERN CARPARK



FOR CONSTRUCTION
FOR USE DURING CONSTRUCTION

Issue	Description	Date	Chk	Auth
1	CONSTRUCTION ISSUE	07/12/2023	JM	

Architect/ Designer
dwp.design
www.dwp.design

Client
CITY OF NORWOOD PAYNEHAM AND ST PETERS

Project
PAYNEHAM MEMORIAL SWIMMING CENTRE REDEVELOPMENT
Location
194 O G Rd,
FELIXSTOW SA 5070

Project Number
21-0255

Drawing
SITE PLAN - NEW WORKS

Scale (A1)
1 : 500
Date Printed
7/12/2023 10:16:11 AM
Drawing Number
Issue

A1101 **1**



Attachment 4 – Aerial Imagery

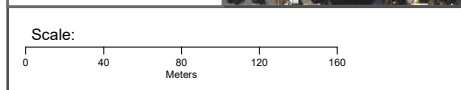
Aerial Imagery 2021

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

- Site Boundary
- Buffer 150m



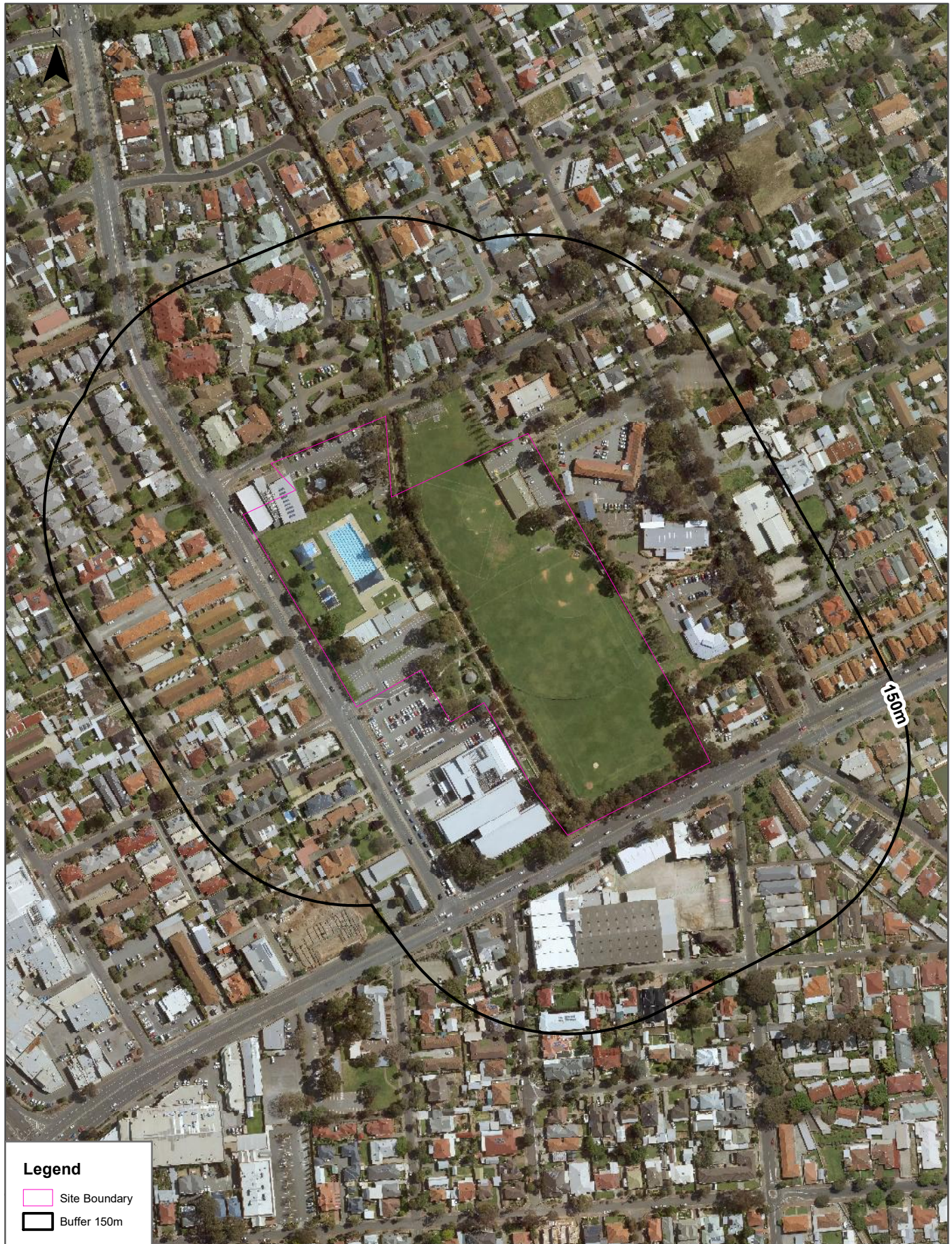
Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 54

Date: 22 November 2021

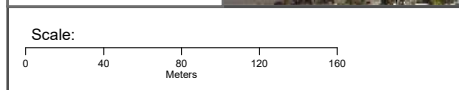
Aerial Imagery 2016

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

- Site Boundary
- Buffer 150m



Data Source Aerial Imagery:
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Coordinate System:
GDA 1994 MGA Zone 54



Date: 22 November 2021

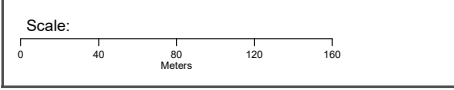
Aerial Imagery 2011

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

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-  Buffer 150m



Data Source Aerial Imagery:
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Coordinate System:
GDA 1994 MGA Zone 54

Date: 22 November 2021

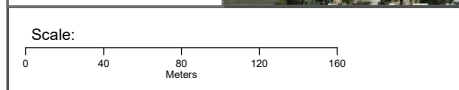
Aerial Imagery 2006

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

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- Buffer 150m



Data Source Aerial Imagery:
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Coordinate System:
GDA 1994 MGA Zone 54

Date: 22 November 2021



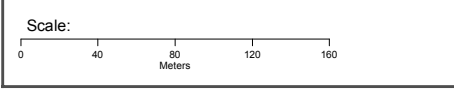
Aerial Imagery 1999

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

- Site Boundary
- Buffer 150m



Data Sources Aerial Imagery: © South Australia Department for Environment & Water

Coordinate System: GDA 1994 MGA Zone 54

Date: 18 November 2021

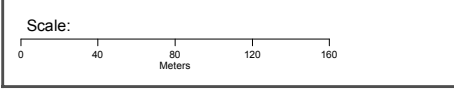
Aerial Imagery 1989

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

- Site Boundary
- Buffer 150m



Data Sources Aerial Imagery: © South Australia
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Coordinate System:
GDA 1994 MGA Zone 54



Date: 18 November 2021

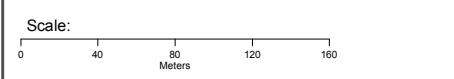
Aerial Imagery 1979

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

-  Site Boundary
-  Buffer 150m



Data Sources Aerial Imagery: © South Australia
Department for Environment & Water

Coordinate System:
GDA 1994 MGA Zone 54

Date: 18 November 2021

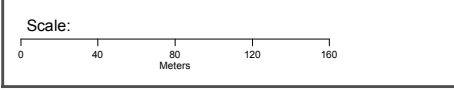
Aerial Imagery 1968

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

- Site Boundary
- Buffer 150m



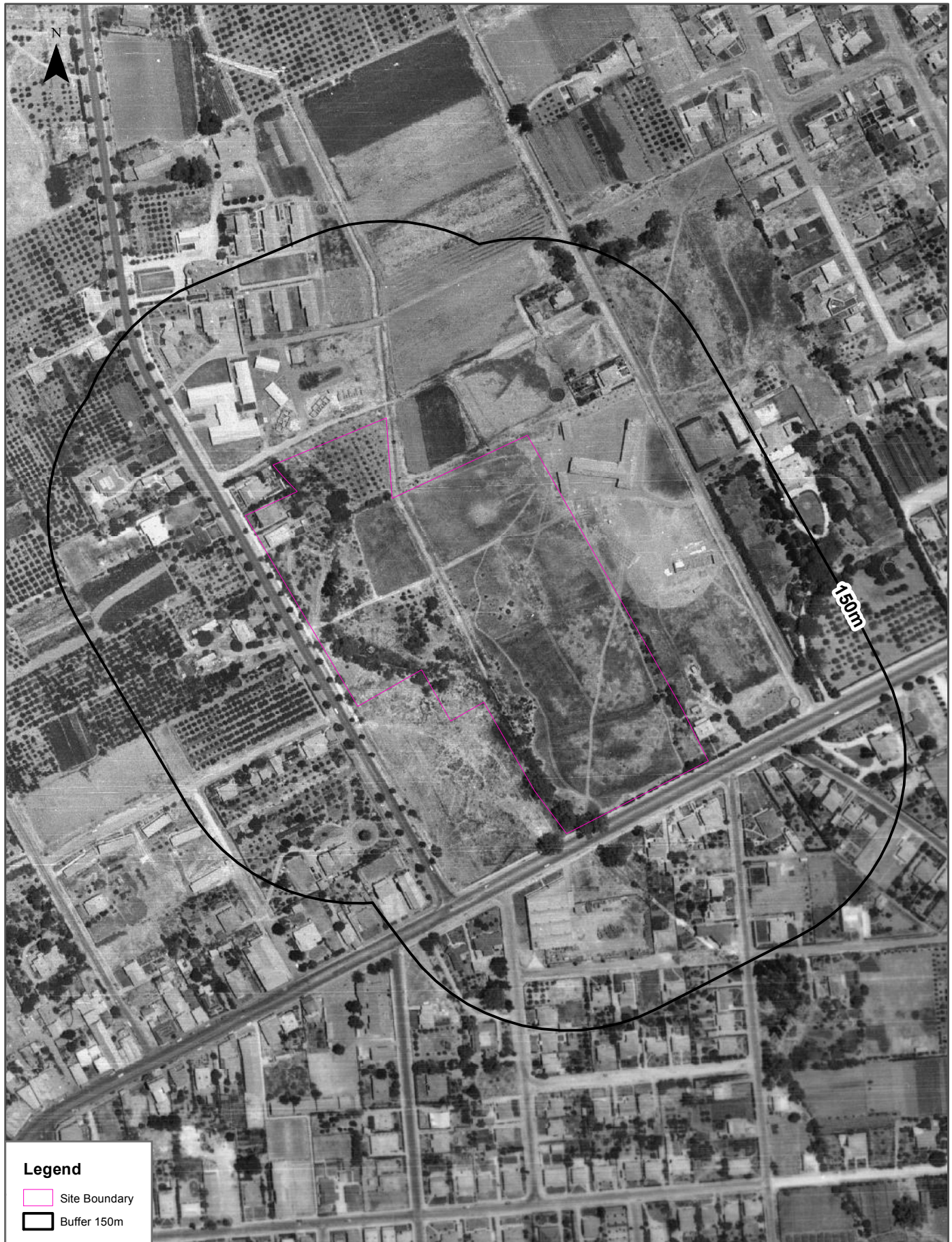
Data Sources Aerial Imagery: © South Australia
Department for Environment & Water

Coordinate System:
GDA 1994 MGA Zone 54



Date: 18 November 2021

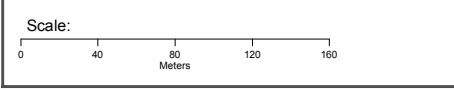
Aerial Imagery 1959

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

-  Site Boundary
-  Buffer 150m



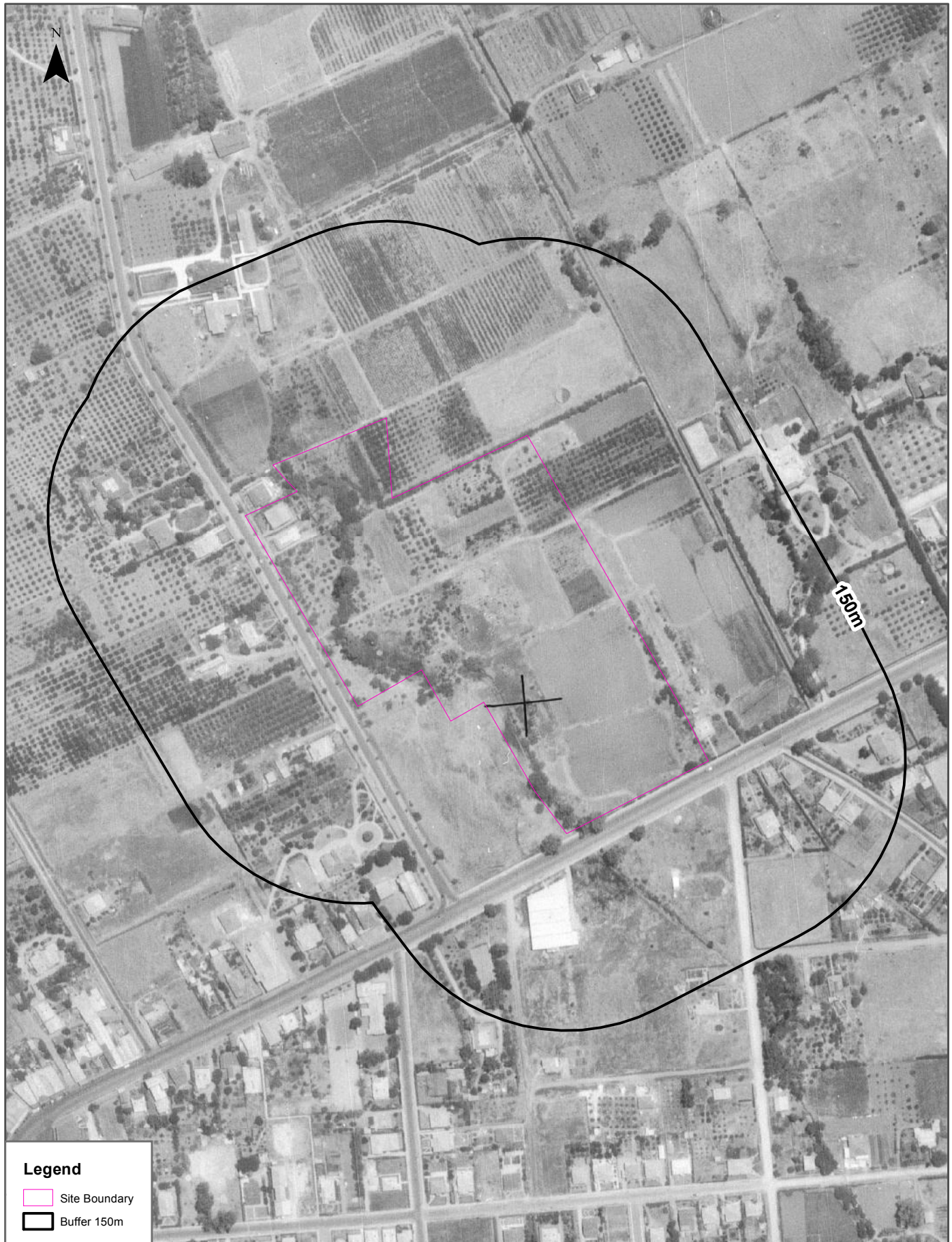
Data Sources Aerial Imagery: © South Australia
Department for Environment & Water

Coordinate System:
GDA 1994 MGA Zone 54



Date: 18 November 2021

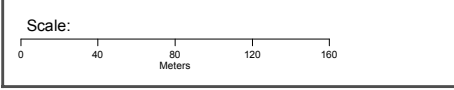
Aerial Imagery 1949

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

-  Site Boundary
-  Buffer 150m



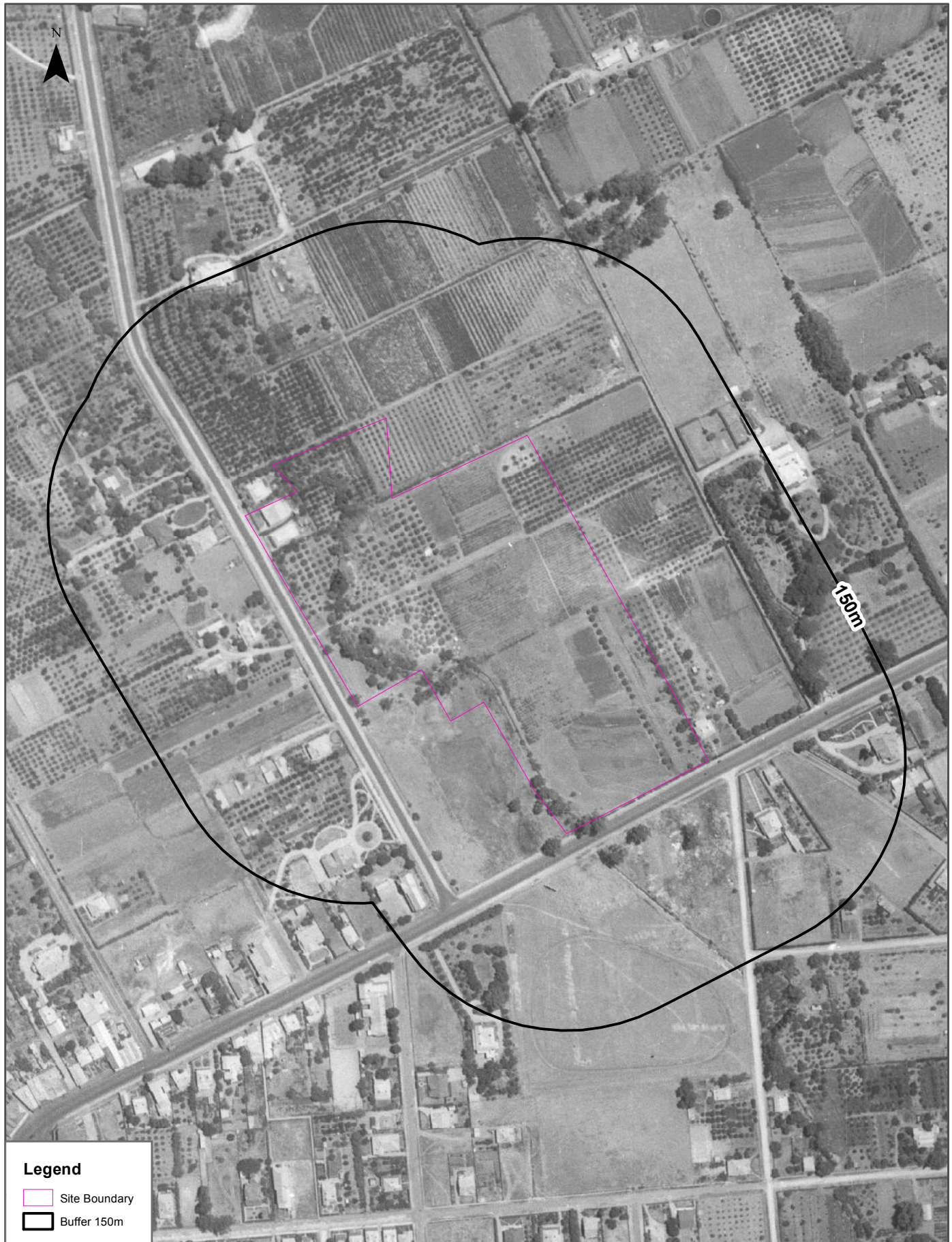
Data Sources Aerial Imagery: © South Australia Department for Environment & Water

Coordinate System:
GDA 1994 MGA Zone 54

Date: 18 November 2021

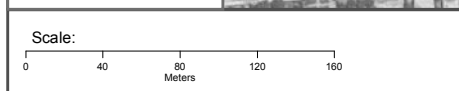
Aerial Imagery 1936

Payneham Memorial Swimming Centre, Felixstow, SA 5070



Legend

- Site Boundary
- Buffer 150m



Data Source Aerial Imagery:
©2021 Geoscience Australia

Coordinate System:
GDA 1994 MGA Zone 54

Date: 18 November 2021

Attachment 5 – Contamination Hotspot Plan

FIGURE 3B Waste Classification and Development Plan

Client: City of Norwood Payneham and St Peters
 Project: Site Remediation Plan
 Site: Payneham Memorial Swimming Centre, Felixstow, SA

Legend

- Development boundary
 - Inferred centre line of former creek
 - Soil bore (WGA, 2022)
 - Soil bore (LBWco, 2022)
- Investigation Locations (LBWco, 2023)
- Soil bore - 1.5 m
 - Soil bore - 3 m
 - Soil bore - 6 m
- Test pit targeting former creek alignment
 - Uncontrolled fill encountered in inferred former creek bed*

SB100 Bore ID
(0.8) Fill depth (m)

* Uncontrolled fill not identified in TP02

Indicative Waste Classification of Soils

- Intermediate Waste
- Intermediate Waste - potentially ACM contaminated
- Low Level Contaminated Waste
- Low Level Contaminated Waste - potentially ACM contaminated

All remaining areas within development area inferred to be chemically compliant with Waste Fill criteria.

It is assumed that creek backfill material within the 50 m pool footprint was removed during pool construction.

A Contamination Hotspot Area

Note: development plan overlay provided by the City of Norwood Payneham and St Peters



 N	0 10 20 30 m		
	Spatial Reference: GDA2020 MGA Zone 54		
	Source: Nearmap.com (April, 2023)		
Job No	211302	Scale at A3:	1:600
Drawn	JC	Rev	0
Approved	AG	Date	24/07/2023



Attachment 6 – Site Remediation Plan



DELIVERING
**ENVIRONMENTAL
SOLUTIONS**



Payneham Memorial Swimming Centre, 194 O.G. Road, Felixstow, SA 5070 Site Remediation Plan

Report for City of Norwood Payneham & St Peters

**LBWco Pty Ltd**

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Payneham Memorial Swimming Centre, 194 O.G. Road, Felixstow, SA 5070 Site Remediation Plan

Report for City of Norwood Payneham & St Peters

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- A LBWco Figures and Hotspot Area Coordinates
- B Underground Asbestos Pipe Information

List of Acronyms

ACM	Asbestos containing material
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013)
BGL	Below ground level
CEMP	Contractor's Environmental Management Plan
CRMP	Contamination Remediation Management Plan
DIT	Department for Infrastructure and Transport, Government of South Australia
EPA	Environment Protection Authority, Government of South Australia
EP Act	<i>Environment Protection Act 1993</i> , Government of South Australia
IW	Intermediate Waste
IWS	Intermediate Waste Soil
LBWco	LBWco Pty Ltd
LLCW	Low-level Contaminated Waste
mBGL	metres below ground level
NPSP	City of Norwood, Payneham & St Peters
PAH	Polycyclic aromatic hydrocarbons
PPE	Personal protective equipment
PSI	Preliminary Site Investigation
SA	South Australia
SRP	Site Remediation Plan
SWMS	Safe work method statement
TRH	Total recoverable hydrocarbons
VR	Validation Report
WHS	Work health and safety
WF	Waste Fill
WTC	Waste transport certificate

1 Introduction

LBW co Pty Ltd (LBWco) was commissioned by the City of Norwood Payneham & St Peters (NPSP) to prepare a Site Remediation Plan (SRP) to facilitate the remediation of impacted soils at the Payneham Memorial Swimming Centre, 194 O.G. Road, Felixstow (the site).

The site was previously investigated by LBWco¹ (LBWco 2023) and the findings of the assessment are summarised within this SRP.

A site plan showing the site location and its immediate surroundings is presented as Figure 1 in Appendix A.

Remediation is required due to the presence of elevated concentrations of polycyclic aromatic hydrocarbons (PAHs), total recoverable hydrocarbons (TRH) and lead identified in the northern portion of the site; elevated concentrations of PAHs beneath the footprint of the existing building in the southern portion of the site; and fill within the former creek alignment containing bonded asbestos cement fragments and aesthetically and geotechnically unsuitable materials.

Where remediation is required, South Australian Environment Protection Authority (EPA) 2019, *Guideline on the assessment and remediation of site contamination* recommends that an SRP be developed that documents the remediation option(s) that will be implemented to achieve the remediation goals and objectives for the site.

This SRP also details requirements for offsite disposal of surplus soils deemed to be aesthetically or geotechnically unsuitable for reuse at the site.

In accordance with the Project Controls document, the Contractor will be required to prepare a Contractor's Environmental Management Plan (CEMP) to describe how activities undertaken during the swimming centre upgrade will be managed to avoid or mitigate environmental or nuisance impacts, and how environmental management requirements will be implemented.

Implementation of this SRP and the Contractor's CEMP will assist the project stakeholders in meeting their general environmental duty under section 25 of the *Environment Protection Act 1993* (EP Act).

1.1 Remediation Goals

In line with the *Environment Protection Act, 1993*, the remediation goals for the site are:

- To eliminate or prevent actual or potential harm to the health or safety of human beings that is not trivial, from exposure of future site users to contaminated soils, in the context of the continuing use of the site as a recreational facility (swimming centre); and
- To eliminate or prevent, as far as reasonably practicable, actual or potential environmental harm that is not trivial, from exposure of contaminated soils to site ecology, in the context of the continuing use of the site as a recreational facility (swimming centre).

¹ LBWco 2023. Payneham Memorial Swimming Centre, 194 O.G. Road, Felixstow, SA 5070. Preliminary Site Investigation. Ref: 211302 R01.1 25 July 2023 (which was subsequently superseded by 211302 R01.2, 30 November 2023)

1.2 SRP Objectives

The specific objectives of the SRP are:

- To provide clear guidance and protocols for NPSP to adopt to effectively manage identified site contamination within proposed construction areas associated with the pool upgrade.
- To mitigate unacceptable risk from exposure of identified site contamination to future site users and site ecology.
- Provide direction on management of surplus soil requiring offsite disposal.

This SRP provides NPSP and relevant stakeholders with the following:

- A summary of the location and nature of impacted soils at the site, based upon soil investigation works.
- A structure of stakeholder responsibility for the implementation of the SRP.
- Instructions regarding the excavation, handling and offsite disposal of impacted soils.
- Instructions to validate the final site condition, with residual risk characterised and documented.

2 Site Information

Site identification details are provided in Table 1.

Table 1 Site Identification Details

Site Addresses	Payneham Memorial Swimming Centre, 194 O.G. Road, Felixstow, SA 5070
CT References	The swimming centre site is comprised of the following four certificates of title (CT): <ul style="list-style-type: none"> • Portion of CT 5386/506 • Portion of CT 5744/453 • Portion of CT 5744/454 • Portion of CT 5859/643
Current Site Owner(s)	The Corporation of the City of Norwood, Payneham and St Peters
Site Area	Approximately 1.1 ha
Local Government Authority	City of Norwood Payneham & St Peters
Zoning	Housing Diversity Neighbourhood
Current Land Use	Recreational
Current Site Occupier(s)	Payneham Memorial Swimming Centre
Proposed Land Use	Recreational

A site plan identifying the site boundary is presented as Figure 1, Appendix A.

3 Summary of Previous Site Assessments

LBWco has previously undertaken an environmental assessment at the site in two stages: a site history and preliminary soil assessment in November 2021 to January 2022; and a supplementary soil assessment in June/July 2023. Results of both investigation stages were reported in a Preliminary Site Investigation report (LBWco 2023).

Figure 2A, Appendix A presents the site layout, investigation locations, fill depths and the risk-based outcomes of the previous soil assessments, with Figure 2B including an overlay of the development plan. Figures 3A and 3B present the results of the soil assessment with respect to waste classification. Soil bore locations and fill depths from previous Wallbridge Gilbert Aztec geotechnical investigations are also provided on the above figures.

The conclusions of environmental interest identified by the previous assessment, relevant to redevelopment of the site are as follows.

3.1 Summary of PSI – Site History

The site now occupied by the swimming centre was historically used for horticulture purposes until circa 1967 when the swimming centre was first developed.

3.1.1 Former Creek Alignment

Historical aerial photos indicated that Third Creek originally ran across the site prior to infilling and realignment along the eastern boundary of the site by 1968, ahead of development of the swimming centre. The source of the creek backfill material is not known and may contain construction and demolition waste, rubbish and/or contaminated fill.

It is inferred that the creek entered at the south-western corner of the site, crossing the current 50 m pool location, and exited at the northern end of the site. The exact alignment of the original creek was not known but was inferred based on the centreline of trees crossing the site, as shown in the figure below.



Figure 1 1949 and 2021 Aerial Photos Showing Inferred Creek Alignment

Available historical maps from 1873 to 1982 viewed as part of the site history investigation, also showed that Third Creek originally crossed the site, however the alignment shown on the various maps differed significantly, therefore were not relied upon.

3.1.2 Potential Underground Asbestos Cement Pipes

A historical site service plan provided by NPSP indicated the presence of existing and redundant underground asbestos cement pipes. Whilst an asbestos register exists for the site, it does not include information regarding underground services at the site.

Civil engineering drawing no. P-67-1A (refer Appendix B), inferred to be dated 1967, shows "Fibrolite²" pool supply ducts running along the length of the 50 m, learners' and toddlers' pools (15-inch, 12-inch and 9-inch diameter respectively). The plan also shows a 2-inch diameter Fibrolite water ring-main located surrounding the pools, with several branch mains. The Fibrolite asbestos pipes identified on the plan have been highlighted by a pink dashed line.

It is understood that the asbestos cement pool supply duct beneath the 50 m pool was removed by Royal Park Salvage in July 2018. Following removal of the asbestos pipe, KEMM Environmental conducted a visual inspection and confirmed, with limitations, that at the time of the inspection all visible asbestos had been removed from the areas inspected (refer to a copy of the inspection report in Appendix B).

It is understood that asbestos cement pool supply ducts remain beneath the existing Learners' Pool and Toddlers' Pool.

No information was available regarding removal of the remaining underground "Fibrolite" asbestos cement pipes shown on civil engineering drawing no. P-67-1A, therefore it is not known whether these pipes remain at the site.

3.1.3 Potentially Contaminating Activities

Based on a desktop review of current and historical site information and a site inspection, LBWco prepared an initial summary conceptual site model (CSM) for potentially contaminating activities (PCAs) that were identified or inferred to have occurred at or near the subject site.

On-site Prescribed PCAs:

- Fill or soil importation - MODERATE
- Agricultural activities - LOW

On-site Non-prescribed PCAs:

- Storage of chemicals in volumes less than 500 L - LOW

Off-site Prescribed PCAs:

- Agricultural Activities - NEGLIGIBLE
- Dry Cleaners - LOW
- Service Stations – LOW
- Motor vehicle repair or maintenance - NEGLIGIBLE

3.2 Summary of Soil Assessment

Based on the soil assessment undertaken, LBWco concluded the following:

² "Fibrolite" was an asbestos cement building material that was molded into piping or sheeting, produced from the 1940s to the 1980s.

3.2.1 Suitability of Site Soils

- Fill materials assessed in the **Northern Portion** of the site (**Hotspot Area A** - current playground area and proposed carpark) are impacted by PAHs, TRH and/or lead and **are not considered suitable** based on recreational land use of the site, if direct access to the soils is allowed.
- Proposed construction of a carpark in the **Northern Portion** of the site will either result in the removal of the impacted soils or their effective encapsulation beneath a bitumen pavement, **exposure to any remaining impacted soils will largely be mitigated** under this scenario. If any soils in this area are to remain exposed following future redevelopment works, management controls and protocols should be implemented, **or the impacted soil should be removed from site**.
- No chemical concentrations posing a potential health risk were identified within fill from the **Former Creek Alignment (Hotspot Areas B, C and D)** to date. It is noted, however, that this conclusion is based on limited data. Fill material in the former creek alignment is likely to be **highly variable and requires further assessment** to either determine suitability to remain onsite or to confirm classification for offsite disposal.

ACM was identified in creek backfill material at one location at the northern end of the site at a depth of 1.5 mBGL. The presence or absence of ACM along the entire former creek alignment should be confirmed prior to removing soils for disposal or for reuse onsite.

Some of the fill encountered was considered to be **not geotechnically or aesthetically suitable for re-use onsite**.

Impacted soils within the Former Creek Alignment may pose an **unacceptable ecological risk**, therefore **these soils should not be used in landscaped or unsealed areas**.

- Soils within the Southern **Building Footprint (Hotspot Area E)** generally met health risk-based criteria, with the exception of isolated PAH impact identified in fill at one location (**SB02 (Hotspot Area E1)**). Currently these isolated impacted soils are located beneath the existing building so there is no immediate exposure pathway. Planned development of the southern portion of the site will either result in the removal of impacted surplus materials from site or their effective encapsulation beneath a new building, therefore exposure to any remaining impacted soils will largely be mitigated under this scenario. If any soils in this area are to remain exposed following future redevelopment works, management controls and protocols should be implemented, or the impacted soil should be removed from site.
- Fill and natural soils assessed in the **Main Site Area** were considered suitable for recreational land use.

3.2.2 Waste Classification

- **Northern Portion (Hotspot Area A)** – Based on elevated concentrations of PAHs and TRH identified:
 - **Fill** materials assessed within this area of the site, generally present from the surface to depths of between 0.5 mBGL and 1.0 mBGL, are classified as **LLCW**.
 - **Natural** soils are consistent with the chemical requirements as **WF**. Soils must also meet the physical requirements of Waste Fill to be classified as such, however, based on the field observations, these soils are likely to be physically compliant.
- **Main Site Area** – Fill and natural soils assessed within this area of the site are consistent with the chemical requirements of **WF**. Soils must also meet the physical requirements of Waste Fill to be classified as such, however, based on the field observations, these soils are likely to be physically compliant.
- **Former Creek Alignment** – **Preliminary assessment** of creek backfill material indicated the following waste classifications:

- **Hotspot Area B** (Within Northern Portion) – **LLCW asbestos contaminated**
- **Hotspot Area C** (Between Northern Portion and northern end of 50 m pool) – **IW asbestos contaminated**
- **Hotspot Area D** (South-west of the 50 m pool) – **IW**

As stated above, fill material in the former creek alignment is likely to be highly variable and **requires further assessment to confirm classification for offsite disposal**. For the purpose of volume estimation, it has been conservatively estimated that the former creek is 5 m wide x 2.5 m deep.

- **Southern Building Footprint (Hotspot Area E / E1)** – Due to elevated concentrations of PAHs and chlordane identified:
 - **Fill** soils assessed in this area of the site are classified as **LLCW**.
 - Limited testing of **natural** soils in this area indicated compliance with the chemical requirements as **WF**. Soils must also meet the physical requirements of Waste Fill to be classified as such, however, based on the field observations, these soils are likely to be physically compliant.

For the purpose of volume estimation, the depth of LLCW in Area E has been inferred to be to 0.3 mBGL across the building footprint; and the indicative extent of LLCW in Area E1 is inferred to be approximately 4 m x 4 m x 1 m deep.

4 Remediation Options Summary

It is understood that asbestos cement pool supply ducts remain beneath the existing Learners' Pool and Toddlers' Pool. It is not known whether underground asbestos cement pipes exist elsewhere on the site. Uncontrolled disturbance of underground asbestos pipes may cause contamination of site soils and pose a health risk to workers during earthworks at the site.

Some of the uncontrolled fill material observed in the former creek bed is geotechnically and aesthetically unsuitable for the proposed site redevelopment. The former creek bed was identified at two test pit locations, and there is uncertainty regarding the nature of the backfill material at locations along the former creek alignment. Several fragments of bonded asbestos containing material (ACM) were observed in the creek backfill material at the northern end of the site.

Elevated PAH, TRH and/or lead concentrations were identified in shallow soils in the northern portion of the site that may pose a potential health-risk to future site users via direct contact / ingestion of accessible impacted soils.

Remediation is therefore required to:

- Mitigate potential uncontrolled disturbance of ACM that may cause contamination of site soils, and to manage WHS requirements for the site as a whole during and following redevelopment works
- Remove geotechnically and aesthetically unsuitable fill materials from the site; and
- Mitigate the risk from exposure to contaminated soils following redevelopment of the site.

With respect to the proposed redevelopment, two potential remediation options for PAH impacted shallow soils in the northern portion of the site were considered:

Option 1 – Excavate impacted soil with off-site disposal

This option proposes impacted soils are excavated and disposed off-site where materials are considered surplus following excavation to achieve required development levels. This option will remove the contamination sources.

Option 2 – On-site retention / encapsulation of impacted soils

This option proposes residual impacted soils are retained in areas with no footings or services excavations proposed, beneath either hardstand surfaces such as bitumen/concrete (subject to geotechnical suitability) or beneath a visual marker layer overlain with a suitable growing medium and landscaping. As impacted soils were assessed to not be leachable, containment beneath hardstand surfaces or landscaping is not considered to pose a risk to groundwater and will eliminate the pathway of exposure between the residual contaminant source and the receptor.

Whilst Option 2 aligns more closely with the EPA waste management hierarchy (retention of waste onsite preferred over offsite disposal), due to site constraints retention of the impacted soils, estimated to be approximately 4,200 m³, is not considered practicable.

Therefore **Option 1 is considered the preferred remediation option.**

If the Contractor considers Option 2, or a combination of the two options, ongoing management of the containment areas will be required under a site management plan (SMP) to ensure encapsulation remains effective and provide management measures for any intrusive ground works that may occur in these areas in the future.

5 Stakeholders, Roles and Responsibilities

Table 2 presents the roles and responsibilities of the key stakeholders in relation to this SRP.

Table 2 Roles and Responsibilities

Position	Responsibilities
Principal NPSP	<ul style="list-style-type: none"> • Site owner and operator • Liaison with community • Engage Contractor
dwp	<ul style="list-style-type: none"> • Superintendent
Contractor TBC	<ul style="list-style-type: none"> • Lead communication between stakeholders • Engage Environmental Consultant • Engage Licenced Asbestos Assessor • Preparation of a CEMP, Contamination Remediation Management Plan (CRMP) and Asbestos Management Plan • Understand and implement remediation work within the requirements of the SRP • Hold appropriate licences for removal and transport of impacted soils or engage an appropriately licenced subcontractor • Ensure SRP hold points are actioned • Ensure site works adhere to the guidance summarised and referenced in the SRP • Avoid work practices that are damaging to the environment • Ensure site activities involving contaminated soils are undertaken in a controlled manner addressing necessary WHS and environmental requirements • Transport waste soils to an EPA licensed waste depot for disposal • Backfill of remediation excavations with approved imported fill that meets the Project Controls Specification • Engage geotechnical testing authority to certify controlled fill
Environmental Consultant TBC	<ul style="list-style-type: none"> • Supervise implementation of this SRP by the Contractor, against the remediation goals and objectives • Collect evidence to demonstrate compliance with this SRP, including photographs, site notes and confirmatory samples (where necessary) • Prepare of a Remediation Validation Report (RVR) to document the final condition of the site following remediation
SafeWork SA Licensed Asbestos Assessor TBC	<ul style="list-style-type: none"> • Notify SafeWork SA of asbestos removal / remediation works • Undertake air monitoring and clearance inspections during asbestos removal / remediation works • Issue asbestos clearance certificate
Principal's Environmental Advisor LBWco	<ul style="list-style-type: none"> • Preparation of this SRP • Review Contractor's CEMP, CRMP and Asbestos Management Plan • Provide environmental advice to NPSP as required • Preparation of an enduring Site Management Plan (if necessary)

6 Remediation Management Plan

All remediation works shall be undertaken in accordance with the relevant sections of the Project Controls document, including but not limited to:

- PC-ENV1 Environmental Management
- PC-ENV2 Environmental Protection Requirements
- PC- SC1 Site Contamination
- PC-S16 Hazardous Materials Management

The Contractor shall ensure that all remediation works are undertaken in accordance with applicable legislation, regulations, codes of practice and guidelines, including those specified in the Project Controls document.

6.1 Preliminaries

Prior to commencement of site works, the Contractor's CEMP, CRMP and Asbestos Management Plan shall be reviewed by the Principal's Environmental Advisor to check for compliance with environmental aspects of the Project Controls document, including relevant legislation and guidelines, and that the proposed remediation plan meets the remediation goals and SRP objectives.

6.2 Post-Demolition Asbestos Clearance Inspection

Following demolition of all existing above-ground infrastructure and prior to commencement of earthworks or removal of below-ground infrastructure, a SafeWork SA Licensed Asbestos Assessor shall conduct an asbestos clearance inspection of the site to confirm no visible asbestos remains at the site surface. This is to avoid contamination of site soils with any fragments of ACM should they remain on the site surface following demolition.

6.3 Removal of Underground Asbestos Pipes

Prior to commencing earthworks at the site, the Contractor shall identify the location of all underground asbestos cement pipes remaining at the site and document the findings in an Asbestos Survey Report.

The Contractor shall prepare an Asbestos Management Plan to provide protocols for the removal and disposal of any asbestos at the site. The plan shall include the methodology to be followed by the asbestos removal subcontractor during removal of the underground asbestos pipes to mitigate contamination of the surrounding soils with fragments of asbestos cement pipe.

Asbestos cement pipes shall be removed from the site by a SafeWork SA licensed asbestos removal subcontractor. A SafeWork SA Licensed Asbestos Assessor shall be engaged to conduct air monitoring and clearance inspections and issue of clearance certificates for all asbestos removal works.

Asbestos removed from the site shall be transported by an EPA licensed transporter for disposal at an EPA licensed facility.

6.4 Removal of Contaminated Soils

Based on the findings of the PSI report (LBWco 2023), remediation of several hotspot areas at the site will be required, as shown on Figure 3A, Appendix A, and Figure 3B which includes an overlay of the development plan.

A summary of the hotspot areas, depths, volumes and waste classification is provided below in Table 3.

Coordinates defining the hotspot areas are provided in Table A1, Appendix A and the location of coordinate references are shown on Figure 4 in Appendix A.

Remediation rationale and details for each hotspot area and provided in the following sections.

Table 3 Contamination Hotspot Areas and Volumes

Hotspot Area Reference	Location	Inferred Contamination Depth Interval (m)	Approximate Area (m ²)	Estimated Volume (m ³)	Waste Classification
A (not including B)	Northern Area	0 to 0.5 – 1.0 (0.75 average)	903	677	LLCW
B	Former Creek	0 to 2.5	320	800	LLCW asbestos contaminated
C	Former Creek	0 to 2.5	112	280	IW asbestos contaminated
D	Former Creek	0 to 2.5	510	1,275	IW
E (not including E1)	Southern Building Footprint	0 to 0.3	1,094	328	LLCW
E1	Southern Building Footprint	0 to 1	16	16	LLCW

6.4.1 Hotspot Area A - Northern Portion of Site

The PSI (LBWco 2023) identified elevated TRH, PAH, lead and zinc, concentrations in fill materials within Hotspot Area A which exceeded the adopted human health and/or ecological guidelines. Based on the assessment undertaken, fill from this area was classified as Low Level Contaminated Waste (LLCW), and was generally present from the surface to depths of between 0.5 mBGL and 1.0 mBGL.

This portion of the site is proposed to include construction of a carpark and associated landscaping, and construction of a water slide landing area and zero-depth water play “splashpad”, both of which will include concrete slabs on pile foundations.

The Contractor shall excavate the full depth of fill from Hotspot Area A for disposal at a licensed landfill. Prior to transport of the fill off-site, the Environmental Consultant shall confirm the waste classification of the material, or undertake additional testing if required.

The Environmental Consultant shall inspect the excavation to confirm that the required extent of fill has been removed from this area, prior to undertaking validation sampling and testing (refer Section 6.5).

Refer to the following section for the portion of the former creek (Area B) that passes through Area A.

If there are any areas where impacted fill cannot be excavated, i.e. within a tree protection zone, it is recommended that a visual marker such as barrier mesh be placed over the impacted soils and then overlain by a suitable growing medium and turf.

Areas where contaminated fill were identified and that have been capped with barrier mesh and growing medium shall be surveyed for inclusion in the RVR and SMP.

6.4.2 Hotspot Areas B, C and D – Former Creek Alignment

As discussed in Section 3.1.1 of this report, the PSI (LBWco 2023) identified the inferred former creek alignment based on the centreline of a row of trees crossing the site. Two of the test pits excavated as part of the supplementary soil assessment (TP01 and TP03) identified creek backfill material. Based on observations of fill within these two test pits it was estimated that the former creek is approximately 5 m wide x 2.5 m deep.

It is noted that the alignment and width of the creek shown on the supplied figures and the depth of the creek is inferred and may vary across the site. It has also been inferred that creek backfill within the footprint of the 50 m pool was removed during excavation / construction of the pool. This should be confirmed following demolition of the existing 50 m pool.

Based on the limited testing undertaken within the creek backfill to date, fill material assessed within the former creek alignment (Areas C and D) has been assessed to be chemically compliant with Intermediate Waste (IW) criteria for the purpose of offsite disposal.

It is noted that significant anthropogenic inclusions such as scrap metal, ash, cinders, slag, brick, glass, plastic and fabric were observed in the creek backfill material, therefore it may not be accepted by the landfill as Intermediate Waste Soil (IWS), unless the inclusions are first screened out.

However, based on testing undertaken in the Northern Portion of the site (Area A), surficial fill within the former creek bed may be consistent with the surrounding fill and may be classified as LLCW. This should be confirmed prior to removal of soils for disposal. As a preliminary conservative measure, the portion of the creek backfill material within the Northern Portion (Area B) has been classified as LLCW.

ACM was identified in inferred creek backfill material in test pit TP01, therefore based on this limited data, creek backfill material within Areas B and C is inferred to be asbestos contaminated. The presence or absence of ACM along the entire former creek alignment should be confirmed prior to removing soils for disposal or for reuse onsite.

The Contractor shall excavate the full depth of fill from Hotspot Areas B, C and D for disposal at a licensed landfill. Prior to transport of the fill off-site, the Environmental Consultant shall confirm the waste classification of the material, or undertake additional testing if required.

The Environmental Consultant shall inspect the excavation to confirm that the required extent of fill has been removed from this area, prior to undertaking validation sampling and testing (refer Section 6.5).

If there are any areas where impacted fill cannot be excavated, i.e. within a tree protection zone, it is recommended that a visual marker such as barrier mesh be placed over the impacted soils and then overlain by a suitable growing medium and turf.

Areas where contaminated fill were identified and that have been capped with barrier mesh and growing medium shall be surveyed for inclusion in the RVR and SMP.

6.4.3 Hotspot Area E – Southern Building Footprint

The PSI (LBWco 2023) concluded that soils within the Southern Building Footprint (Area E) generally met health risk-based criteria, with the exception of isolated samples from fill within Area E1, with concentrations of PAHs exceeding the adopted health-based criterion.

There was also evidence that termite treatment with chlordane and arsenic had historically been applied beneath the building footprint, which resulted in surficial fill from Area E being classified as LLCW.

For the purpose of volume estimation, the depth of LLCW in Area E has been inferred to be to 0.3 mBGL across the building footprint; and the indicative extent of LLCW in Area E1 is inferred to be approximately 4 m x 4 m x 1 m deep. Waste classification of fill below these depths should be confirmed by additional testing.

This portion of the site is proposed to include construction of a new building and associated concrete paving with minor landscaping.

The Contractor shall excavate the full depth of fill from Hotspot Area E and E1 for disposal at a licensed landfill. Prior to transport of the fill off-site, the Environmental Consultant shall confirm the waste classification of the material, or undertake additional testing if required.

The Environmental Consultant shall inspect the excavation to confirm that the required extent of fill has been removed from this area, prior to undertaking validation sampling and testing (refer Section 6.5).

6.5 Validation Testing

Following removal of fill from all hotspot areas the Environmental Consultant shall undertake inspection and validation testing of the base and walls of each excavation to confirm that all contaminated material has been removed and soils within the resulting excavated surfaces meets SA EPA Waste Fill criteria for the contaminants of concern for each specific area. The Environmental Consultant shall also inspect the final excavations to confirm the absence of asbestos at the excavation surfaces.

Where buried asbestos removal has occurred (such as asbestos pipe removal or removal of ACM from the former creek bed), the final excavations shall also be inspected by the licensed Asbestos Assessor to confirm the absence of asbestos remaining at the excavation surfaces.

Validation samples shall be collected at a density of at least 1 sample per 25 m² per wall and base, with a minimum of 5 samples per excavation (1 sample per wall and base), as recommended in SA EPA *Site Contamination Guideline for assessment of underground storage systems* (2019).

Following confirmation of successful validation of the hotspot areas by the Environmental Consultant, excavation may continue as required. Excavations requiring backfilling must be backfilled and compacted in accordance with the Civil Specification.

6.6 Importation of Fill

All imported fill must meet SA EPA Waste Fill criteria and the Civil Specification.

6.7 Removal of Footing and Piling Spoil

Based on the soil assessments undertaken (LBWco 2023), fill soils within the main area of the site (excluding the hotspot areas) and natural soils across the entire site were assessed to be chemically compliant with Waste Fill (WF).

Following remediation and validation of the hotspot areas backfilling with clean imported fill, piling and footing / service excavation works from across the site will generate spoil that is expected to meet the chemical criteria of Waste Fill. However, if unexpected finds or potentially contaminated materials are encountered, the procedure outlined in the CRMP should be followed. Waste classification of piling and footing / service excavation spoil should be confirmed by the Environmental Consultant prior to offsite disposal.

Any offsite reuse considered for surplus soils excavated from the site shall be managed in accordance with SA EPA *Standard for the production and use of Waste Derived Fill* (2013).

6.8 Reporting Requirements

6.8.1 Remediation Validation Report

Evidence of compliance with this SRP shall be documented and reported by the Environmental Consultant in a Remediation Validation Report (RVR). The RVR will provide a detailed record of remediation activities on the site and the data collected to support compliance with the objectives and criteria set out in this SRP. The RVR will also present information to support a statement on suitability of the remediated area for its intended land use.

The RVR will:

- Document how the remediation works were implemented in accordance with the SRP and discuss where works deviated from the plan (if any)
- Include a post-remediation CSM
- Location of any impacted soils retained onsite
- Document the final condition of the site, including presenting any validation information, site photographs and surveys
- Include volume reconciliation calculations comparing initial volumes with actual excavated volumes and actual onsite reuse / disposal volumes and details of waste tracking records
- Conclude on whether impacted soils have been remediated such that no unacceptable risks to human or ecological receptors remain for the site, in the context of the proposed land use.

Any deviations from the SRP due to unforeseen conditions will be clearly documented in the RVR and linked to a review of the conceptual site model and remediation objectives.

Interim remediation validation updates may be produced by the Environmental Consultant as the work progresses, where this is required. Following completion, any interim validation information will be incorporated into the overarching RVR.

6.8.2 Site Management Plan

Following issue of the RVR, if impacted soils have been retained onsite, the Principal's Environmental Advisor shall prepare a site management plan (SMP) that will describe:

- Ongoing monitoring requirements to ensure barrier treatments continue to be effective
- Identify what type of barrier treatments have been used and where they are located
- Mitigation measures to be implemented should intrusive groundworks extend beneath barrier treatments.

7 Conceptual Site Model

The following section provides a summary Conceptual Site Model (CSM) including potential exposure pathways for previously identified and relevant on and off-site receptors. These potential exposure pathways form the basis for mitigation measures specified in Section 6.

7.1 Source

As summarised in Section 3, potential unacceptable risks to human receptors based on current and proposed land use were identified in the **Northern Portion** of the site in the form of elevated concentration of PAHs and TRH within uncontrolled shallow fill.

7.2 Receptors

Current receptors include site users and workers.

During the remediation work will be limited to inducted remediation / earthworks contractors and site visitors. Land uses immediately adjacent to the site's boundaries include the following:

- **North:** Payneham library (on the site boundary), commercial and residential premises (approximately 30m to the north of the site)
- **East:** Creek (on the site boundary), playing fields and Payneham Youth Centre (located approximately 100m to the east of the site).
- **South:** carparking (on the site boundary) and commercial premises (located approximately 100m to the south of the site).
- **West:** O.G. Road (on the site boundary), residential premises (located approximately 25m to the west of the site).

Due to the immediate proximity of the site, there is a high potential for users of the adjacent land to be present in close proximity to the remediation area. Therefore, consideration must be given to potential exposure to ensure the safety of identified nearby receptors.

Future receptors will include site users and intrusive ground workers.

Potential receptors are therefore considered to comprise:

- Current site users and workers
- Future on-site workers involved in below ground maintenance
- Future site users
- Users of Payneham library (staff and visitors)
- Residents of residential and commercial premises in proximity to the site.
- Controlled waters (creek).

7.3 Exposure Pathways

Pre-Remediation

Until the commencement of earthworks, impacted soils remain contained beneath grassed areas, former building and surrounding sealed surfaces. The exposure risk from soils beneath sealed surfaces represent a low risk of exposure to identified receptors. An exposure risk from soil within grassed areas may exist particularly during wet and muddy conditions.

During Remediation

The site is be closed to the public during redevelopment when the remediation works are to be carried out.

Proposed remediation works will involve the excavation of impacted soils, thereby creating a potential exposure pathway to construction workers involved in the work and nearby off-site sensitive receptors via dust inhalation and surface water run-off.

Post-Remediation

Should Remediation Option 2 (On-site retention / encapsulation of impacted soils) be undertaken, some residual impacted soils will remain encapsulated onsite and will require ongoing management through an enduring SMP. The SMP will outline where impacted soils may be encountered and the mitigation measures to be put in place where future intrusive ground works may occur in these areas.

Post remediation, no complete exposure pathway is anticipated to exist where capping treatments are not disturbed and are appropriately maintained.

8 SRP Review and Update

The SRP will be reviewed as necessary by the Contractor, Superintendent and Environmental Consultant to ensure relevancy and suitability of the measures. Review of the SRP may be undertaken as a result of the following triggers:

- Issue of stop-work orders
- Non-compliance raised during a site audit
- Availability of new soil data
- Unexpected finds such as gross soil contamination or potential contamination sources, sensitive flora / fauna, or potential cultural heritage artefacts
- Representations by on-site staff
- Complaints from the public or other stakeholders.

9 Limitations

Scope of Services

This report ("the report") has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between City of Norwood Payneham & St Peters and LBWco Pty Ltd (LBWco) ("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, LBWco has relied upon data, surveys, analyses, designs, plans and other information provided by City of Norwood Payneham & St Peters and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise stated in the report, LBWco 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. LBWco 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 LBWco.

Environmental Conclusions

In accordance with the scope of services, LBWco has relied upon the data and has 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 Stated Parties

The report has been prepared for the benefit of City of Norwood Payneham & St Peters. LBWco assumes no responsibility and will not be liable to any other person or organisation for 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 LBWco 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

LBWco 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

LBWco Figures and Hotspot Area Coordinates

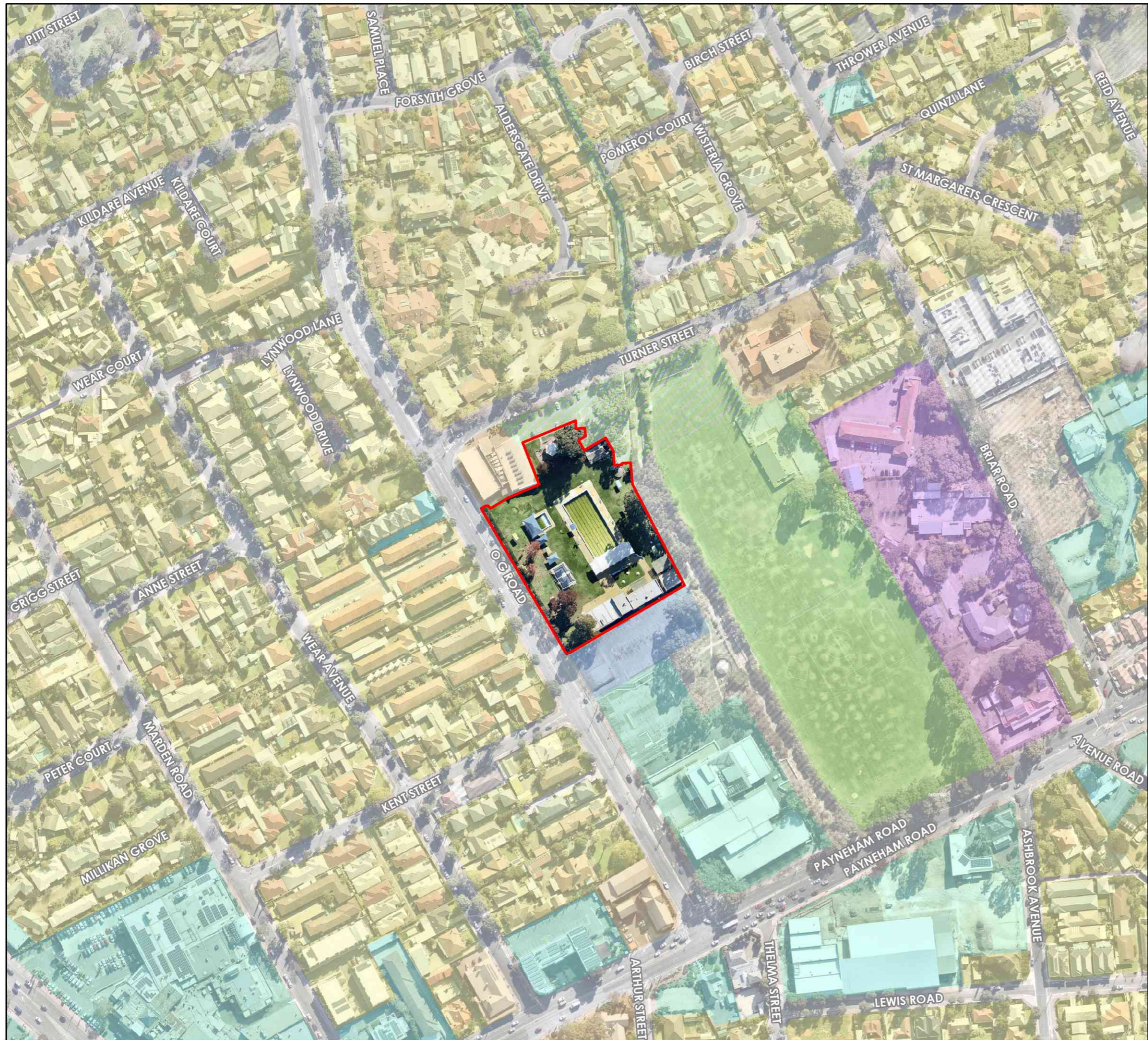
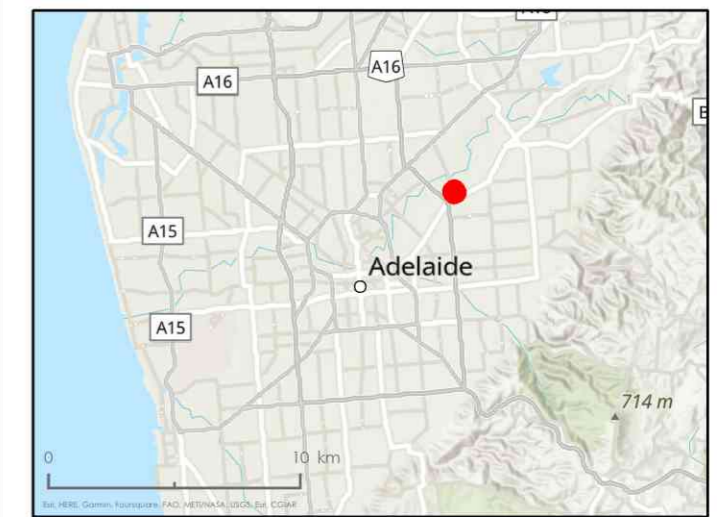
FIGURE 1

Site Locality Plan

Client: City of Norwood Payneham and St Peters
 Project: Site Remediation Plan
 Site: Payneham Memorial Swimming Centre, Felixstow, SA

Legend

- Development boundary
- Land use (2021)
- Commercial
- Education
- Industry
- Public institution
- Recreation
- Reserve
- Residential
- Vacant



	Spatial Reference: GDA2020 MGA Zone 54		
	Source: Nearmap.com (May, 2022)		
Job No	211302	Scale at A3:	1:2,500
Drawn	JC	Rev	1
Approved	AG	Date	21/07/2023

FIGURE 2A

Investigation Locations

Client: City of Norwood Payneham and St Peters
 Project: Site Remediation Plan
 Site: Payneham Memorial Swimming Centre, Felixstow, SA

Legend

- Development boundary
 - Inferred centre line of former creek
 - Soil bore (WGA, 2022)
 - Soil bore (LBWco, 2022)
 - Investigation Locations (LBWco, 2023)
 - Soil bore - 1.5 m
 - Soil bore - 3 m
 - Soil bore - 6 m
 - Risk-based exceedance
 - Exceeds HSL C
 - Exceeds HIL C
 - Test pit targeting former creek alignment
 - Uncontrolled fill encountered in inferred former creek bed*
- * Uncontrolled fill not identified in TP02
- SB100** Bore ID
(0.8) Fill depth (m)



 N	0 10 20 30 m		
	Spatial Reference: GDA2020 MGA Zone 54		
	Source: Nearmap.com (April, 2023)		
Job No	211302	Scale at A3:	1:600
Drawn	JC	Rev	1
Approved	AG	Date	28/07/2023

FIGURE 2B Investigation Locations and Development Plan

Client: City of Norwood Payneham and St Peters
Project: Site Remediation Plan
Site: Payneham Memorial Swimming Centre, Felixstow, SA

Legend

- Development boundary
 - Inferred centre line of former creek
 - Soil bore (WGA, 2022)
 - Soil bore (LBWco, 2022)
- Investigation Locations (LBWco, 2023)
- Soil bore - 1.5 m
 - Soil bore - 3 m
 - Soil bore - 6 m
- Risk-based exceedance
- Exceeds HSL C
 - Exceeds HIL C
- Test pit targeting former creek alignment
 - Uncontrolled fill encountered in inferred former creek bed*

* Uncontrolled fill not identified in TP02

SB100 Bore ID
(0.8) Fill depth (m)

Note: development plan overlay provided by the City of Norwood Payneham and St Peters



N 	0 10 20 30 m		
	Spatial Reference: GDA2020 MGA Zone 54		
	Source: Nearmap.com (April, 2023)		
Job No	211302	Scale at A3:	1:600
Drawn	JC	Rev	1
Approved	AG	Date	28/07/2023



FIGURE 3A Waste Classification

Client: City of Norwood Payneham and St Peters
 Project: Site Remediation Plan
 Site: Payneham Memorial Swimming Centre, Felixstow, SA

Legend

- Development boundary
 - Inferred centre line of former creek
 - Soil bore (WGA, 2022)
 - Soil bore (LBWco, 2022)
- Investigation Locations (LBWco, 2023)
- Soil bore - 1.5 m
 - Soil bore - 3 m
 - Soil bore - 6 m
- Test pit targeting former creek alignment
 - Uncontrolled fill encountered in inferred former creek bed*

SB100 Bore ID
(0.8) Fill depth (m)

* Uncontrolled fill not identified in TP02

Indicative Waste Classification of Soils

- Intermediate Waste
- Intermediate Waste - potentially ACM contaminated
- Low Level Contaminated Waste
- Low Level Contaminated Waste - potentially ACM contaminated

All remaining areas within development area inferred to be chemically compliant with Waste Fill criteria.

It is assumed that creek backfill material within the 50 m pool footprint was removed during pool construction.

A Contamination Hotspot Area



 N			
	Spatial Reference: GDA2020 MGA Zone 54		
	Source: Nearmap.com (April, 2023)		
Job No	211302	Scale at A3:	1:600
Drawn	JC	Rev	0
Approved	AG	Date	24/07/2023



FIGURE 3B Waste Classification and Development Plan

Client: City of Norwood Payneham and St Peters
 Project: Site Remediation Plan
 Site: Payneham Memorial Swimming Centre, Felixstow, SA

Legend

- Development boundary
 - Inferred centre line of former creek
 - Soil bore (WGA, 2022)
 - Soil bore (LBWco, 2022)
- Investigation Locations (LBWco, 2023)
- Soil bore - 1.5 m
 - Soil bore - 3 m
 - Soil bore - 6 m
- Test pit targeting former creek alignment
 - Uncontrolled fill encountered in inferred former creek bed*

SB100 Bore ID
(0.8) Fill depth (m)

* Uncontrolled fill not identified in TP02

Indicative Waste Classification of Soils

- Intermediate Waste
- Intermediate Waste - potentially ACM contaminated
- Low Level Contaminated Waste
- Low Level Contaminated Waste - potentially ACM contaminated

All remaining areas within development area inferred to be chemically compliant with Waste Fill criteria.

It is assumed that creek backfill material within the 50 m pool footprint was removed during pool construction.

A Contamination Hotspot Area

Note: development plan overlay provided by the City of Norwood Payneham and St Peters



 N	0 10 20 30 m		
	Spatial Reference: GDA2020 MGA Zone 54		
	Source: Nearmap.com (April, 2023)		
Job No	211302	Scale at A3:	1:600
Drawn	JC	Rev	0
Approved	AG	Date	24/07/2023



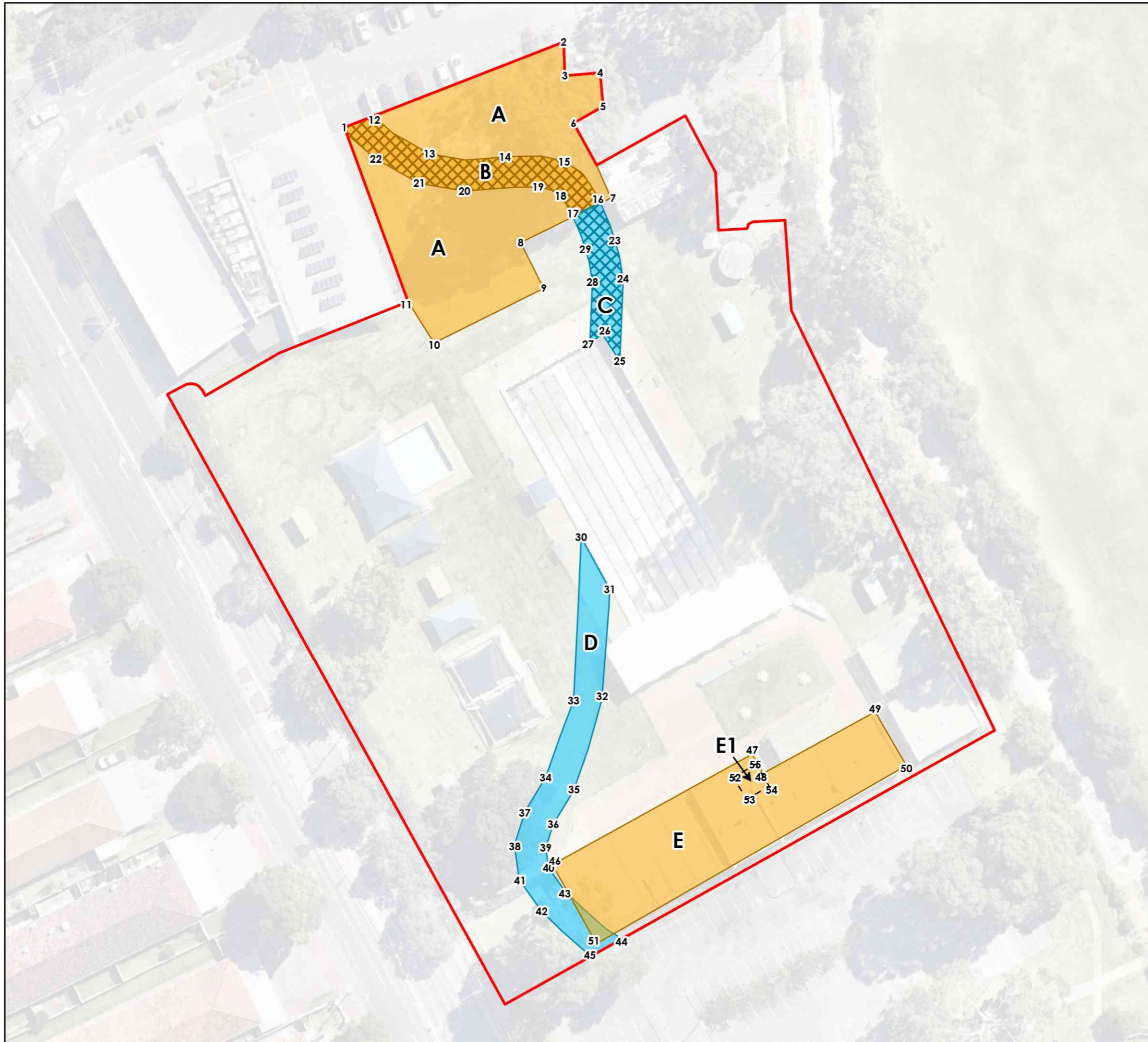
FIGURE 4

Coordinate Summary

Client: City of Norwood Payneham and St Peters
 Project: Site Remediation Plan
 Site: Payneham Memorial Swimming Centre, Felixstow, SA

Legend

- Development boundary
- Intermediate Waste
- Intermediate Waste - potentially ACM contaminated
- Low Level Contaminated Waste
- Low Level Contaminated Waste - potentially ACM contaminated
- A** Contamination Hotspot Area



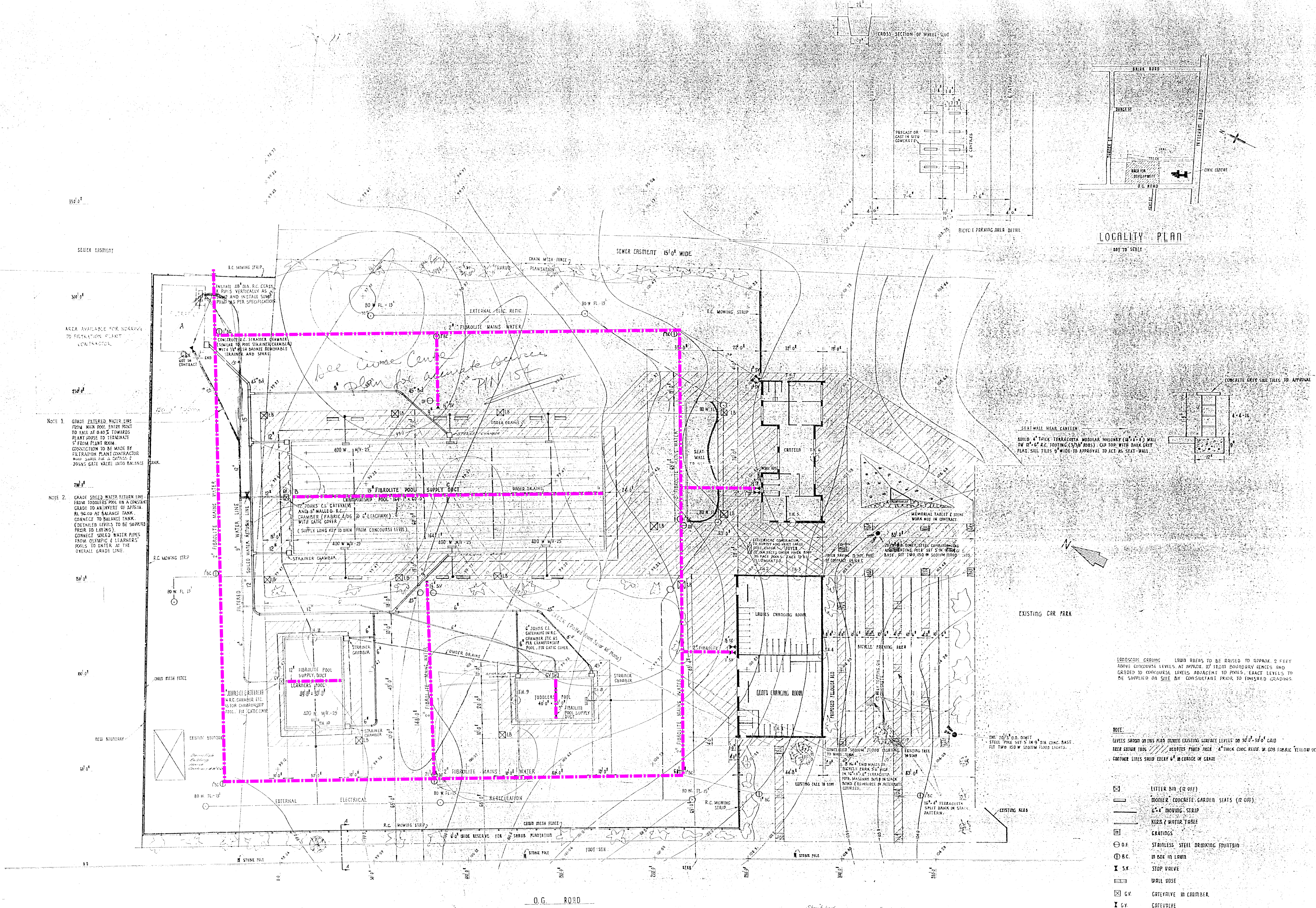
	Spatial Reference: WGS 1984 Web Mercator		
	Source: Nearmap.com (April, 2023)		
Job No	211302	Scale at A3:	1:750
Drawn	JC	Rev	0
Approved	AG	Date	24/07/2023

Hotspot Area	Coordinate Reference	Coordinates	
		Easting	Northing
A/B	1	15433482.356	-4149216.209
A	2	15433525.833	-4149199.298
A	3	15433526.045	-4149205.961
A	4	15433533.055	-4149205.387
A	5	15433533.635	-4149212.059
A	6	15433527.783	-4149215.354
A	7	15433535.156	-4149230.214
A	8	15433517.295	-4149239.023
A	9	15433521.862	-4149248.071
A	10	15433500.141	-4149258.903
A	11	15433494.986	-4149250.722
B	12	15433488.095	-4149213.976
B	13	15433499.206	-4149221.418
B	14	15433514.180	-4149222.077
B	15	15433525.909	-4149223.017
B/C	16	15433533.146	-4149231.188
B/C	17	15433527.652	-4149233.820
B	18	15433525.197	-4149229.748
B	19	15433520.735	-4149228.004
B	20	15433506.148	-4149228.801
B	21	15433497.201	-4149227.237
B	22	15433488.600	-4149222.450
C	23	15433535.933	-4149238.585
C	24	15433537.573	-4149246.162
C	25	15433536.924	-4149262.483
C	26	15433533.552	-4149257.228
C	27	15433531.044	-4149258.387
C	28	15433531.512	-4149246.816
C	29	15433530.105	-4149240.355
D	30	15433529.281	-4149297.347
D	31	15433534.953	-4149307.645
D	32	15433533.435	-4149328.950
D	33	15433527.779	-4149329.806
D	34	15433522.223	-4149345.032
D	35	15433527.855	-4149347.375
D	36	15433523.766	-4149354.216
D	37	15433518.079	-4149352.001
D	38	15433516.123	-4149358.633
D	39	15433522.276	-4149358.889
D	40	15433522.832	-4149362.891
D	41	15433517.173	-4149365.368
D	42	15433521.467	-4149371.472
D	43	15433526.031	-4149367.412
D	44	15433537.271	-4149376.941
D	45	15433531.004	-4149380.143
E	46	15433523.591	-4149362.258
E	47	15433563.188	-4149340.373
E	48	15433565.360	-4149344.172
E	49	15433587.540	-4149332.009
E	50	15433593.734	-4149342.632
E	51	15433532.325	-4149377.880
F	52	15433559.755	-4149345.056
F	53	15433562.633	-4149349.396
F	54	15433567.007	-4149346.892
F	55	15433564.274	-4149342.272

Coordinate system = WGS 1984 Web Mercator

Appendix B

Underground Asbestos Pipe Information

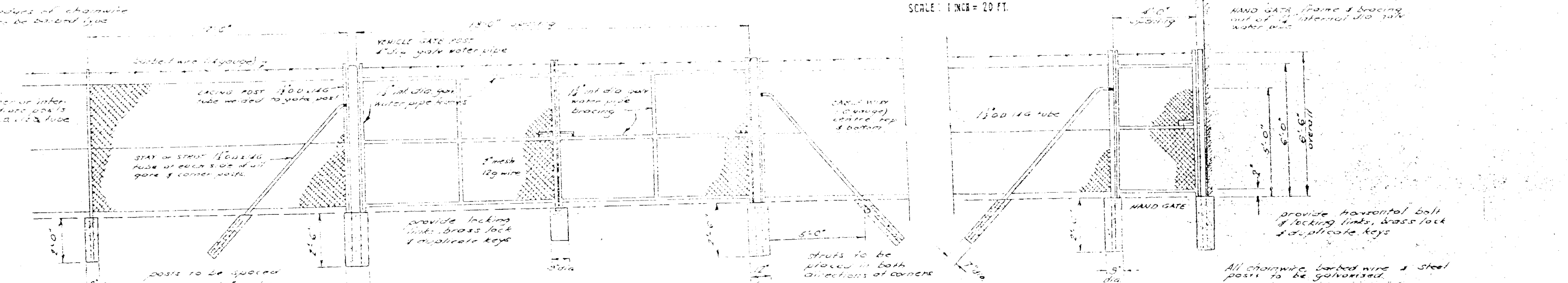


NOTE 1. GRADE FILTERED WATER LINE FROM MAIN POOL ENTRY POINT TO PUMP AS SHOWN TOWARDS PLANT HOUSE TO TERMINATE 5' FROM PLANT ROOM CONNECTION TO BE MADE BY FILTRATION PLANT CONTRACTOR WHO SHALL FIX 4" CROSS 2 JOINS GATE VALVE INTO BALANCE TANK.

NOTE 2. GRADE SOLID WATER RETURN LINE FROM TODDLERS POOL ON A CONCRETE GRADE TO AN INVERT OF APPROX. RL 90.00 AT BALANCE TANK. CONNECT TO BALANCE TANK. (DETAILED LEVELS TO BE SUPPLIED PRIOR TO LAYING). CONNECT SOLID WATER PIPES FROM OLYMPIC & LEARNERS POOLS TO ENTER AT THE OVERALL GRADE LINE.

- NOTE:
LEVELS SHOWN ON THIS PLAN INDICATE EXISTING GRADE LEVELS TO 300.00. GROUND BEHIND BENCH 1000. STAINLESS STEEL POLE SET 5" IN 8" DIA CONCRETE BASE. FIT TYP. FOR 20" DIA FLOOD LIGHTS.
- ⊗ LITTER BIN (2 OFF)
 - ▭ DOUBLE CONCRETE GARDEN SEATS (2 OFF)
 - 6" R.C. MOVING STRIP
 - KERB & WATER TABLE
 - ⊠ CARTINGS
 - ⊕ S.F. STAINLESS STEEL DRINKING FOUNTAIN
 - ⊙ R.C. IN BOX IN LAMP
 - ⊗ S.F. STOP VALVE
 - ⊠ WALL DOSE
 - ⊗ G.V. GATEVALVE IN CHAMBER
 - ⊗ G.V. GATEVALVE
 - ⊗ 400 W. COLOUR CORRECTED MERCURY VAPOUR LAMPS IN CUT OFF LUMINAIRE ON 25" DIAMET COATED TUBULAR STEEL STANDARD OVERHUNG 14"
 - ⊗ 9" Ø 15" HIGH/80 W. FLUORESCENT POSE TOP LUMINAIRES ON 5" Ø DIAMET STEEL POLE SET 5" IN 8" DIA CONCRETE BASE

LAYOUT PLAN
SCALE: 1:200



DETAIL OF FENCING SCALE: 4:100 to 1:100

Drawn	S.G.
Traced	S.G.
Checked	[Signature]
Dwg No	P.67.1A

MOSTYN H. LOWER
Consulting Civil Engineer
North Tce. House, 19 North Tce. St. Peters
ph. 632.090

CITY OF PAYNEHAM
SWIMMING CENTRE
FELIXTOWE RD. PAYNEHAM

KEMM ENVIRONMENTAL INSPECTION REPORT**Payneham Swimming Pool 194 O G Road Felixstow**

A visual inspection for residual asbestos was carried out on the 23rd of July 2018 following the removal of the subsoil asbestos pipe running the below length of the main swimming pool at the Centre.

At the time of the inspection all visible asbestos had been removed from the areas specified.

LIMITATIONS

The inspection was limited to the areas as defined above.

The inspection was carried out in areas where access was available. Where the inspection would involve demolition of walling, coatings, plant etc., only limited inspection was made.

It should be noted that no inspection can be regarded as absolute and that further demolition of structures may reveal incidences of asbestos, insitu which were not visible during the inspection.

This inspection strictly pertains to the conditions as presented on the 23rd of July 2018.

This report should not be considered as a contractual document and should not be reproduced except in full.

Mark RaymondKEMM Environmental

admin@kemmenv.com.au

Mark.Raymond@kemmenv.com.au

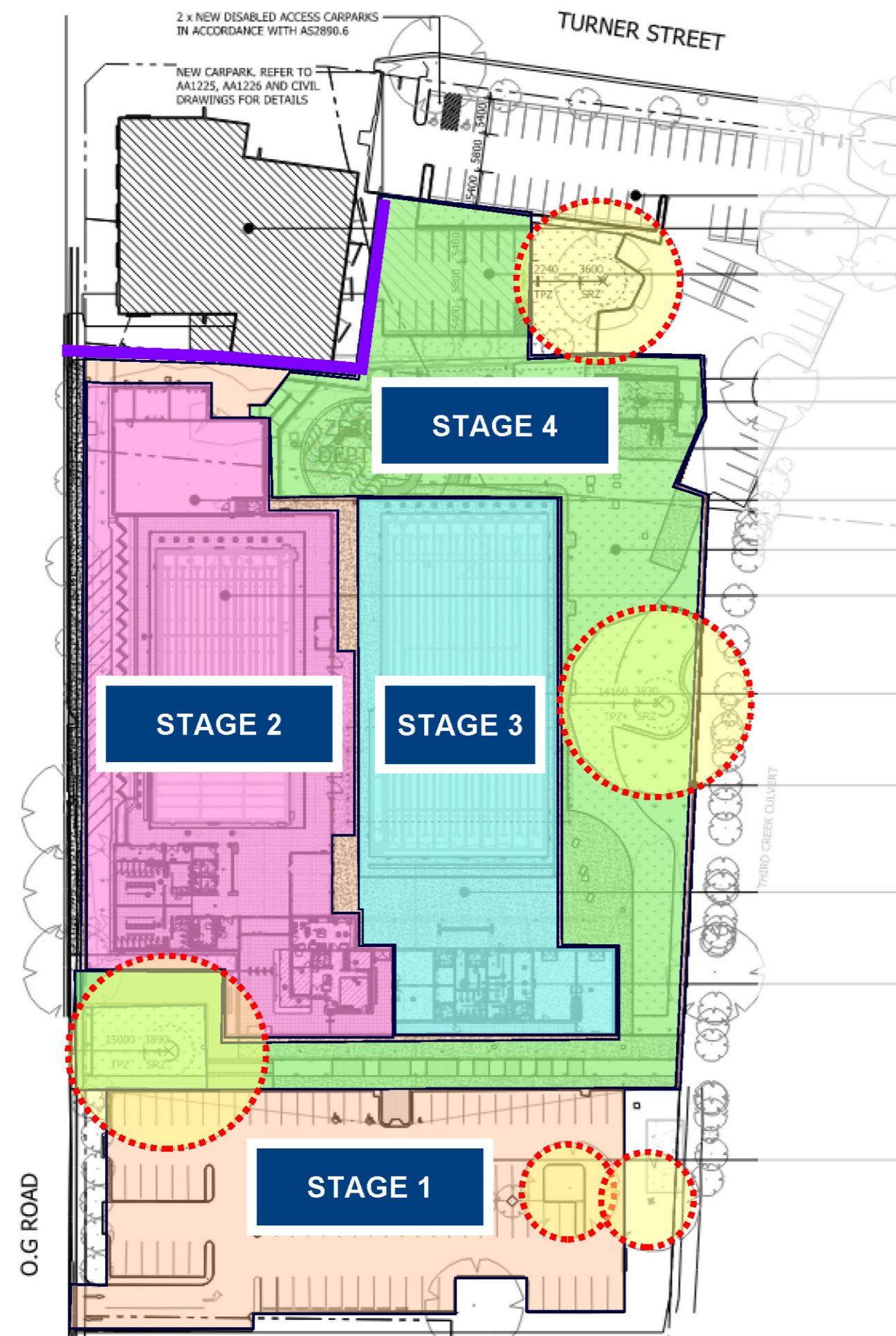
Mobile: 0428 254 016

PH: 8244 0985

FAX: 8244 0983

Attachment 7 – Construction Staging

Construction Staging



STAGE 1 - Site Establishment & Site Enabling Works

STAGE 2 - Pool Hall & Pavilion to Grid G

STAGE 3 - 50m Pool & continuation of Pavilion (Administration)

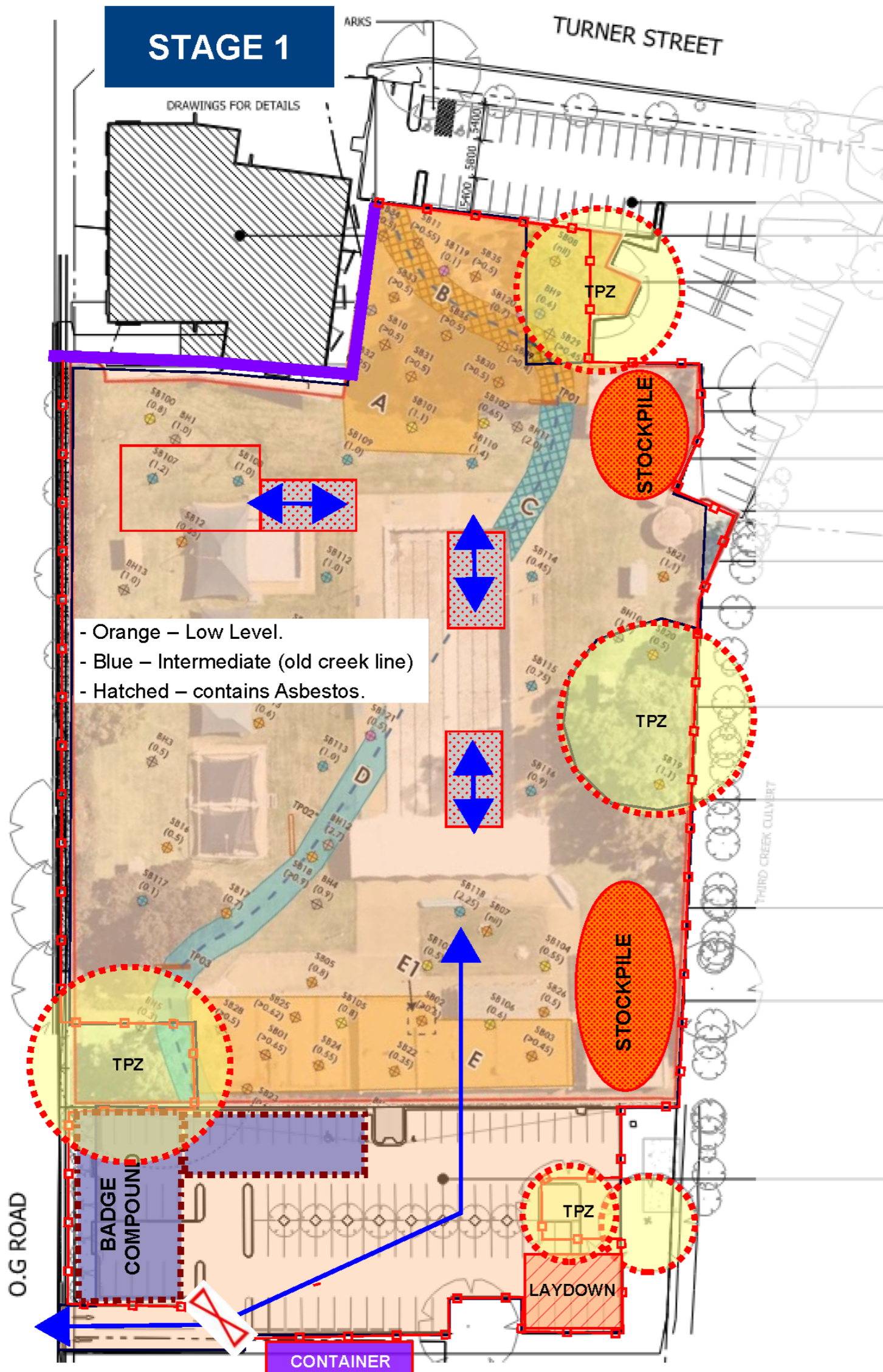
STAGE 4 - Zero Depth, Water Slide, Site Works, Landscaping

REASONING

- Positioning of large construction plant (concrete pumps and cranes)
- Construction joint along grid G of pavilion
- Primary access through the eastern end from the southern car park.
- D&C timing of the Zero Depth and Water Slide elements.
- Avoid primary access through northern Library car park
- Protection and avoidance of significant trees (TPZ)

CRITICAL PATH

- Planning and Mobilisation
- Enabling Works
 - Piling
 - 25m pool
 - LTS pool
 - Pool Hall Structure
 - 50m Pool
 - Commissioning & Handover



STAGE 1 - Site Establishment & Site Enabling Works

January 2024 - July 2024

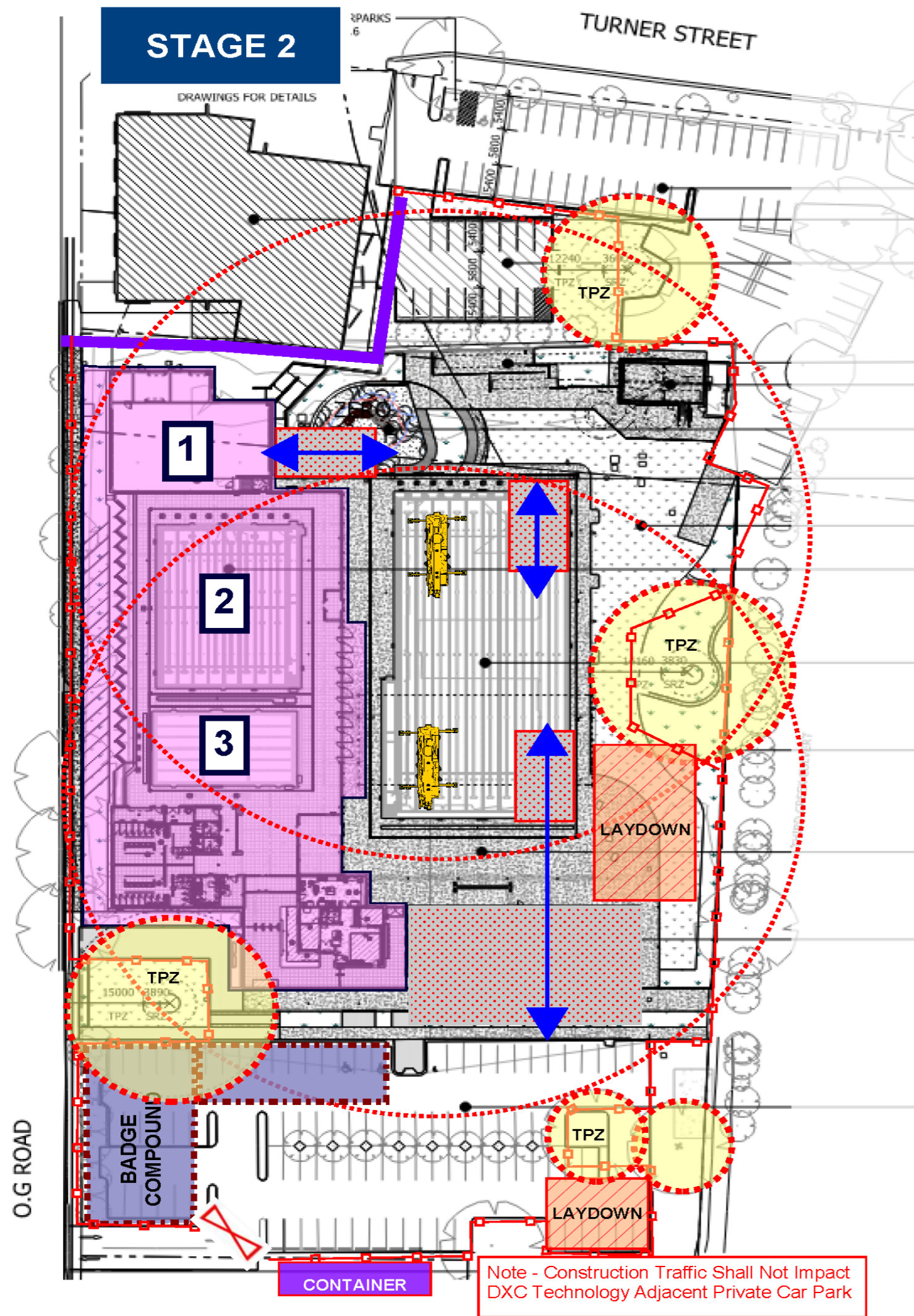
Site Establishment

- Project Plans submitted and approved
- Install 2.4m high hoarding to site perimeter of Payneham Library
- Install remaining site fencing and Tree Protection Zones
- Tiger tails on power lines to west
- Establish site sheds and builder's compound
- Existing Services Investigations
- Hazardous material assessments (per PC-S16)

Site Enabling Works

- Site Demolition
- Site Remediation and Bulk Earthworks
- Pad preparation and compaction
- Site wide Piling
 - Aquatic Plant Room
 - Grid 5 -13 including 25m Pool and then Learn to Swim Pool
 - Pavilion
 - 50m pool
 - Zero depth play & water slide (D&C)
- In ground services commence





STAGE 2 - Pool Hall & Pavilion to Grid G

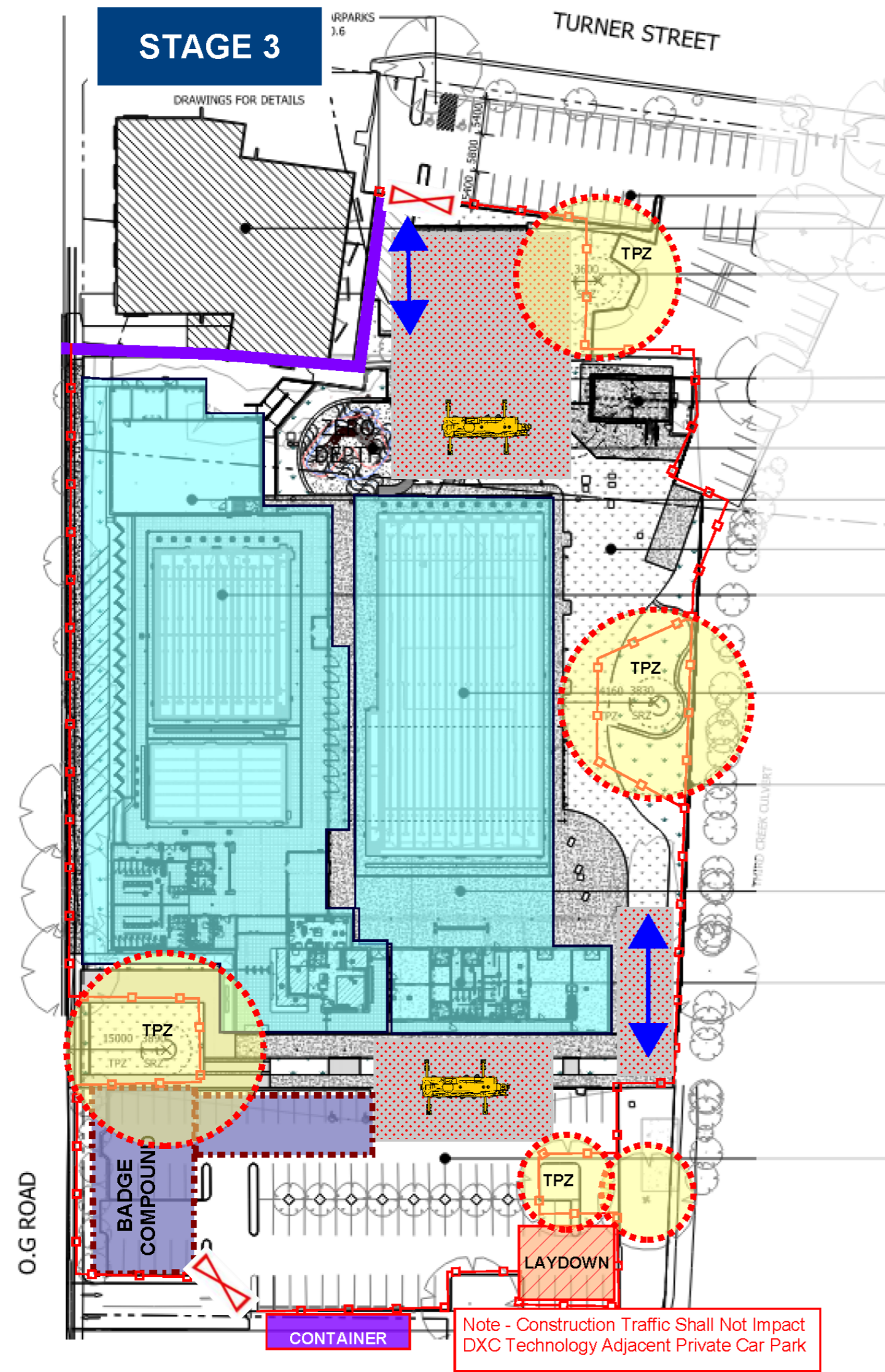
June 2024 - December 2024 (crane de-mob)

Pool Hall and Pavilion to Grid G

- Piling is complete to Pool Hall
- In ground services continuing
- 1. Build northern balance tank, base, walls, suspended floor above
- 2. 25m pool base, walls
- 3. LTS pool base, walls
- (curing)
 - External pool hall footings, and upstand walls
 - Western precast walls and to Grid 5 (aquatic plant room)
 - Erect structural steel
 - Pour concrete suspended slab above western precast panels (OG road)
 - Install feature glue laminated timber ceiling (from above)
 - Purlins and roof to follow north to south
 - Install working deck above timber ceiling
 - Install ACP01 beneath purlins, membranes, services (mech, fire, elec)
 - Install high level wall linings

* Option to commence Zero Depth & Water Slide works pending design time frames





STAGE 3 - 50m Pool & Continuation of Pavilion (Administration)

December 2024 - end October 2025 (PC)

Constraints to commence 50m Pool

Crane requirements completed (late December 2024)

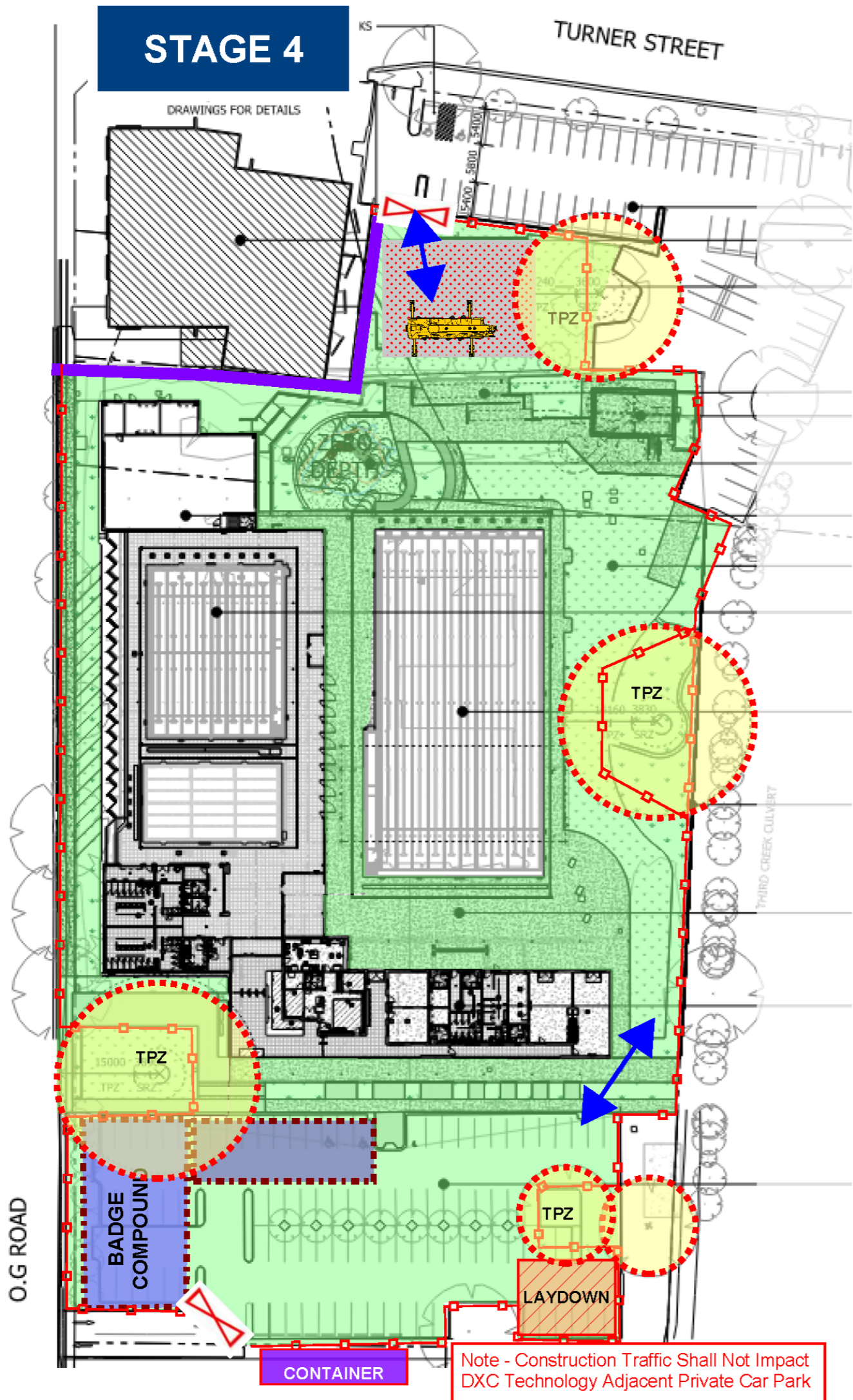
- Glue laminated timber beam ceiling installed
- All roof materials lifted to pool hall roof

50m Pool and continuation of Pavilion (Administration Offices)

- Remove plant access ramps and trim pad
- Piling to 50m pool and shade structure (east)
- Detailed excavation and blindings
- Under slab services and drainage
- Construction of 50m pool shell
- Commissioning

- Continuation of Pool Hall works
- Continue 25m & LTS pools, concourse slabs and finishes throughout
- External claddings and glazing
- Construction of Pavilion administration offices
- Internal fit-out throughout





STAGE 4 - Zero Depth, Water Slide Tower, Site Works, Landscaping

July 2024 - end October 2025 (PC)

D&C ITEMS

Design Phase for Zero Depth Splash Play and Water Slide Tower programmed for approval by late 2024

Piling to Zero Depth area to commence after Aquatic Plant Room backfilled, compacted, pad preparation.

Scheduled to commence early in 2025 after 50m pool piling

- Installation of Zero Depth Splash Play
- Installation of new Balance Tank and Water Slide Tower
- Installation of 50m Retractable Shade

SITE WORKS & LANDSCAPING

- In ground services (from July 2024 onwards)
- 50m concourse slab and tiling
- Northern car park works
- Landscaping, Pavements, Fencing, Planting - site wide



Attachment 8 – IFC Landscape Plans

GENERAL NOTES

- DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS HAVE PREFERENCE OVER SCALED DIMENSIONS.
- ANY DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE SUPERINTENDENT.
- THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE DETAILS, SPECIFICATIONS AND ENGINEERING DOCUMENTS.
- LOCATE AND PROTECT ALL UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION. MAKE GOOD ALL DAMAGE TO EXISTING WORKS CAUSED BY THE ACTIVITY OF THESE WORKS.
- THESE DRAWINGS ARE TO BE PRINTED IN COLOUR.

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FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRN	CHKD
C1	FOR CONSTRUCTION - REV 01	01.12.2023	RS	HE

Tract
Landscape Architects
Urban Designers
Town Planners

Melbourne P: 03 9429 6133
 Brisbane P: 07 3002 6400
 Sydney P: 02 9954 3733
 Geelong P: 03 5221 0105
 Adelaide P: 08 8223 1324
www.tract.com.au

PROJECT
 PAYNEHAM MEMORIAL SWIMMING CENTRE REDEVELOPMENT

CLIENT
 DESIGN WORLDWIDE PARTNERSHIP

DRAWING TITLE
 LANDSCAPE PLAN 1

DRAWING NUMBER 321-0359-00-L-03-DR300
REVISION C1

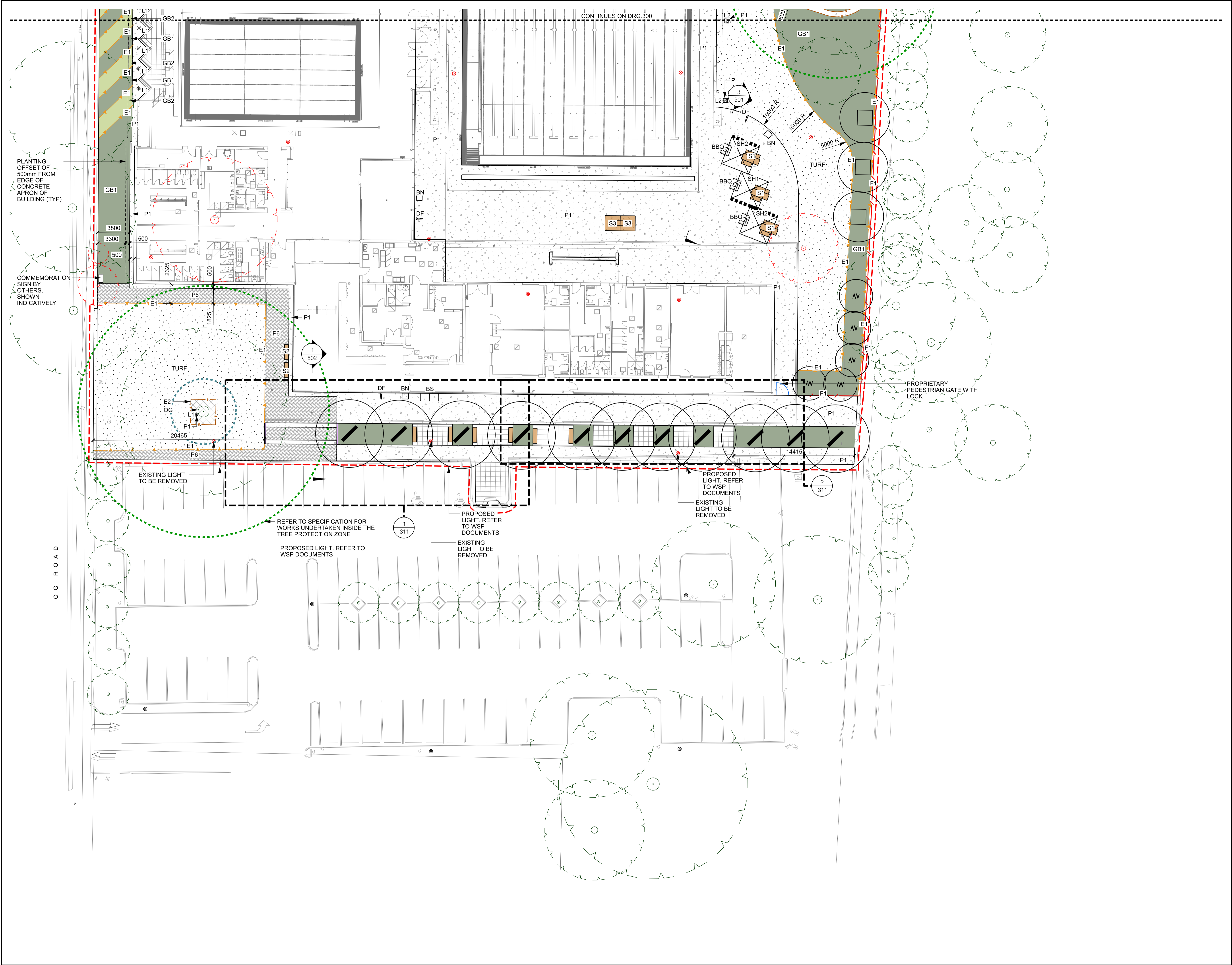
DRAWN RS
CHECKED HE
APPROVED HE
DATE 01.12.2023

SCALE 1:200
 0 2 4 10m

GENERAL NOTES

- DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS HAVE PREFERENCE OVER SCALED DIMENSIONS.
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FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRN	CHKD
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 Adelaide P: 08 8223 1324 www.tract.com.au

PROJECT
 PAYNEHAM MEMORIAL SWIMMING CENTRE REDEVELOPMENT

CLIENT
 DESIGN WORLDWIDE PARTNERSHIP

DRAWING TITLE
 LANDSCAPE PLAN 2

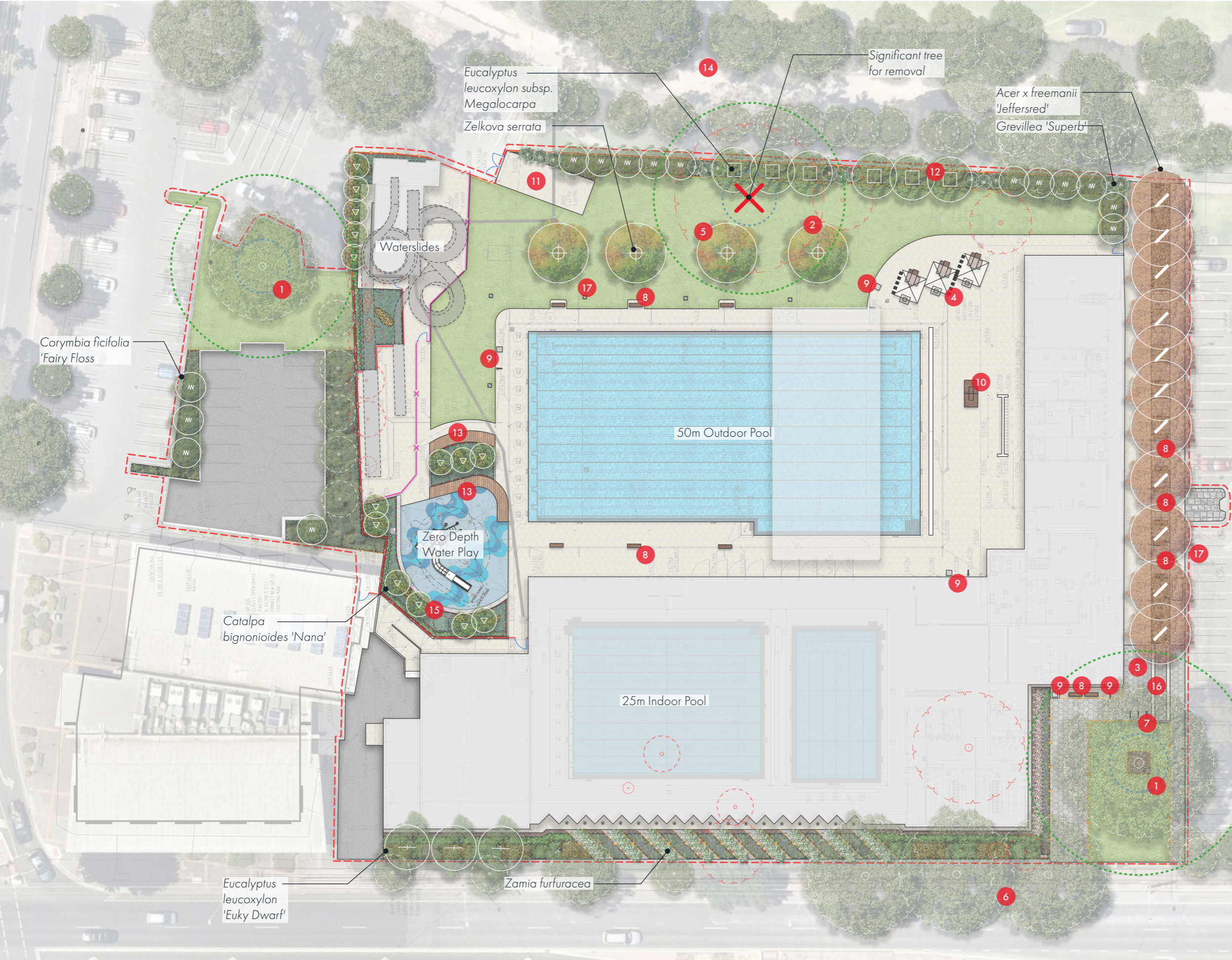
DRAWING NUMBER	REVISION
321-0359-00-L-03-DR301	C1

DRAWN	CHECKED	APPROVED	DATE
RS	HE	HE	01.12.2023

SCALE 1:200

0 2 4 10m

Attachment 9 – Alternate Landscape Plan



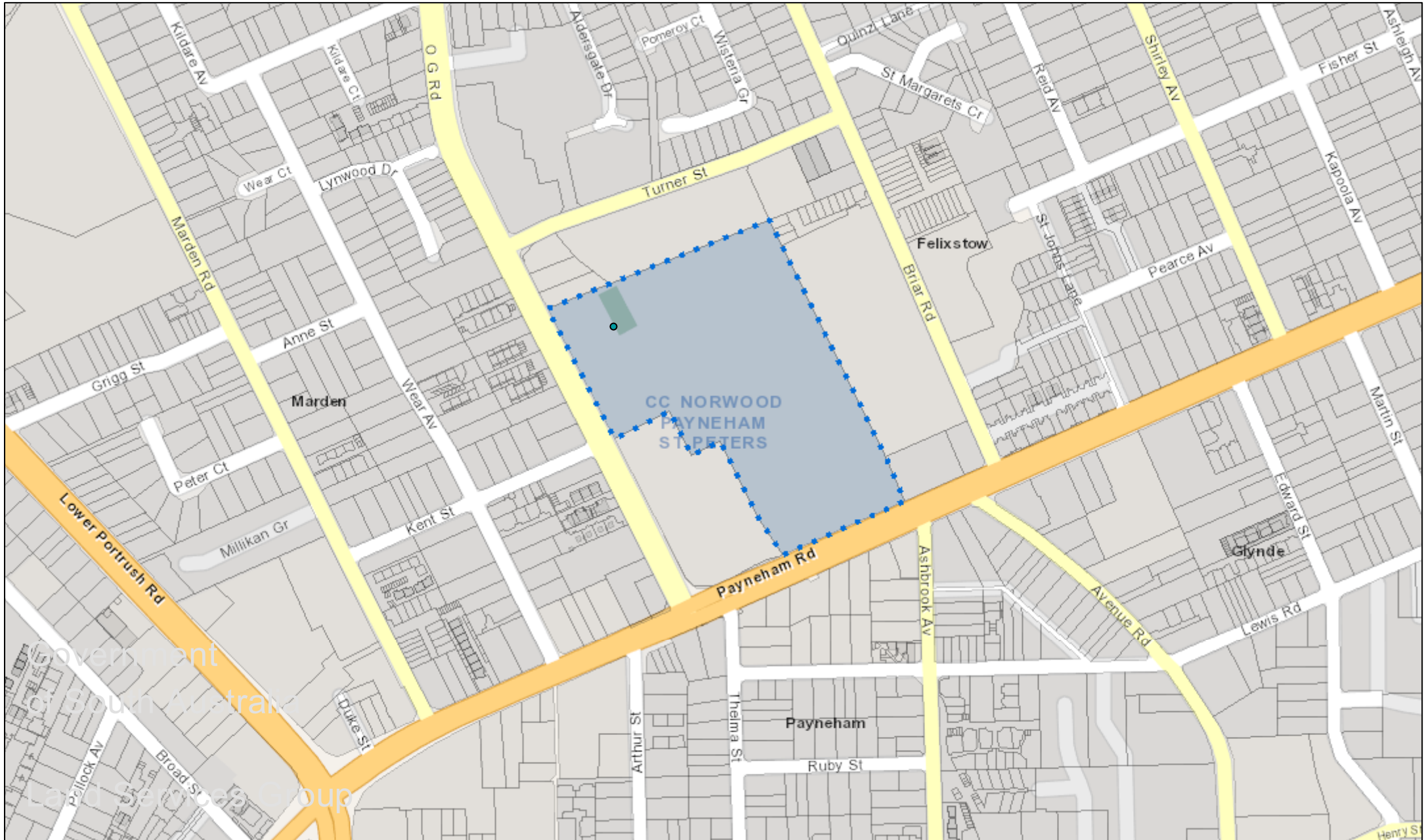
LEGEND

- 1 Celebrate and protect existing trees.
- 2 Removal of existing tree.
- 3 Revitalise pedestrian entrance point.
- 4 BBQ's, shades, picnic settings for public and hired use.
- 5 Space for individuals and families to set up for the day. Picnic rugs.
- 6 Space for private bus drop off/ pick up.
- 7 Bike hoops.
- 8 Benches.
- 9 Drinking fountain/bin.
- 10 Platform bench.
- 11 Access for emergency service vehicles.
- 12 Thick shrub planting to hide fence.
- 13 Timber viewing deck.
- 14 Utilise and incorporate the existing planting along Third Creek into the design.
- 15 Concrete seat wall.
- 16 Steps into facility.
- 17 Lighting.

- | | |
|---------------------|------------------------------|
| Turf | <i>Correa alba</i> |
| Pebble mulch | <i>Liriope muscari</i> |
| Compacted gravel | <i>Lomandra hystrix</i> |
| Deck | <i>Pycnosorus globosus</i> |
| Stone sett | <i>Dianella revoluta</i> |
| Permeable paving | <i>Limonium perezii</i> |
| Concrete concourse | <i>Senecio serpens</i> |
| Organic mulch | <i>Eremophila maculata</i> |
| Life floor tiles | <i>Dianella and Lomandra</i> |
| APR composite edge | Tree for Removal |
| Flush concrete edge | |
| High fence | |
| Low fence | |

The SA Property and Planning Atlas is available on the Plan SA website: <https://sappa.plan.sa.gov.au>

Subject Land Map



The SA Property and Planning Atlas is available on the Plan SA website: <https://sappa.plan.sa.gov.au>

Development Site Map



Government
of South Australia
Land Services Group

Kieran Fairbrother

From: Jared Barnes
Sent: Thursday, 29 February 2024 6:56 PM
To: Kieran Fairbrother
Cc: Derek Langman
Subject: RE: Development Application 23000067 - Payneham Swimming Pool

Hi Kieran

Following are my answers in **bold** to your four questions, which I've renumbered as Q1, Q2, Q3 & Q4.

Q1: *Does the annotated landscaping plan provided in Attachment 9 of your response require Council endorsement and/or a variation to the existing LGIPP Grant Deed? And if so, do you anticipate any issues or hurdles with either or both of these occurring?*

No. The implementation of the Alternate Landscape Plan (Attachment 9) would not require Council endorsement or a variation to the existing LGIPP Grant Deed.

Q2: *If a re-design of the proposed redevelopment was to be proposed, presumably that would have to be provided to the Council for endorsement?*

If a re-design was proposed, it would not need to be provided to the Council for endorsement unless it was at variance to a previous Council decision (e.g., changing the number of lanes in the 50m pool).

Q3: *And as a corollary to question 2, what would be the effect of any proposed re-designs on the existing LGIPP Grant Deed?*

On 21 February 2024, a Deed of Variation for the LGIPP was executed between the Treasurer (State Government) and the Council. The Deed of Variation contains amended project details based on the final design (i.e., the current development approval) and amended timeframes based on the contractor's construction program. The effect of any proposed redesign would be a breach of the agreement and likely result in the loss of grant funding. Therefore, it is not reasonable to propose a re-design of the proposed development.

Q4: *With respect to the contaminated material/soil on site, the preference is to retain all of this material on site, which can be facilitated if the subject tree is removed. Page 8 of your response (dated 27 Feb) states that if the subject tree is retained then there is approximately 600m² of suitable area available on site to retain and encapsulate contaminated soils.*

My question for you is this: if this 600m² was used for retention of contaminated material (i.e. and the tree retained), how much would that save of the \$1.8m of costs associated with the disposal of all of the waste? And secondary to that, what volume of contaminated material might be able to then be retained on site, of the 3,376m³ total? A calculated estimate to both answers will suffice – I don't need exact costings/measurements.

Yesterday afternoon, I met with the construction contractor, and we discussed the very same question. The contractor advised that to retain contamination in multiple smaller locations on-site (outside of the significant tree protection zone) would be very labour intensive and inefficient, thereby taking more time and costing more money than removing and disposing of the contaminated material off-site. Therefore, if the variation to remove the significant tree is not approved, retaining contaminated material on-site will not be a viable option.

Regards,

Jared Barnes AILA
MANAGER, CITY PROJECTS

City of Norwood Payneham & St Peters
 175 The Parade, Norwood SA 5067 | *Kaurna Country*
Telephone
Mobile
Email
Website www.npsp.sa.gov.au

From: Kieran Fairbrother <KFairbrother@npsp.sa.gov.au>
Sent: Thursday, February 29, 2024 11:39 AM
To: Jared Barnes ; Derek Langman
Subject: RE: Development Application 23000067 - Payneham Swimming Pool

Hi,

Further to the below query, can you also please confirm the following:

1. Does the annotated landscaping plan provided in Attachment 9 of your response require Council endorsement and/or a variation to the existing LGIPP Grant Deed? And if so, do you anticipate any issues or hurdles with either or both of these occurring?
2. If a re-design of the proposed redevelopment was to be proposed, presumably that would have to be provided to the Council for endorsement?
3. And as a corollary to question 2, what would be the effect of any proposed re-designs on the existing LGIPP Grant Deed?

I look forward to your responses.

Regards,

Kieran Fairbrother
SENIOR URBAN PLANNER

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067
Telephone
Email
Website www.npsp.sa.gov.au

From: Kieran Fairbrother
Sent: Thursday, February 29, 2024 9:46 AM
To: Jared Barnes ; Derek Langman
Subject: Development Application 23000067 - Payneham Swimming Pool

Good morning Jared and Derek,

I have one question (at this stage) regarding your response to the CAP's deferral reasons, that I am hoping you can provide an answer to ASAP.

With respect to the contaminated material/soil on site, the preference is to retain all of this material on site, which can be facilitated if the subject tree is removed. Page 8 of your response (dated 27 Feb) states that if the subject tree is retained then there is approximately 600m² of suitable area available on site to retain and encapsulate contaminated soils.

My question for you is this: if this 600m² was used for retention of contaminated material (i.e. and the tree retained), how much would that save of the \$1.8m of costs associated with the disposal of *all* of the waste? And secondary to that, what volume of contaminated material might be able to then be retained on site, of the 3,376m³ total? A calculated estimate to both answers will suffice – I don't need exact costings/measurements.

If you can get back to me ASAP that would be much appreciated!

Regards,

Kieran Fairbrother
SENIOR URBAN PLANNER

City of Norwood Payneham & St Peters
175 The Parade, Norwood SA 5067
Telephone

Kieran Fairbrother

From: Jared Barnes
Sent: Monday, 29 January 2024 12:17 PM
To: Kieran Fairbrother
Cc: Geoff Parsons; Peter Wellington; Derek Langman
Subject: RE: Planning Application for Variation to Planning Approval to remove Significant Tree #2 - Payneham Memorial Swimming Centre
Attachments: RE: Planning Application for Variation to Planning Approval to remove Significant Tree #2 - Payneham Memorial Swimming Centre - Question 5 Contamination Disposal Costs
Follow Up Flag: Follow up
Flag Status: Flagged

Hi Keiran

Below are our responses to your questions ([which are shown in blue](#)).

1. In your supporting statement (attached), on page 2 and throughout, you quote comments from the arborist you engaged for this project. However, I cannot see those words in the arborist report provided with this application. Do you have another report/correspondence in which these statements are made, and if so can you please provide these? (This is important because there are comments here about the tree being difficult to retain and roots growing in the vicinity of the pool etc)

The following statements are extracted from the reports prepared by Urbans Arboriculture ([find copies of the reports here](#)), noting the added highlights are mine.

- **Tree Report dated 29/4/2022:**

(Tree Assessment and Recommendations – Page 8):

Tree 2

General

Visually a healthy tree generally of fair structure. At an estimated 30+ metres high, **it has grown to a large size for the environment, being a public space**. The species can grow large where water is available, with heights of 50m reported. It lacks a lignotuber which suggests biologically its strategy is **not geared to longevity**. The flooded gum is **not a tree that usually grows with a form that facilitates subtle pruning cuts**. The most obvious lower cut is testament to this.

One of the more noticeable characteristics of this tree is the activity of **shallow surface roots**. Most appear to have been historically mown over. Recent damage appears modest. **Not many options for maintenance here. Wounding roots can provide an opportunity for disease, or may have done so**. The root activity of this tree looks to extend further than the indicative calculated SRZ (based on AS4970). No branch failures of significant size were observed. Some may have occurred along the trunk at some point in the regions of the hollows.

I would conclude that the tree is a healthy flooded gum but **possibly will prove a challenging tree to retain**, especially if it shows a tendency to keep growing. It looks to have established an extensive root system in the immediate area. It appears **probable that roots are growing in the vicinity of the pool**. The **tolerance of this tree to localised root disturbance is questionable** in my opinion. It looks to have a **modest ULE, but at least 10 years**.

- **Arboriculture Impact Assessment dated 20/6/2022:**

(Relevant Characteristics of the Species – Page 6):

Trees 2 & 3 *Eucalyptus grandis*

Trees 2 & 3 are mature specimens of *Eucalyptus grandis* (flooded gum or rose gum) a tall forest tree from the high rainfall coastal belt of eastern Australia. In habitat it can grow 50m+. It is usually seen with an ascending, almost excurrent form, with a single leading trunk and angled lateral branches. **Where water is in good supply it grows very quickly.** Its aesthetic can reduce during drought conditions. It was once often planted as a shade tree for parks. It is not generally suited to confined spaces such as small suburban gardens and is rarely seen for sale nowadays. **The species is relatively shallow rooted and when grown in lawn areas it tends to develop substantial surface roots which later present turf management problems and potential trip hazards.** Typical of numerous types of gums, large mature trees can be difficult to reduce in size with any degree of subtlety.

(Discussion – Page 15):

Tree 2

For Tree 2 there is no new encroachment and the proposed development is considered to be acceptable in relation to this tree. Demolition machinery should be positioned outside of the TPZ unless where absolutely necessary. This machinery should not traverse the exposed surface roots without root protection.

The main issue with use of the space appears to be the trip hazard of the large surface roots extending for 11m towards the main pool. A number of strategies could be considered in relation to management of the exposed roots. These include:

- a mulched garden bed around the tree.
- mounding the area with loam fill around the tree roots and installing lawn. The edge could either taper down or be constructed with a low retaining wall also used for seating.
- a raised timber deck on isolated pier footings around the tree.

Reducing these roots further through grinding or removing them is not recommended.

2. Do you have any evidence to substantiate the suggestion that roots from this tree may have caused or contributed to cracking causing leakage in the existing pool, per page 2 of your supporting statement?

The 50m pool at the Payneham Memorial Swimming Centre has experienced significant water loss in recent years due to leakage from suspected cracks in the structure which are likely to be a result of tree root penetration and the standard of construction back in 1968. Once the cracks occurred, the leaking water would have provided a regular water source beneath and/or adjacent the pool structure. Tree roots will grow where the soil environment is favourable, and it is suspected that tree roots have found the leaking water source and are growing around and beneath the pool and within the cracks. There is no direct visual evidence of tree roots as we haven't undertaken any destructive investigations, but the statement of the arborist above that "It appears probable that roots are growing in the vicinity of the pool" indicates to us that this is possible.

The Norwood Pool was built in a similar era and has experienced significant leaks contributed to by tree roots, which substantiates the concerns about tree roots at the Payneham Pool. The contribution of significant gum tree roots to the leaks at the Norwood Pool was confirmed by CCTV and destructive inspections, and resulted in a significant temporary repair to be able to open the pool for the current swimming season. Below are statements taken from the Engineers' Investigation Report for the Norwood Pool:

- S23_049_Norwood Pool Leaking Investigation DRAFT - 3 July 2023
()

4.1 In MLEI's opinion, the concrete shell of the 50m pool was seen to have two significant cracks and a number of potential other cracks witnessed throughout the pool walls, (P004, P005). **for the causes of the cracks appear to be a combination of tree root penetration and poor workmanship** from historical remedial joint repairs s Poor workmanship typically results in air pockets or hidden voids that will eventually compromise the pool's structure.

4.2 As stated above a **primary reason for cracking is the tree root penetration through the concrete.** During the dry season when the soil moisture level is lowered and subsequently the soil contracts which results in shrinkage, tree roots will look for a water source in their surrounding environment. This shrinkage results in movement of underground soil, and the neighbouring concrete wall/foundation is disturbed. **Tree root penetration will quickly exacerbate any leaks within the pool shell as moisture will remain constant in these areas**

and as witnessed on this pool as soon as the roots have made their way through the shell will swell and cause further cracking. **Tree roots were witnessed coming through the significant cracks, and throughout the pool SWR troughs.**

4.3 Pool shell penetrations where lights have been installed have deteriorated and leaked. this has been witnessed in the light well pits behind the pool wall where moisture and **tree roots were witnessed.** Pits number 3, 17 and 19 (P007) clearly show the tree roots inside the pits. Further to this there is clear evidence of the pits holding water within pits 2,4,5,6,12,13,2 and 22 (P007,008). The pits are meant to dry and waterproof but the presence of water indicates seepage of swimming pool water into these pits.

4.9 Although not directly related to the issue with the water loss there are blockages in the gutters at the pool water level (P017). This is due to the **proximity of numerous Eucalyptus trees which surround the pool (P018), providing an abundant number of leaves to the pool.** Blocked gutters can prevent debris, leaves, and other foreign materials from being properly filtered out of the pool water. As a result, these contaminants can accumulate in the pool, leading to poor water quality. This can affect the pool's appearance, creating an unhygienic swimming environment, and potentially require additional chemical treatments to restore water balance (P016).

- Also, you can refer to **NORWOOD SWIMMING CENTRE – CCTV**
() showing fine tree roots in the Norwood Pool pipe network.
 - a. **And as a subsidiary to this, has there been any consideration given to a root barrier being constructed around the new swimming pool to mitigate this in the future?**

Consideration has been given to a root barrier around the new pool which can be effective to a depth of 1.2 metres. However, if the tree roots grow deeper than 1.2 metres, they will be able to travel beneath the barrier and behind the barrier.

Also, the new 50m pool will be 10 lanes (wider than the existing by 2 lanes), expanding to the east and closer to Tree 2 by approximately 5m. This means that any existing tree roots that are already in the vicinity will be in closer proximity to the new pool in the future.

3. **Do you have any evidence from your arborist to substantiate the suggestion that the safety risk attributable to the tree will increase in 10 years' time (per page 3 of your supporting statement)?**

On page 8 of the *Tree Report*, the arborist has stated that the Tree 2 has “a modest ULE, but at least 10 years”. The Arborist continues (noting highlights again are mine):

“Whether pruning can reduce the risk of branch failure in a tree like this is not certain, but the damage to the union near Hollow 3 warrants intervention. It appears that other collar fails have occurred, and it is possible to probable that union damage was involved in these. The branch shown in Appendix C Photo 8 is the largest and most extended in the tree. Reduction looks challenging but based on its extension over a public area an attempt must be recommended. Best cut options for a climbing arborist.”

While the arborist hasn't provided evidence to substantiate an increased safety risk beyond 10 years, based on the species characteristics (i.e. large, fast growing, shallow root system) and its condition, it is reasonable to believe that the tree will be at greater risk of failure in 10 years due to:

- increased size and extension (i.e. diameter and length) of branches subjected to increased loads (i.e. weight, wind and rain forces)
- ongoing decay of wood in existing hollows
- possible disease or decay due to wounded tree roots.

[Note: **ULE = Useful Life Expectancy**. Assessment of useful life expectancy provides an indication of health and tree appropriateness and involves an estimate of how long a tree is likely to remain in the landscape based on species, stage of life (cycle), health, amenity, environmental services contribution, conflicts with adjacent infrastructure and risk to the community. For more information on ULE or SULE (Safe Useful Life Expectancy), check out:

<https://treenet.org/resource/determining-the-retention-value-of-trees-on-development-sites/> and <https://www.blacktown.nsw.gov.au/files/assets/public/public-exhibitions/spp-18-00005/tree-sule-2005.revised.pdf>

4. The arborist report suggests (p. 15) that the trip hazard posed by the protruding root extending west, and therefore the usability of this area, could be mitigated by other means such as incorporating fill and lawn into the area around the tree and thus providing a usable landscaped area or constructing a raised timber deck for public use. Have any of these options being investigated or considered, and to what extent?

Yes, however when considering the trip hazard in combination with the potential hazard of a falling branch and the expected increase in pool users after redevelopment, if we simply put lawn around the tree or constructed a raised timber deck, we would potentially be increasing the safety risk by permitting people to sit / lay immediately beneath the tree canopy. We have therefore opted for a mulched garden bed around the tree to reduce the potential safety risk (i.e. remove the stationary human targets from the immediate hazard area).

Note: there was a falling tree branch incident at a playground last week in Mt Barker.
<https://7news.com.au/news/south-australian-mothers-leg-broken-in-three-places-as-kids-and-parents-hit-by-falling-tree-branch-at-mount-barker-playground--c-13261765>

5. Your supporting statement explains that retaining the uncontrolled contaminate fill on-site is the highest preference from an EPA perspective, and that to dispose of this fill elsewhere will incur waste disposal fees. Are you able to provide an estimate for what these fees might be?

Refer to previous email (attached).

Regards,

Jared Barnes AILA
MANAGER, CITY PROJECTS

City of Norwood Payneham & St Peters
 175 The Parade, Norwood SA 5067 | *Kaurna Country*
Telephone
Mobile
Email
Website www.npsp.sa.gov.au

From: Kieran Fairbrother <KFairbrother@npsp.sa.gov.au>
Sent: Tuesday, January 16, 2024 4:27 PM
To: Jared Barnes
Cc: Geoff Parsons ; Peter Wellington ; Derek Langman
Subject: RE: Planning Application for Variation to Planning Approval to remove Significant Tree #2 - Payneham Memorial Swimming Centre

Hi Jared and Peter,

I do have a few queries/request for further information for this one, if you wouldn't mind responding to the following as soon as possible:

1. In your supporting statement (attached), on page 2 and throughout, you quote comments from the arborist you engaged for this project. However, I cannot see those words in the arborist report provided with this application. Do you have another report/correspondence in which these statements are made, and if so can you please provide these? (This is important because there are comments here about the tree being difficult to retain and roots growing in the vicinity of the pool etc)
2. Do you have any evidence to substantiate the suggestion that roots from this tree may have caused or contributed to cracking causing leakage in the existing pool, per page 2 of your supporting statement?
 - a. And as a subsidiary to this, has there been any consideration given to a root barrier being constructed around the new swimming pool to mitigate this in the future?
3. Do you have any evidence from your arborist to substantiate the suggestion that the safety risk attributable to the tree will increase in 10 years' time (per page 3 of your supporting statement)?
4. The arborist report suggests (p. 15) that the trip hazard posed by the protruding root extending west, and therefore the usability of this area, could be mitigated by other means such as incorporating fill and lawn into the area around the tree and thus providing a usable landscaped area or constructing a raised timber deck for public use. Have any of these options being investigated or considered, and to what extent?

5. Your supporting statement explains that retaining the uncontrolled contaminate fill on-site is the highest preference from an EPA perspective, and that to dispose of this fill elsewhere will incur waste disposal fees. Are you able to provide an estimate for what these fees might be?

I look forward to you responses.

Please let me know if I can expand on any of the above.

Regards,

Kieran Fairbrother
SENIOR URBAN PLANNER

City of Norwood Payneham & St Peters

175 The Parade, Norwood SA 5067

Telephone

Email

Website www.npsp.sa.gov.au

**Instrument of Delegation
Assessment Manager**

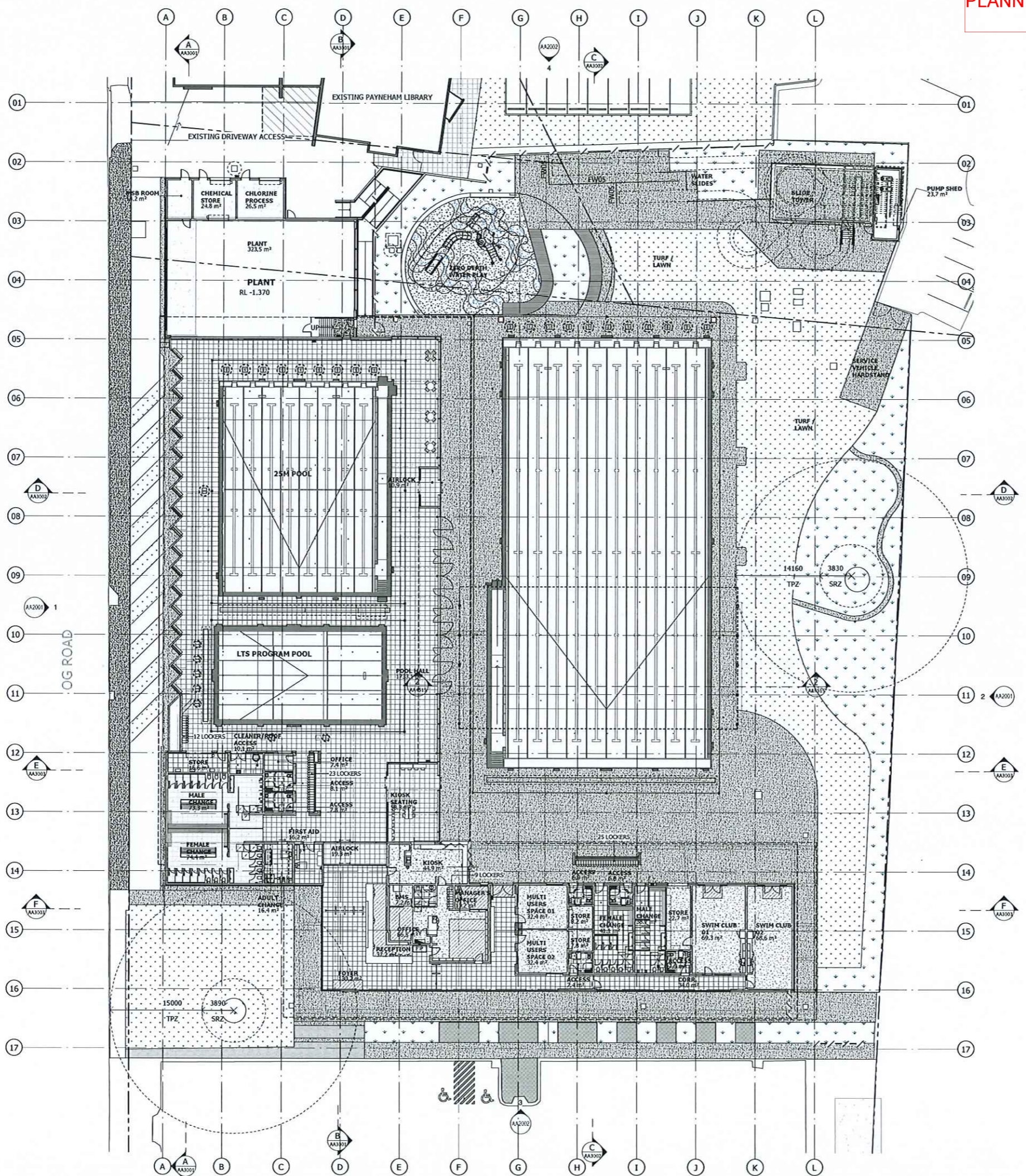
1. In exercise of the power contained in Section 100 of the *Planning, Development and Infrastructure Act 2016 (PDI Act)* the following powers and functions under the PDI Act and statutory instruments made thereunder are hereby delegated this 31st day of January 2022 to the City of Norwood Payneham & St Peters, Council Assessment Panel (**Council Assessment Panel**) subject to the conditions and/or limitations, if any, specified below:
 - 1.1 The power pursuant to Section 102(1)(a) of the PDI Act to grant or refuse planning consent, including the associated powers to reserve matters and/or impose conditions.
2. The exercise of the powers and functions delegated in paragraph 1 above is to be limited to assessment of Development Application ID 24000067 for a *Variation to Development Applications 22017508 and 23024217 comprising the removal of Tree 2 (a significant Flooded Gum)* at 188 O G Road Felixstow SA 5070.



Signed
Geoff Parsons
Assessment Manager

FOR APPROVAL
 AND STAMPING

Attachment 5



Notes
 Verify all dimensions and levels on site and report any discrepancies to dwp for direction prior to the commencement of work.
 Drawings are to be read in conjunction with all other contract documents.
 Use figured dimensions only. Do not scale from drawings.
 dwp cannot guarantee the accuracy of content and format for copies of drawings issued electronically. The completion of the Issue Details Checked and Authorized section is confirmation of the status of the drawing. The drawing shall not be used for construction unless endorsed for construction and authorized for issue.
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 Registered Business Name dwp Australia ABN 37 169 328 018
 Nominated Architect Angus Rose NSW AASB 8311
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FOR TENDER
 NOT TO BE USED DURING CONSTRUCTION

Issue	Description	Date	OA	Auth
A	TI	15/05/2023		

Architect/Designer
 dwp
 www.dwp.com

Client
 CITY OF NORWOOD PAYNEHAM AND ST PETERS

Project
 PAYNEHAM MEMORIAL SWIMMING CENTRE REDEVELOPMENT
 Location
 194 O G Rd,
 FELIXSTOW SA 5070

Project Number
21-0255

Drawing
 GENERAL ARRANGEMENT PLAN -
 GROUND OVERALL

Scale (A1)
 1 : 250
 Date Printed
 15/08/2023 4:14:59 PM
 Drawing Number
AA1202
 Issue
A



6. **DEVELOPMENT APPLICATIONS – DEVELOPMENT ACT**
7. **REVIEW OF ASSESSMENT MANAGER DECISIONS**
8. **ERD COURT APPEALS**
9. **OTHER BUSINESS**
(Of an urgent nature only)
10. **CONFIDENTIAL REPORTS**
11. **CLOSURE**