Bayside City Council

Thomas St, Hampton - Warm Water/Hydrotherapy Feasibility Study

Draft Report

September 2021

About this document

This document provides a site review, design concept and costing for a warm water and hydrotherapy pool in Thomas St, Hampton.

Previous documents related to this study include the Warm Water/Hydrotherapy Pool Feasibility Study 2020. City of Bayside.

Acknowledgements

@leisure would like to acknowledge the support and assistance provided by:

- Sara Townsend. Recreation and Events Co-ordinator. City of Bayside
- Damian Van Trier. Manager Open Space and Wellbeing. City of Bayside

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1. Introduction

The project

Bayside City Council require a feasibility study including design concept, capital and cyclic cost estimates for a future hydrotherapy/warm water facility at 219 Thomas St, Hampton. The site to be considered is the existing netball facility which is home to the Sandringham District Netball Association, Bayside Badminton Club and the Sandringham Youth Club. The Netball Association will be relocating to a larger venue within Bayside at Sandringham College in Hollaway Road, which will accommodate the growing demand for netball facilities in the area.

Project scope

To apply the findings of the previous Warm Water/Hydrotherapy Pool Feasibility Study with the further option of an additional hydrotherapy pool (if space permits). Prepare an issues and opportunities paper to consider the suitability of the existing Sandringham Youth Club site located at 219 Thomas Street Hampton to deliver a Warm Water Pool (WWP).

Objectives

- Undertake detailed site analysis to determine the type of facility that could be developed at the site (based on specifications listed in section 5 of the Brief)
- Prepare a report that discusses the opportunities and issues of the site to develop a WWP
- Consider the vegetation at the site and identify any limitations to development at this site
- Evaluate the existing parking and traffic management at the site – previous traffic management assessment attached
- Consider design principles to achieve five staff green rating
- Seek planning advice regarding the site.

Project outputs

- Present a draft report discussing issues and opportunities at the site, implications of planning advice and proposed schematic design
- Council to provide direction on the draft report
- Content of the final report to be agreed but will as a minimum include:
    - Proposed site plan demonstrating any specified setbacks
    - Floor plan
    - QS on concept plan
    - Traffic management implications
    - Construction and ongoing cyclic costs
    - Measures to address Bayside's declaration of a climate emergency and desire to achieve a five-star green rating.

Background

A previous study by @leisure Planners in 2020 reviewed 6 possible locations for a warm water pool in Bayside. The netball venue in Thomas St was not considered as part of the study as the relocation of the netball courts was not confirmed at the time.

The sites previously reviewed were:

- Hurlingham Park, 1 Palmer Avenue, East Brighton
- Brighton Bowls Club, 306 Dendy St, Brighton
- Brighton Golf Course, 210 Dendy St, Brighton
- Dendy Park Tennis Centre, 306 Dendy St, Brighton
- Sandringham Family Leisure Centre, 188 Tulip St, Cheltenham
- Old CSIRO site, 37 Graham Road, Highett

The sites that ranked the highest in the previous study for a warm water pool were the Sandringham Family Leisure Centre and the entrance to the Brighton Golf Course in Dendy St, Brighton. Both sites are central to the Bayside population, on land that is relatively flat, owned by Council and of a size that can accommodate the required components with relatively few constraints. A key factor for the high ranking of the Brighton Golf Course site is the ability to commence construction in the short term. Such a development is contingent on agreement of scope and partnership with the existing lessee Leisure Management Services (LMS). If an agreement can't be met, the project would require deferment until 2028, when the current lease agreement expires.

The Sandringham Family Leisure Centre is a logical site for a future development that includes a warm water pool. However, the feasibility, planning, design and construction timeframe for a large-scale redevelopment could take 5 – 7 years.

2. The site

The current site includes 6 outdoor netball courts, 1 indoor netball court, 4 indoor badminton courts and a sealed car park.

The Sandringham Netball Association organise competition netball and clinics at the site while several netball clubs use Thomas St as a training venue.

Bayside Badminton Club program the 4 indoor badminton courts for adult and children with morning, weeknight and weekend competition.

The land adjoins the Sandringham Athletics Track to the west. Entry to the athletics track is off Glamis Avenue.

Opposite the netball courts on the south side of Thomas St is the Thomas St Reserve which has recently had a large accessible playground installed including extensive accessible play equipment, a senior's exercise area, picnic shelters, a Changing Places and public toilet facility.

To the east and north are residential properties.

Figure 1. Aerial view of 219 Thomas St, Hampton. Image Google earth

2.1 Planning

219 Thomas St, Hampton comprises of four parcels of land each zoned as Public Park and Recreation Zone (PPRZ). The four lots are formally identified as Lot 1TP700442, Lot 1TP230813, Lot 1TP239994 and Lot 1TP247721. Immediately to the west is Lot 1TP665761 which incorporates the Sandringham Athletics Track.

The land is not in a designated bushfire zone.

There are 3 overlays that apply to each of the land parcels. They are:

- Design and Development Overlay (DDO)
- Development Contributions Plan Overlay (DCPO)
- Special Building Overlay (SBO).

All or part of each parcel is an 'area of cultural heritage sensitivity'.

Figure 2. The above map shows the four parcels of land to the east of the Sandringham Athletics Centre that make up the current netball site and the Thomas St South Reserve. Image - Mapshare.vic.gov.au

Refer to Appendix 1 for maps and parcel details

2.2 Site Review

Arboricultural Assessment

A Preliminary Arboricultural Assessment of the site was undertaken by Arbor Survey in mid 2021.

Some 104 trees were assessed on the project site and on adjacent land where the tree protection zones may extend into the project site and may be affected by future site development.

Of the assessment of the 104 trees, 11 trees were rated as having high protection value, 48 trees were rated as having moderate protection value and 45 trees were rated as having no protection value.

As the design concept for a warm water pool shows the building envelope largely over the existing courts, there would be no significant impact on the existing trees. This would be confirmed once detailed design is undertaken.

Traffic Assessment

In 2015, GTA Consultants undertook an assessment of the car parking and traffic impacts for the proposed expansion of an additional 2 outdoor courts at the site, as well as redevelopment of the stadium that would include seating for 250 spectators.

GTA commissioned week-long pneumatic tube counts at Fewster Street and Thomas St in front of the netball site on August 1, 2015.

The data showed:

- Saturday traffic volumes on Thomas St were approximately 350 per hour around 10am
- Traffic volumes for Thomas St were typical its the classification in the road hierarchy and not considered to present operational or safety concerns in regard to obtaining access for additional development generated traffic
- Weekday traffic travelled approx. 5km per hour faster than weekend traffic on Thomas St
- It was recommended that Council consider implementing a 40km/hr traffic zone in the vicinity
- Off street parking at the site totalled approx. 113 spaces, with 71 unrestricted spaces along Thomas St, Fewster St and Glamis Avenue
- Car Parking demand between 10.30am and 12.30am at 30 minute intervals showed an 83% occupancy for the 42 spaces
- It was anticipated that an additional 50 car park spaces were required to meet the demands of an additional 2 courts.

Parking requirements and traffic to a warm water pool is unlikely to reach the peak volumes that are generated by 6 outdoor netball courts. Usage would be spread across seven days with likely peaks on weekday evenings between 4pm and 6pm and Saturday mornings between 9am and 12pm when swimming lessons are in progress. It is anticipated that at peak time there could be some 35 car parks required with frequent turnover associated with swim lessons of 30-minute length. Estimated demand will vary depending on the program schedule of the venue.

The draft concept proposes that all existing formal car parking spaces remain at the site.

Photo 1. Entry to 219 Thomas St, Hampton

2.3 Advantages / Disadvantages of the Thomas St, Hampton site

Following a review of the Thomas St site the following advantages and disadvantages are noted for its potential to accommodate a warm water facility.

Figure 2. Aerial view of netball courts at 219 Thomas St, Hampton. Image Google earth

Advantages

- Site can accommodate the required components (See Table 1)
- Development can proceed relatively quickly as netball plan to vacate site by December 2022
- Flat site means the development is more easily accommodated
- Arborist report shows a minimal impact on existing significant trees
- Zoned Public Park and Recreation Zone (PPRZ) which the proposed development aligns with
- Off street parking can be incorporated on site
- Centre usage more likely be spread over a number of hours /days and have less peak traffic/parking implications than netball
- The site is central to the City of Bayside and in area with a high proportion of residents aged 60 and over

Disadvantages

- Planning scheme overlays include Design and Development, Development Contributions Plan and Heritage Overlay to be addressed in detailed design
- Melbourne Water easement cuts diagonally across site (See Figure 4). However does directly impact design components
- Contaminated soil across site – will require further soil testing analysis
- There are hydrotherapy pools at Epworth Brighton and Platinum Physiotherapy Brighton within 4.5km and 3.5km respectively that offer similar services
- Public transport does not service the site directly – Bus route 828 (Edinburgh St) some 300m away west and bus 708 (Bluff Road) some 400m away to east
- No likely management entity in immediate vicinity to provide shared services and management expertise

Figure 3. Level of soil contamination at 219 Thomas St, Hampton. Image Bayside City Council

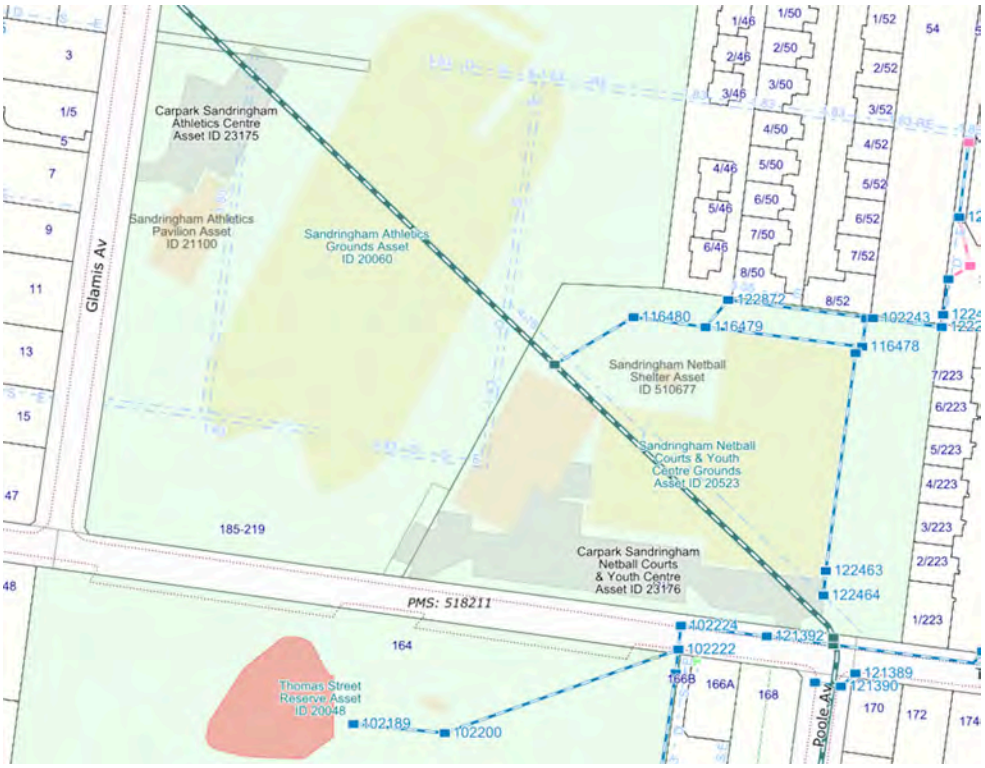


Figure 4. Melbourne Water easement running diagonally across site. Image Bayside City Council

3. Climate Emergency and Green Star rating

3.1 Climate emergency declaration

Bayside City Council declared a climate emergency on December 17, 2019. Following the declaration, the Climate Emergency Action Plan 2020 – 2025 was developed.

The plan outlines seven principles and seven themes. Each theme has a series of actions and deliverables with an individual timeframe.

Actions directly applicable to the planning, construction and operation of a new warm water pool in Bayside include:

- Review and update the Procurement Policy and procedures to address climate change impacts from Council and contractor actions
- Establish and communicate a science-based greenhouse gas emissions reduction target for the entire Bayside community, in line with the Paris Agreement
- Implement a behaviour change program to encourage residents and visitors to switch to 'zero carbon' transport modes
- Implement a local Environmentally Sustainable Development Planning Policy in line with the Climate Emergency
- Review and update the Sustainable Infrastructure Policy to align with Climate Emergency principles
- Include requirements to address environmental impact into leases of Council property
- Investigate opportunities for a pilot 'zero carbon' development
- Accelerate review of the Integrated Water Management Plan and implement to address climate change impacts
- Review and update Bayside's Recycling and Waste Management Strategy to reflect the transition to the 'circular economy'
- Purchase all electricity used by Council from renewable sources.

3.2 Green Star rating

Launched by Green Building Council of Australia (GBCA) in 2003, Green Star is Australia's largest voluntary sustainability rating system for buildings, fitouts and communities.
Green Star aims to transform the built environment by:

- Reducing the impact of climate change
- Enhancing our health & quality of life
- Restoring and protecting our planet's biodiversity and ecosystems
- Driving resilient outcomes for buildings, fitouts, and communities
- Contributing to market transformation and a sustainable economy[1].

[1] New.gbca.org.com

Figure 5. Green star rating system showing the levels required to be met for a 5-star building. Image Green Building Council Australia. Image - new.gbca.org.com

The GBCA have developed the Green Star Communities Guide for Local Government
The guide outlines the framework developed in 2019-10 with over 4000 stakeholders.
The framework provides 5 principles that define a sustainable community in Australia. They are:

- Enhances liveability
- Creates opportunities for economic prosperity
- Foster environmental responsibility
- Embraces design excellence
- Demonstrates visionary leadership and strong governance

Features that could be included in a 5-star rated warm water pool facility in Bayside are:

- Tendering and Procurement policy that minimises the carbon footprint during construction and reduce energy use during operation
- Structural design detail that ensures the building's thermal envelope is not compromised
- Construction material that includes use of brick and timber
- Electricity from renewable sources including rooftop solar
- Air and water heated via renewable energy not gas
- Retention of storm water from building and site to reduce use of potable water
- Installation of raingardens to treat stormwater and reduce pollution
- Pool water recyling treatment that minimises water waste from pool backwashing
- Centre purchasing policies that reduces or eliminates the use of plastics.

A 5-star green rating will reduce the carbon footprint of a new standalone, warm water pool in Bayside, however the inclusion of a warm water pool at a redeveloped Sandringham Family Leisure Centre will have a much greater environmental impact. The SFLC is likely to be one of the largest users of energy of any of Bayside Councils existing building assets.

4. Components and Design

At the May 2021 Ordinary Meeting of Council a request to consider the inclusion of a hydrotherapy at the Thomas St site was adopted. The m2 below was provided as indicative of the required size pending review of current minimum standards.

Area schedule	Size	Area schedule	Size
Accessible change	10	WWP moveable floor	500
Accessible change	10	Hydrotherapy Pool	300
Accessible change	10	Pool plant	45
Administartion	35	Pool store	30
Allied Services	360	Reception	11
Café	60	Staff change rooms	20
Café Terrace - Optional	55	Staff room	25
Changeroom Female	35	Utilities	15
Changeroom Male	35	Family change room (no shower)	5
Changing places	15	Family change room (no shower)	5
First aid room	20	Family change room (no shower)	5
Foyer	30	Family change room (no shower)	5
Office	12	Family change room (no shower)	5

Table 1. Area schedule provided in Brief for the Thomas St venue

The following concept site plan was developed that meets the key criteria including:

- Confirmation that the site is large enough to include the requested components above
- Avoids water easement
- Approximately 70 car spaces retained
- Limited significant tree impacts
- Allows for 20m set back from residential property
- Existing entry and exits from site can be retained.

4.1 Floor plan

The proposed plan shows two pool halls to allow for multi-purpose activity in the warm water pool hall, while allowing the hydro pool to be dedicated to allied health and wellbeing. This has allowed for a centralised amenity zone with some amenity on pool deck.

The floor plan shows a 500sqm warm water pool with ramp entry with accessible and family change rooms immediately opposite the pool ramp.

The warm water pool could be programmed for swimming lessons, aqua aerobics classes and available for casual public use.

The 300sq/m hydrotherapy pool has been designed specifically for allied health use, who could maximise the higher pool temperatures, and individual one on one use for high level rehabilitation. The design allows for separate lease or sub lease of the allied health space and hydrotherapy pool. Detailed design of the allied health space should include input from the potential operator.

A small café incorporated into the centres main reception allows the operator of the warm water pool to maximise staff resources by servicing both areas.

Lifeguard supervision would be required for the warm water pool at all times. The hydrotherapy pool would be only used under the supervision of appropriately trained allied health professionals with the support of Lifeguard trained staff from the warm water component when required in emergencies.

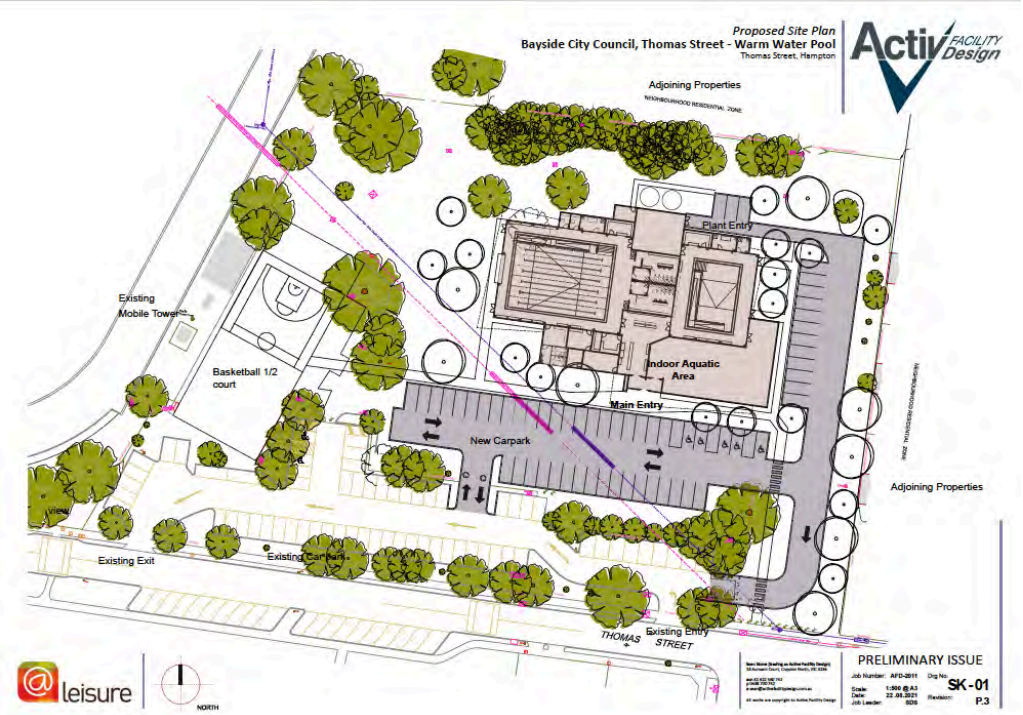


Figure 6. Draft site plan for the Thomas St venue

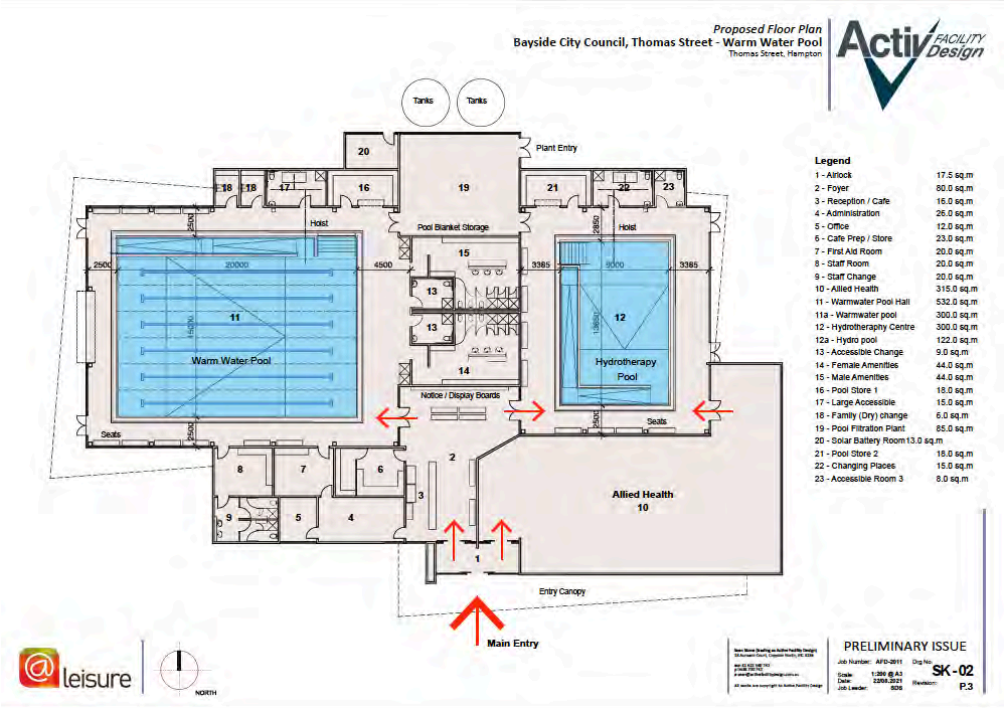


Figure 7. Draft floor plan for the Thomas St venue

5. Indicative capital and recurrent costs

Based on the concept by Active Design, Turner Townsend Quantity Surveyors have provided indicative costs for the facility and estimated that the capital cost would be $15,000,000. (See Table 4 below and Appendix 5 for detail. More accurate estimates can be made following detailed design.

The net annual result has been estimated at $9,000, with annual visitations estimated at over 65,000 per annum.

The recurrent costs for the proposed venue show a positive result, unlike the 2020 study for a warm water pool. The variation to the design in the 2020 shows a larger warm water pool that allows for a greater number of swim lessons. A hydrotherapy pool also allows those with higher needs to be separate from the more heavily programmed warm water pool.

It is assumed that the allied health space would be leased allowing full access and control of the hydrotherapy pool. Other recurrent costs assume inhouse management. However there is likely to be some interest in the facility for a lease arrangement with the potential for a capital contribution from a ieasee.

Depending on the agreed operational objectives, the venue could attract much higher patronage for a learn to swim program than estimated in the base case below. There is likely to be high demand for casual warm water access and adult exercise classes, which may not provide the same financial returns as a learn to swim program. The base case example calculates income for swim lessons in 2 lanes Monday – Friday between 9.00am and 12.00pm and 3 lanes from 4.00pm – 6.00pm.

Table 3. Estimated operational costs for a warm water and hydrotherapy pool at 219 Thomas St, Hampton.

Thomas St Warm Water Pool Feasibility Potential Income and Expenditure					
219 Thomas St Hampton	**Classes /Hrs pwk**	**Price**	**Attendance /Number per week**	**Weeks per annum**	**Base Case Total PA**
Income					
Casual Access	1	$9	29	51	$13,311
Concession Peak	1	$7.50	260	51	$99,450
Aqua Fitness	5	$19.00	4	51	$19,380
Aqua Fitness concession	5	$17.00	8	51	$34,680
Learn to swim - pre school	60	$19.25	5	40	$231,000
Learn to swim - school age	60	$19.25	4	40	$184,800
Pool Hire per lane	5	$54.00	1	50	$13,500
Café					$32,616
Allied Health Lease (Consulting and Hydro Pool)					$80,000
Total					$708,737
Expenses					
Wages					$482,083
Marketing					$30,000
Café cost of goods					$20,385
Utilities and Maintenance					$151,300
Operating					$16,000
Total					$699,768
Net					**$8,968**

Exclusions/Assumptions
Entry costs based on current GESAC fee schedule
Assume operating hours - 78 p/week
Assume allied health suite leased inc hydro pool
Casual attendance numbers based on New Focus Research 2018 and @leisure models
Aqua classses and LTS based on GESAC usage
Expenses based on benchmarks from like aquatic centres
More detail require to assess best energy options for pool water and air heating
Centre is managed internally by Council - Manager costs in 'Wages'
Two staff on duty at all times including 1 Lifeguard

Table 4. Estimated capital cost for a warm water and hydrotherapy pool at 219 Thomas St, Hampton.

Bayside Warm Water Pool Feasibility Indicative Capital Costs

Function	Area m2	Rate per sq metre	Cost
Building Works - Ground Floor			
Airlock	17.5	$ 4,000	$ 70,000
Main Foyer	80	$ 2,500	$ 200,000
- Extra for reception joinery	Allow		$ 30,000
- Extra for turnstiles			EXCLUDED
Administration Area	26	$ 2,500	$ 65,000
Office	12	$ 2,500	$ 30,000
Café Prep / Store	23	$ 3,000	$ 69,000
Extra over for kitchen equipment			$ 150,000
First Aid Room	20	$ 2,700	$ 54,000
Staff Room	20	$ 2,600	$ 52,000
Staff Change	20	$ 3,000	$ 60,000
Allied Health	315	$ 2,700	$ 850,500
Warm Water Pool Hall	532	$ 3,000	$ 1,596,000
Hydrotherapy Centre	300	$ 3,000	$ 900,000
Accessible Change	9	$ 4,000	$ 36,000
Female Amenities and Change	44	$ 3,000	$ 132,000
Male Amenities and Change	44	$ 3,000	$ 132,000
Aquatic Pool Store	18	$ 2,000	$ 36,000
Accessible Change - Large	15	$ 4,000	$ 60,000
Family Dry Change	6	$ 4,000	$ 24,000
Aquatic Filtration Plant	85	$ 2,200	$ 187,000
Solar Battery Room	13	$ 2,200	$ 28,600
Changing Places	15	$ 4,500	$ 67,500
Accessible Change	8	$ 4,000	$ 32,000
Roof Covered Way	Allow		$ 78,750
Mechanical Plant Room / platform	Allow		$ 300,000
Allowance for piled foundations			EXCLUDED
Allowance for fire sprinklers [excls pool halls]			EXCLUDED
Allow for AV infrastructure	Allow		$ 100,000
Allow for new building signage	Allow		$ 100,000
Allwance for entrance Canopy	Allow		$ 60,000
Total building works	1,623		$5,500,350

Aquatic Works - Internal			
New indoor warm water pool incl ramp	Allow		$ 1,650,000
New hydrotherapy pool	Allow		$ 671,000
Pool equipment	Allow		$ 60,000
Builders works [excavation, etc]	Allow		$ 100,000
Allowance for piled foundations	Allow		EXCLUDED
Preliminaries on aquatic works	Allow		$ 297,720
Total aquatic works			$2,778,720

External Works and Services			
Site preparation/demolish netball courts and carpark	Allow	$70,000	$ 155,445
Allow for earthworks	Allow	$4,800	$ 56,788
- Extra over for adverse soil / soil contamination	PROV SUM	$80,000	$ 500,000
Connect new carpark to existing incl make good at junction	Allow		$ 30,000
Carparking / driveway - permeable pavement	2177	$ 270	$ 587,790
External plant yard	99	$650	$ 64,350
Landscaping - soft	Allow		$ 150,000
Landscaping - hard	Allow		$ 100,000
External services - Stormwater	Allow		$ 467,820
Total external works and services			$2,112,193
Sub total			$10,391,263

ESD initiatives		3%	$ 519,563
Design and construction contingency		5%	$ 1,040,000
Cost Escalation to tender			EXCLUDED
Construction cost			$11,950,826

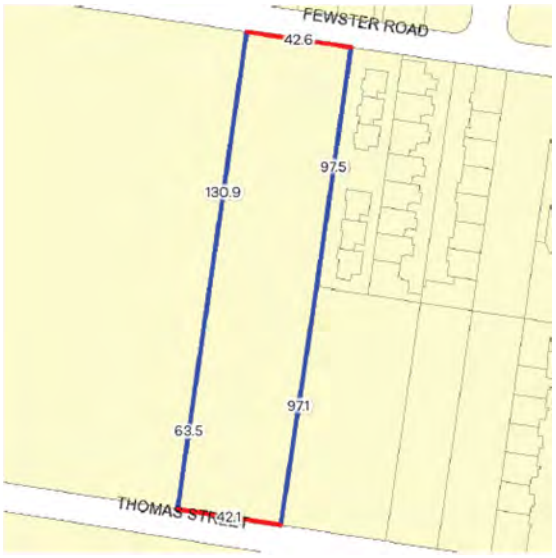
Construction Contingency		10%	$ 1,196,000
Professional Fee Allowance [Incl PM]		9%	$ 1,076,000
Authority Fees & Charges	Allow	1%	$ 120,000
- Substation contribution	Allow		$ 100,000
Fixtures, Fittings and Equipment	Allow	5%	$ 359,000
Audio Visual/ Active IT Equipment Allowance/ Members systems	Allow		$ 200,000
- Gym equipment [assumed leased]	Note		EXCLUDED
Council internal costs	Allow		EXCLUDED
Legal, permits, marketing, other professional Fees	Allow		EXCLUDED
Sub total			$3,051,000
TOTAL			$15,001,826

Exclusions			
We have expressly not taken into account the impact of the Covid 19 pandemic (or any other matter coming to our attention after the date of this report) and accordingly have excluded from this report any implications in relation to programme, costs, supply shortages, performance of parties due to shortages of labour and the inability to travel due to global and national travel restrictions, etc. Turner & Townsend accepts no liability for any loss or damage which arises as a result of such matters or any reliance on this report which assumes such matters have been taken into account.			
GST	Cost Escalation beyond September 2021		
Upgrade or provision of authority services infrastructure external to the site	Works to adjoining streets		
Land, legal and finance costs	Public Art		
Adverse soil conditions incl. excavation in rock, contaminated soil, soft spot	Asbestos & other hazardous materials removal		
Diversion / relocation of existing inground services	Stormwater on site retention / detention system		
Relocation / Decanting / Temporary Accom	Planning permit fees		
Works to existing carpark, Sandringham Youth Club building and surrounding landscaping	Cyclic costs		
	Note: Exclusions within cost plan		

6. Appendices

Appendix 1. Property details for 219 Thomas St, Hampton

Sandringham District Netball Association
Property Details
Lot 1TP700442
219 Thomas St, Hampton 3188
Standard Parcel Identifier: 1\TP700442
Area: 8,271 sq. m



Not designated bushfire prone area
Planning Information
Planning Zone
Public park and Recreation Zone (PPRZ)
Design and Development Overlay (DDO)
Development Contributions Plan Overlay (DCPO)
Special Building Overlay (SBO)
All or part of this parcel is an 'area of cultural heritage sensitivity'

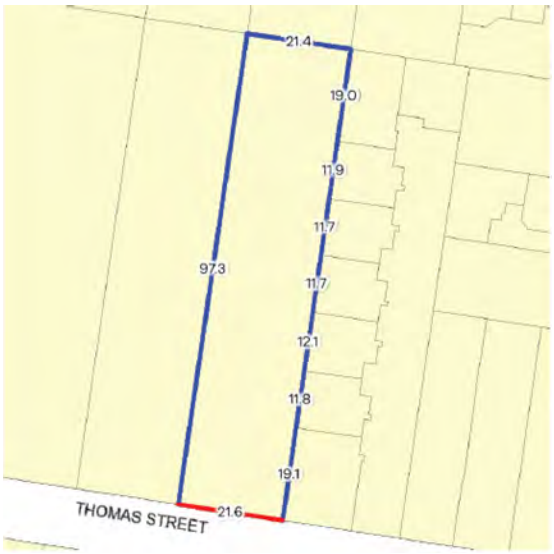
Sandringham District Netball Association
Property Details
Lot 1TP230813
219 Thomas St, Hampton 3188
Standard Parcel Identifier: 1\ TP230813
Area: 4,142 sq. m

Not designated bushfire prone area
Planning Information
Planning Zone
Public park and Recreation Zone (PPRZ)
Design and Development Overlay (DDO)
Development Contributions Plan Overlay (DCPO)
Special Building Overlay (SBO)
All or part of this parcel is an 'area of cultural heritage sensitivity'

Sandringham District Netball Association
Property Details
Lot 1TP239994
219 Thomas St, Hampton 3188
Standard Parcel Identifier: 1\ TP239994
Area: 2,047 sq. m

Not designated bushfire prone area
Planning Information
Planning Zone
Public park and Recreation Zone (PPRZ)
Design and Development Overlay (DDO)
Development Contributions Plan Overlay (DCPO)
Special Building Overlay (SBO)
All or part of this parcel is an 'area of cultural heritage sensitivity'

Sandringham District Netball Association
Property Details
Lot 1TP247721
219 Thomas St, Hampton 3188
Standard Parcel Identifier: 1\TP247721
Area: 2,090 sq. m



Not designated bushfire prone area
Planning Information
Planning Zone
Public park and Recreation Zone (PPRZ)
Design and Development Overlay (DDO)
Development Contributions Plan Overlay (DCPO)
Special Building Overlay (SBO)
All or part of this parcel is an 'area of cultural heritage sensitivity'

Additional planning information

PPRZ Conditions

- There must be no vehicle access through the park
- There must be no direct access into the park from abutting residential properties.

Design and Development Overlays

Design objectives

- To achieve architectural and urban design outcomes that contribute positively to local urban character and enhance the public realm while minimising detrimental impact on neighbouring properties
- To preserve the existing character and amenity of the areas as low rise (up to two storeys) suburban areas with a strong garden character
- To maintain the prevailing streetscape rhythm, building scale and height of neighbourhoods. To maintain a strong landscape character with buildings set within vegetated surrounds.

SCHEDULE 1 TO CLAUSE 45.06 DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY

Development on public land.

SCHEDULE TO CLAUSE 44.05 SPECIAL BUILDING OVERLAY

Flooding management objectives to be achieved - None specified.

Permit requirement - None specified.

Application requirements 04/02/2021 - None specified.

Decision guidelines - None specified.

Appendix 2. What is the difference between hydrotherapy and other pools?

A hydrotherapy pool is a warm water pool designed for clinical aquatic rehabilitation and heated to a minimum of 33.5°C. The term "warm water pool" is typically a pool used for programming, lessons and exercise classes and for therapeutic activities. Warm water pools are generally heated pools to 32°C +. The following table outlines the desirable maximum temperatures of different types of pools.

Table 4. Recommended maximum pool water temperatures [6]

Recommended maximum pool water temperature	Temperature
Competitive swimming and diving, fitness training	28°C
Recreational, adult teaching, conventional main pool	29°C
Leisure pools	30°C
Children's swimming	31°C
Babies, young children, disabled	32°C
Hydrotherapy	35°C
Spa pools	40°C

Warm water pools offer more program flexibility, as they are suitable for swimming lessons, gentle exercise classes as well as rehabilitation activities and programs.

There is an Australian Standard for the development and operation of purpose-built Hydrotherapy Pools – AS 3979-2006. Pool water heated to higher temperatures (optimum 33.5°C to 35°C), requires higher turnover (2 hours or less), more frequent filtration and have different chemical dosage rates to normal pools. Alarm systems with accessible points from several positions within the pool and around the concourse are required.

Air temperature around a hydrotherapy and warm water pool are also warmer than a typical swimming pool, maintained at approximately 25-28°C.

The cost of building and operating a pool to meet Hydrotherapy standards is higher than a warm water pool.

[6] Pool Water Treatment Advisory Group (UK). Code of Practice for Swimming Pool Water - Updated to reflect the requirements of Managing Health and Safety in Swimming Pools (HSG179) November 3, 2017

Appendix 3. Pool heating options

Water and space heating can account for up to 80% of an aquatic centre's total energy costs and is the single most expensive operating cost after labour.[7] [lf]

Pool heating options to consider for an indoor warm water pool and hydrotherapy pool that does not include fossil fuels include:

- Heat pumps
- Geothermal
- Hydrogen
- Solar/Battery
- Trigeneration
- Combination – rotary heat exchange, electric system with solar.

Electric heat pumps

Heat pumps extract heat from the air (similar to a reverse cycle air conditioner) and use that heat to produce hot water.

Electric heat pumps are extremely energy efficient. They consume very little electrical energy to operate and produce much more in the form of heat. For example, if a heat pump consumes 2kW of electricity it will produce 6 to 10kW of heat energy.[8]

Electronic heat pumps are a common option for aquatic centres.

One of the disadvantages of this type of system is that they can lose their high energy efficiency slightly once the weather cools down, as the pump must work harder to heat the water against the outside temperature. Depending on outside temperature, some heat pumps can be subject to icing. Further information about heat pumps is provided in the following section.

Heat pumps/solar panels/battery

Heat pumps can also be used in conjunction with solar roof panels as an energy source with a battery used to store excess energy. Alternatively, energy can be returned to the electricity grid to earn credits from the electricity provider to help subsidise the overall energy costs.

Geothermal

It is not known if Bayside has access to geothermal energy.

Geothermal energy takes heat from below the earth's surface to heat pool water via a ground loop system requiring two bore wells.

The heat energy from the water is taken off via a heat exchanger and the cooled water is reinjected back down into the aquifer at about 40 degrees. [9]

It is suggested that savings of 730 tonnes per year of Co2 emissions can be made by using this heating source.

The new Gippsland Aquatic Centre have installed a 650 metre bore to reach an aquifer below the surface to access water at 65C.

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[7] Energy efficient water heating technology guide for aquatic centres. NSW Office of Environment and Heritage. 2019

[8] spasavic.com.au. Fact Sheet 12

[9] Lva.vic.gov.au

Solar strip heating

The solar strip system is commonly used to take the 'edge' off cold water pools and is currently in use at the Beechworth swimming pool. A portion of pool water is redirected to tubing located on a nearby roof structure, heated by the sun and returned to the pool. Heating is reliant on the sun shining and is restricted by the amount of roof space to install the tubing on. Typically, a pool blanket is used overnight to help retain the heat generated during the day in the pool water.

Co-generation/Trigeneration

Combination – rotary heat exchange, electric system with solar

This power plant produces multiple forms of energy from a single input. The most common is natural gas-powered combined heat and power (CHP), which produces power and heat, while trigeneration produces chilled water as the third output. Extra energy that would otherwise be wasted is recovered and used. However, there are many complex technical, regulatory and financial elements to this technology.

Cogeneration and trigeneration offer energy efficiency of 90% or more compared to fossil fuel-powered plants, which have a 30-40% maximum efficiency.10

The new City of Sydney, Gunyama Park Aquatic and Recreation Centre (Green Square) s to be heated by a cogeneration system, while a cogeneration system is currently being installed at Cardinia Life Aquatic and Recreation Centre in Melbourne.

Hydrogen

Hydrogen fuel cells produce electricity by combining hydrogen and oxygen atoms. The hydrogen reacts with oxygen across an electrochemical cell, similar to that of a battery to produce electricity, water and small amounts of heat.

Hydrogen can be stored in either gas or liquid forms.

Hydrogen is now used to power vehicles including buses and cars.

Hydrogen energy has been considered for the proposed Aquatics and Wellbeing Centre for George Town Council, Tasmania.

Recommendation

Based on our experience the electric heat pump option is likely to be the most effective and efficient option for Bayside. We recommend seeking the opinion from a mechanical engineer to determine the best option for Bayside during the detailed design process.

[10] poolandspaview.com.au

Appendix 4. Draft concept site plan and floor plan

Proposed Site Plan

Bayside City Council, Thomas Street - Warm Water Pool

Thomas Street, Hampton

Active FACILITY Design

Adjoining Properties

NEIGHBOURHOOD RESIDENTIAL ZONE

Plant Entry

Indoor Aquatic Area

Main Entry

New Carpark

Existing Mobile Tower

Basketball 1/2 court

view

Existing Exit

Existing Car park

THOMAS STREET

Existing Entry

NEIGHBOURHOOD RESIDENTIAL ZONE

Adjoining Properties

@leisure

NORTH

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PRELIMINARY ISSUE

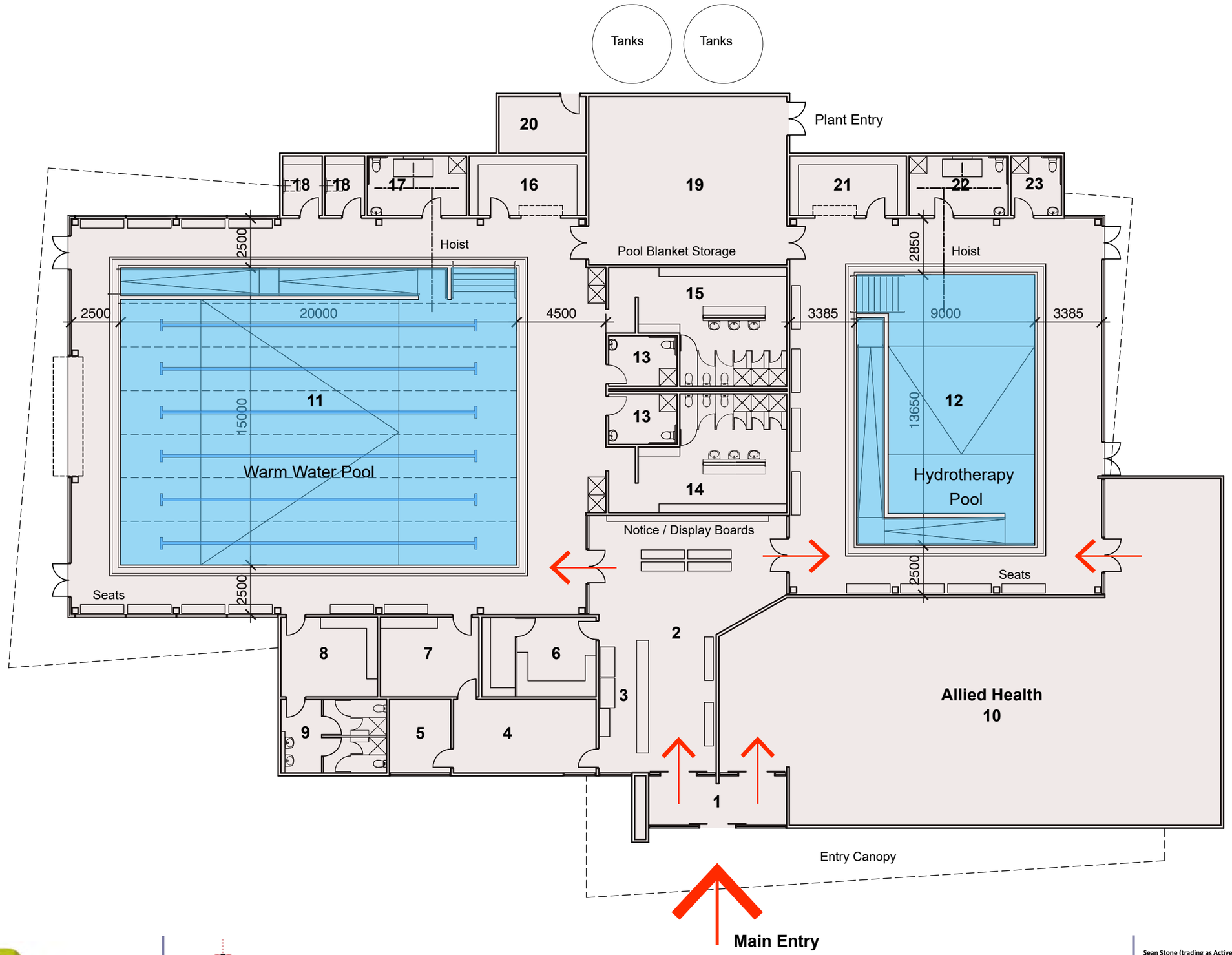
Job Number: AFD-2011
Scale: 1:500 @ A3
Date: 22 .08.2021
Job Leader: SDS

Drg No: SK-01
Revision: P.3

Proposed Floor Plan

Bayside City Council, Thomas Street - Warm Water Pool

Thomas Street, Hampton



Legend

1 - Airlock	17.5 sq.m
2 - Foyer	80.0 sq.m
3 - Reception / Cafe	16.0 sq.m
4 - Administration	26.0 sq.m
5 - Office	12.0 sq.m
6 - Cafe Prep / Store	23.0 sq.m
7 - First Aid Room	20.0 sq.m
8 - Staff Room	20.0 sq.m
9 - Staff Change	20.0 sq.m
10 - Allied Health	315.0 sq.m
11 - Warmwater Pool Hall	532.0 sq.m
11a - Warmwater pool	300.0 sq.m
12 - Hydrotheraphy Centre	300.0 sq.m
12a - Hydro pool	122.0 sq.m
13 - Accessible Change	9.0 sq.m
14 - Female Amenities	44.0 sq.m
15 - Male Amenities	44.0 sq.m
16 - Pool Store 1	18.0 sq.m
17 - Large Accessible	15.0 sq.m
18 - Family (Dry) change	6.0 sq.m
19 - Pool Filtration Plant	85.0 sq.m
20 - Solar Battery Room	13.0 sq.m
21 - Pool Store 2	18.0 sq.m
22 - Changing Places	15.0 sq.m
23 - Accessible Room 3	8.0 sq.m

@leisure

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PRELIMINARY ISSUE

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Scale: **1:200 @ A3**
Date: **22/08.2021**
Job Leader: **SDS**

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Revision: **P.3**

Appendix 5. Draft cost plan

Turner Townsend Confidential

Turner & Townsend

219 Thomas St, Hampton
Bayside Warm Water / Hydro Pool

Indicative Cost Plan

QS REF: me30671
Date: 12/09/2021

Function	Area m2	Rate $/m2	Overall $
Building Works - Ground Floor			
Airlock	17.5	$ 4,000	$ 70,000
Main Foyer	80	$ 2,500	$ 200,000
- Extra for reception joinery	Allow		$ 30,000
- Extra for turnstiles			Excluded
Administration Area	26	$ 2,500	$ 65,000
Office	12	$ 2,500	$ 30,000
Café Prep / Store	23	$ 3,000	$ 69,000
Extra over for kitchen equipment			$ 150,000
First aid room	20	$ 2,700	$ 54,000
Staff room	20	$ 2,600	$ 52,000
Staff Change	20	$ 3,000	$ 60,000
Allied Health	315	$ 2,700	$ 850,500
Warm Water pool hall	532	$ 3,000	$ 1,596,000
Hydrotherapy Centre	300	$ 3,000	$ 900,000
Accessible Change	9	$ 4,000	$ 36,000
Female Amenities and Change	44	$ 3,000	$ 132,000
Male Amenities and Change	44	$ 3,000	$ 132,000
Aquatic Pool Store	18	$ 2,000	$ 36,000
Accessible Change - Large	15	$ 4,000	$ 60,000
Family Dry Change	6	$ 4,000	$ 24,000
Aquatic Filtration Plant	85	$ 2,200	$ 187,000
Solar battery room	13	$ 2,200	$ 28,600
Changing places	15	$ 4,500	$ 67,500
Accessible Change	8	$ 4,000	$ 32,000
Roof covered way	Allow		$ 78,750
Mechnical plantroom / platform	Allow		$ 300,000
Allowance for piled foundations			EXCLUDED
Allowance for fire sprinklers [excludes pool halls]			EXCLUDED
Allow for AV infrastructure	Allow		$ 100,000
Allow for new building signage	Allow		$ 100,000
Allwance for entrance Canopy	Allow		$ 60,000
Total Building Works	**1,623**		**$ 5,500,350**
Aquatic Works - Internal			
New indoor warm water pool incl ramp	Allow		$ 1,650,000
New hydrotherapy pool	Allow		$ 671,000
Pool equipment	Allow		$ 60,000
Builders works [excavation, etc]	Allow		$ 100,000
Allowance for piled foundations	Allow		EXCLUDED
Preliminaries on aquatic works	Allow		$ 297,720
Total Aquatic Works			**$ 2,778,720**
External Works & Services			
Site preparation / demolish netball courts and carpark	Allow		$ 155,445
Allow for earthworks	Allow		$ 56,788
- Extra over for adverse soil / soil contamination	PROV SUM		$ 500,000
Connect new carpark to existing incl make good at junction	Allow		$ 30,000
Carparking / driveway - permeable pavement	2177	$ 270	$ 587,790
External plant yard	99	$ 650	$ 64,350
landscaping - soft	allow		$ 150,000
landscaping - hard	allow		$ 100,000
external services - Stormwater	allow		$ 467,820
Total External Works & Services			**$ 2,112,193**
Sub Total			**$ 10,391,263**
ESD Initiatives [5 star rating]		5%	$ 519,563
Design & Construction Contingency		10%	$ 1,040,000
Cost Escalation to tender			EXCLUDED
Construction Cost			**$ 11,950,826**
Construction Contingency		10%	$ 1,196,000
Professional Fee Allowance [Incl PM]		9%	$ 1,076,000
Authority Fees & Charges	Allow	1%	$ 120,000
- Substation contribution	Allow		$ 100,000
Fixtures, Fittings and Equipment	Allow	5%	$ 359,000
Audio Visual/ Active IT Equipment Allowance/ Members systems	Allow		$ 200,000
- Gym equipment [assumed leased]	Note		EXCLUDED
Council internal costs	Allow		EXCLUDED
Legal, permits, marketing, other professional Fees	Allow		EXCLUDED

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Turner Townsend Confidential

219 Thomas St, Hampton
Bayside Warm Water / Hydro Pool

Indicative Cost Plan

QS REF: me30671
Date: 12/09/2021

Function	Area m2	Rate $/m2	Overall $
Sub Total			$ 3,051,000
Project Total in Today's Prices (excluding GST)			**$ 15,001,826**

Exclusions:

We have expressly not taken into account the impact of the Covid 19 pandemic (or any other matter coming to our attention after the date of this report) and accordingly have excluded from this report any implications in relation to programme, costs, supply shortages, performance of parties due to shortages of labour and the inability to travel due to global and national travel restrictions, etc. Turner & Townsend accepts no liability for any loss or damage which arises as a result of such matters or any reliance on this report which assumes such matters have been taken into account.

GST
Upgrade or provision of authority services infrastructure external to the site
Land, legal and finance costs
Adverse soil conditions incl. excavation in rock, contaminated soil, soft spot
Diversion / relocation of existing inground services
Relocation / Decanting / Temporary Accom
Works to existing carpark, Sandringham Youth Club building and surrounding landscaping
Cost Escalation beyond September 2021
Works to adjoining streets
Public Art
Asbestos & other hazardous materials removal
Stormwater on site retention / detention system
Planning permit fees
Cyclic costs
Note: Exclusions within cost plan