



Boyne Tannum Aquatic Centre

Concept Design Options Report – Option 4

Gladstone Regional Council

23 February 2022



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Printed date	1/03/2022 4:55:00 PM
Last saved date	1 March 2022 4:55 PM
File name	https://projectsportal.ghd.com/sites/pp10_01/boynetannumaquaticre/ProjectDocs/12537620-REP_BTARC Concept Design Report - Option 4.docx
Author	Various
Project manager	Andrew Chiknaikin
Client name	Gladstone Regional Council
Project name	Boyne Tannum Aquatic Recreation Centre (BTARC) Facility Concept Design
Document title	Boyne Tannum Aquatic Centre Concept Design Options Report – Option 4
Revision version	Rev 0
Project number	12537620

Document status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	0	Various	R. Grayson	<i>R.Grayson*</i>	A. Chiknaikin	<i>A.Chiknaikin*</i>	23/02/22

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1. Introduction

1.1 Project Background

GHD Pty Ltd (GHD) has been engaged by Gladstone Regional Council (GRC, Council) to undertake the Concept Design for the Boyne Tannum Aquatic Recreation Centre (BTARC) Facility. The BTARC facility is to be a contemporary community aquatic centre facility with the recreational functions and the capability to host Swimming Australia local and regional events.

The project leverages previous studies and is being undertaken in a staged approach to ensure the development of an appropriate and functional design which meets the required community outcomes and Council's strategic objectives. This project is being delivered in the following phases:

- Studies completed previously
- Concept Design Options Study – *this phase*
- Concept Design and Reference Design
- Design and Construct delivery

1.2 Concept Design Options Study Addendum

Boyne Tannum Aquatic Centre Concept Design Options Report (GHD, 2021) described the approach to site masterplanning for the proposed facility. The report included:

- Definition of the functional requirements
- Site selection
- Preparation of three concept design options, construction staging, and cost estimates
- Infrastructure, services, and approvals reviews
- Options assessment

The functional requirements and objectives of the facility were subsequently refined to provide improved outcomes for the community and greater alignment with Council's objectives.

This report describes the refined objectives and functional requirements and Concept Option 4 descriptions, layouts, and cost estimates.

This report has been prepared as an addendum to *Boyne Tannum Aquatic Centre Concept Design Options Report* (GHD, 2021) and is to be read in conjunction with that document.

1.3 Scope and Limitations

This report: has been prepared by GHD for Gladstone Regional Council and may only be used and relied on by Gladstone Regional Council for the purpose agreed between GHD and Gladstone Regional Council as set out in this report.

GHD otherwise disclaims responsibility to any person other than Gladstone Regional Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Gladstone Regional Council and others who provided information to GHD (including Government authorities), which GHD has not independently verified or

checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The Cost Estimate has been prepared for the purpose of Concept Options Comparison and Staging Development and must not be used for any other purpose.

The Cost Estimate is a preliminary estimate only. Actual prices, costs and other variables may be different to those used to prepare the Cost Estimate and may change. Unless as otherwise specified in this report, no detailed quotation has been obtained for actions identified in this report. GHD does not represent, warrant or guarantee that the project can or will be undertaken at a cost which is the same or less than the Cost Estimate.

Where estimates of potential costs are provided with an indicated level of confidence, notwithstanding the conservatism of the level of confidence selected as the planning level, there remains a chance that the cost will be greater than the planning estimate, and any funding would not be adequate. The confidence level considered to be most appropriate for planning purposes will vary depending on the conservatism of the user and the nature of the project. The user should therefore select appropriate confidence levels to suit their particular risk profile.

2. Functional Requirements

2.1 Functional Objective

The Functional Objectives described in the Concept Design Options Report remain valid and have been refined to the following facility goals:

- Provide Learn-to-Swim facilities
- Provide facilities suitable for training and hosting events by a local swim club
- Attract community and tourism use
- Complement Council’s existing aquatic facilities
- Not restrict future site development

The following key elements have been proposed to achieve the described goals:

- 8 lane, heated 50 m pool with a relocatable bulkhead for multi-use scenarios
- Twin waterslides
- Amenities, kiosk, seating-mound, and plant
- Carparking to support swim-carnival use
- Green space recreation area

2.2 Functional Requirements

Table 1 summarises the functional requirements of the facility and its elements, developed based on the above objectives, previous studies, community consultation undertaken by Council, and workshops with Council stakeholders.

The basis of requirements column highlights the source of the requirements, generally being FINA compliance, Industry Standard, Council request, or GHD’s experience with similar regional facilities. The requirements form the basis of the optioneering stage and will be further refined for the preferred option.

Table 1 Functional Requirements

Item	Requirement	Basis of Requirement
50m Pool		
Basis for inclusion	To facilitate: competitive swim training and events, including school carnivals and club events usage for fitness, rehabilitation, leisure, and cross-training educational and other providers of learn-to-swim training and rehabilitation and hydro-therapy activities	
Compliance	– FINA compliant for local / regional standard	GRC
Key dimensions	– 50 m (excluding bulkhead) x 20.4 m clear internal dimension (excluding ramp) (approx. 23.7 m wide including ramp)	FINA compliant
Depth	– 1.35 m – 2 m	FINA compliant
Lanes	– 8 lanes at 2.50 m per lane + 0.2 m to first and last lanes	FINA compliant
Walls / floor treatment	– Tiled finish	Industry standard
Heating	– Heated	GRC
Pool entry	– Accessible ramp – Stairs – Ladder – Swim club marquee area	Royal Life Saving Society
Shading	– Shade structure over and approximately half of the pool	GRC

Item	Requirement	Basis of Requirement
Accessories	<ul style="list-style-type: none"> – Bulkhead – Pace clock – Starting blocks/platforms at both ends – Timing touch pads 	GRC FINA compliant FINA compliant FINA compliant
Seating	– Adjacent tiered seating (refer to grandstand)	Regional experience
Lighting	– Lighting towers for competition and evening events	FINA compliant / GRC
Store	– Storeroom	GHD experience
Marshall / Timekeeper	<ul style="list-style-type: none"> – Increase concourse depth to facilitate this activity – Both ends 	FINA compliant GHD experience
Waterslide		
Basis for inclusion	Recreational usage, leisure activities, and tourist attraction.	
Type	– Polin Brand – Mantis waterslide or equivalent (2 x tubular slides)	GHD experience / budget
D x W x H	– 16 m X 17.5 m X 6.5 m	
Waterslide exit	– Pool	
Capacity	– 180 x 4 riders per hour	
Plant Equipment		
50 m pool filters / plant	<ul style="list-style-type: none"> – 15 m x 10 m – 150 m² – Backwash tanks, sand filters, recirculation pumps, no chemicals 	GHD experience
Water slides	<ul style="list-style-type: none"> – 15 m x 10 m – 150 m² – Backwash tanks, sand filters, water slide flow pump (100+ L/s) 	GHD experience
Chemical store - chlorine	<ul style="list-style-type: none"> – 5 m x 6 m – 30 m² – 10kL sodium hypochlorite tank 	GHD experience Chlorine and CO ₂ / acid are required to be stored in separate rooms.
Chemical store – CO ₂ / acid	<ul style="list-style-type: none"> – 4 m x 3 m – 12 m² – 4x 180 kg BOC Gasmatic Drums 	
Outdoor heat pump plant area	3.6 x 6 m – 22 m ² - 50 m pool	GHD experience
Building Services	– HVAC and plant for enclosed pool area, administration, amenities	GHD experience
<i>Note</i>	<i>Council has requested consideration of perlite/diatomaceous filtration for consistency with the Gladstone Aquatic Centre. This option, including cost, operations complexity, and reduced footprint, will be further considered for the preferred option.</i>	
Other Program		
Basis for inclusion	Facility functionality requirements, including recreational/leisure, activity oversight, sun-protection, and general attractiveness.	
Recreational green space	– Undeveloped recreational greenspace	GRC
Bench seating	– Scattered throughout site to provide adequate seating and visual access at each area	GHD experience
Shading	– 1 shaded area = 100 m ²	GHD experience
Grandstand		
Basis for inclusion	To facilitate competitive events, including school and club competition.	
Accommodates	<ul style="list-style-type: none"> – Approximately 550 people, unallocated. Approximate accommodation based on nearby schools: <ul style="list-style-type: none"> • Tannum Sands State School – 831 • Tannum Sands State High School – 1,167 	GHD experience

Item	Requirement	Basis of Requirement
Type	<ul style="list-style-type: none"> - Grassed mound or grassed tiers - Fully shaded 	Industry standard
Amenities		
Change rooms	<ul style="list-style-type: none"> - 60 m² - 6 showers each change room - 20 linear m bench seating - 60 lockers total 	GHD experience
Female toilets	<ul style="list-style-type: none"> - 25 m² - 6 pans, 4 basins 	Planning requirements
Male toilets	<ul style="list-style-type: none"> - 25 m² - 3 pans, 4 urinals, 4 basins 	Planning requirements
Family change	<ul style="list-style-type: none"> - 4 m² - Baby change facilities - 2 x family change 	GHD experience
Changing places	<ul style="list-style-type: none"> - 16 m² 	Planning requirements
Cleaner's store	<ul style="list-style-type: none"> - 4 m² 	GHD experience
Administration		
Club room	<ul style="list-style-type: none"> - 80 m² 	GHD experience
Staff room	<ul style="list-style-type: none"> - 25 m² - Kitchenette - Tables & Chairs - 10 Lockers 	GHD experience
Kiosk	<ul style="list-style-type: none"> - 40 m² - Ancillaries to include: Fridge, Fryer, Grill, Bain Marie, Pie cooker, Coffee machine, Microwave, Cool room, Dry store, drinking fountains - Serves outside 	GHD experience
Manager's office	<ul style="list-style-type: none"> - 8 m² 	GHD experience
Reception	<ul style="list-style-type: none"> - 25 m² - Entry desk - Merchandise/retail 	GHD experience
Store	<ul style="list-style-type: none"> - 40 m² 	GHD experience
First aid room	<ul style="list-style-type: none"> - 12 m² 	Royal Life Savings Society
Carparking		
Number	<ul style="list-style-type: none"> - 100 car parks, 4 PWD parks 	Local statutory planning requirements
Emergency vehicle	<ul style="list-style-type: none"> - 1 space for ambulance / police vehicle 	GHD experience
Loading bay	<ul style="list-style-type: none"> - 1 space 	GHD experience
Bike	<ul style="list-style-type: none"> - 20 secure bike parking 	GHD experience
Bus set down		GRC

3. Site Selection

The site selection recommendation described in the Concept Design Options Report remains valid and has been adopted for this option.

4. Concept Arrangement Options

4.1 Layout Objectives

The Concept Arrangement Layout Objectives described in the Concept Design Options Report remain valid, being

- Site integration
- Functionality
- Access
- Spatial efficiency
- Aesthetics
- Safety & comfort
- Constructability
- ESD performance
- Staging & future proofing

The functional and technical requirements and layout objectives have been applied to develop a general arrangement concept option.

The following section describes the developed Concept Design Option 4 with a design description, plans, and explanation of the option's execution of the above requirements.

Staged construction is not proposed.

General arrangement and visualisations for the option are provided in Appendix A.

4.2 Concept Option 4

Concept Option 4 integrates the facility functionality in a multi-use 50 m pool with the following characteristics responding to the requirements:

- 8 lane pool in accordance with FINA requirements for regional competitions
- Heated to provide all-season programming
- All-abilities accessibility via ramp access
- Moveable bulkhead to divide the pool and facilitate concurrent programming (e.g. bulkhead placed to provide 25 m laned pool and 25 m learn-to-swim area)
- Shading to half of the pool

The site arrangement consists of a terraced carpark following the natural surface profile and placed orthogonally to the road to reduce visual impact and earthworks. The facility entrance is located centrally separating the plant and amenities buildings, oriented to provide a subtle site enclosure and focal point. The building spine locates the plant and chemical functions furthest from the site entry and neighbouring properties to maximise the separation between users and operations while facilitating easy access for operations and events.

Within the facility, the entrance node also consists of a kiosk and amenities adjoining the primary circulation axis. The amenities, kiosk, and seating area are located to provide efficient staffing and proximity to the shaded end of the 50m pool, waterslide, and green space. Twin waterslides are located at the northern end of the site, adjoining the green recreation space and kiosk area and forming a recreation zone. The southern end of the site is

dedicated to the 50m pool and spectator mounding, with the southernmost end of the facility arranged to allow access and space for marquees and other event activities.

Figure 1 is an excerpt of the general arrangement plan provided in Appendix A.

Table 2 describes how the concept option responds to the design objectives.

Figure 2 to Figure 5 provides concept renders describing the design. Renderings are provided in Appendix A.



Figure 1 General Arrangement Plan

Table 2 Option 4 Requirements Execution

Objectives	Design Response
Site integration	<ul style="list-style-type: none"> – Carparking is oriented in a north south direction, along the natural topography, forming two parking terraces, with a logical circular flow of cars, buses, and servicing vehicles, while minimising conflict with pedestrian activity. – Maximize bushland location by bringing vegetation into the site and protruding outwards from site towards bushland and outlook, rather than forming distinct barrier.
Functionality	<ul style="list-style-type: none"> – The main entry point is located centrally in proximity to administration functions, changing / toilets and kiosk. – Two distinct building function groupings – pool plant functions and visitor service functions. The entry and administration functions in the centre. – The northern end of the site provides a recreational hub consisting of the waterslides, greenspace, and shaded end of the 50 m pool, with centrally located kiosk, amenities, and seating for supervision. The southern end is focussed on the 50 m pool, marshalling space, club room, and spectator mound. – Lighting to be provided to light facility and oriented to reduce impact on adjacent properties.
Access	<ul style="list-style-type: none"> – The axial nature of the layout ensures clear paths to and from the main entry at the centre. All functions are accessed along clear axis lines.

Objectives	Design Response
	<ul style="list-style-type: none"> – The north-south axis is cranked to follow the natural topography. This crank occurs at the primary east-west axis, strengthening the legibility of the entry / exit and associated central functions. – Chemical storage and delivery is placed at far end from site entry to avoid conflict with pedestrian site entry, including active transport links. Separate bump out exit / entry, close to bus drop off and 50m pool and spectator mound.
Spatial efficiency	<ul style="list-style-type: none"> – Ensuring spatial layouts are accessible, legible, and easily navigable. – Building functions are grouped into two distinct halves, but linear in nature for future expansion if required.
Aesthetics	<ul style="list-style-type: none"> – North-south cranked axis reduces the perceived length of the overall facility (car park, buildings and pools enclosure) and forms a subtle enclosure. – Focal points at axis termination. – Exploration and movement of and between diverse, integrated mix of passive and active spaces, uses, and social interactions. – Integrating landscape design and service elements with the building design to create welcoming and interesting places. – Achieving a purposeful composition of materials and elements including colours, textures, finishes, light, and detailing.
Safety & comfort	<ul style="list-style-type: none"> – The northern recreational activity hub includes a mixture of active and passive experiences. The area is enclosed by a turfed embankment, also serving as an amphitheatre. The hub is semicircular to ensure containment and safety, solar access throughout the day, 180-degree outlooks to the north and a focal point to and from the rest of the facility. – Separation of greenspace recreation zone from road noise and provides immersive experience adjacent to undeveloped bush-land. – Buildings form a distinct edge between inside and outside of facility – increased security and surveillance – separation of carparking to enclosure – Providing an appropriate range of climatic experiences – shelter, enclosure, openness, solar access, and shade – Observation tower located on both main axes to ensure view of whole facility
Constructability	<ul style="list-style-type: none"> – Linear building form allows for potential expandability single roof structure following site topography to reduce civil works. – Built elements and surfaces that are resilient and durable while reflecting quality and permanence, ensuring visual and functional quality over time.
ESD performance	<ul style="list-style-type: none"> – Water sensitive urban design with raingardens integrated into carparks. – Provisions for solar-power on rooftops. – Responding to local climate conditions, and using efficient, passive approaches and systems to provide shade and shelter. Buildings external face to the west and active interaction with the buildings to the east
Staging & future proofing	<ul style="list-style-type: none"> – The layout provides for future facility expansion north and provides clear space for future developments including splash-pads, dry playgrounds, or pools. – The element functions are very specific except for the clubrooms, which offer a degree of flexibility. – The spectator mound can be upgraded to a grandstand in future.



Figure 2 **Site Arrangement**



Figure 3 **Perspective from Northern Site Boundary**



Figure 4 *Perspective from the Kiosk, Viewing Green Space, Waterslide, Seating Area, and Shaded 50 m Pool*



Figure 5 *Perspective from the Southern End of the Site, Viewing the 50 m Pool, With Bulkhead Located at the Mid-Point, and Spectator Mound*

5. Cost Estimates

High level construction and lifecycle cost estimates have been prepared for Option 4 for the purposes of options comparisons. Summary costs are provided in Table 3 below. Detailed breakdowns are provided in Appendix B and Appendix C.

Table 3 Cost Estimates

Option	Construction Cost (2022)	Lifecycle Cost	
		Present Value	Future Value (2062)
Option 4	\$21,084,000	\$70,818,088	\$109,737,947

This cost estimate includes a line item reflecting escalation within the construction industry since estimates for previous options were prepared.

Whole of life costs include construction cost estimates and have been developed over a 40 year period with assumed contingencies, on-costs, and annual inflation detailed in the appendices.

The following items are excluded from the cost estimates:

- GST
- Consultant's fees and disbursements, land and legal costs, and Council's project costs
- Headworks charges and statutory fees and charges
- Major upgrades, alterations, or relocations of existing services
- Rent and lease costs
- Income
- Maintenance to external site infrastructure (e.g. Coronation Drive, sewerage)

6. Site Infrastructure

The Site Infrastructure reviews described in the Concept Design Options Report remain valid.

Site infrastructure reference designs will be developed in the next phase of the project to suit the preferred concept design option, including preliminary sizing, alignments, and requirements.

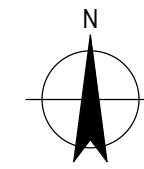
7. Approvals Review

The Approvals Review described in the Concept Design Options Report remains valid. The approvals matrix is provided in Appendix D.

Appendices

Appendix A

Concept Design Option Drawings



GRC / BTARC

SK11

OPTION 4 GENERAL ARRANGEMENT PLAN

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SK100

3D View - Plan

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Card File No: BIM 360://12537620 - Boyne Tannum Aquatic Centre/12537620 - Boyne Tannum_SITE.rvt

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SK101

3D View - Birdseye looking north

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SK102

3D View - Birdseye looking east

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3D View - Vehicular entry from Corronation Drive

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3D View - Main entry from car parking area

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SK105

3D View - Main entry point and administration

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3D View - Entry to 50m pool and waterslide enclosure adjacent to kiosk

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SK107

3D View - 50m pool and waterslide and central shade structure from kiosk

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3D View - Central shade structure toward 50m pool, kiosk and entry

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3D View - 50m pool and central shade structure toward 50m pool, kiosk, entry and changing rooms

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3D View - 50m pool looking north toward waterslide and covered spectator area

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3D View - 50m pool with bulkhead in place

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Appendix B

Capital Cost Estimate

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**DONALD
CANT
WATTS
CORKE**

15th February 2022

GHD Pty Ltd
Level 2, 100 Goondoon Street
Gladstone QLD 4680

Attention: Mr Andrew Chiknaikin

Dear Andrew,

Boyne Tannum Aquatic Centre
High Level Cost Estimates – Options 4 & 4A

As requested, we have prepared High Level Cost Estimates for the above project Options 4 & 4A based on the information provided by yourselves.

We report our High Level Cost Estimates as follows:

Option 4 (50m pool)	\$21,084,000 (excl GST)
Option 4A 25m pool	\$14,487,000 (excl GST)

We have attached a copy of our High Level Cost Estimate Summaries and a Detailed Break-ups for your information.

The following are specifically excluded from the above estimates:

- GST
- Economic and/or other impacts of Covid-19 virus
- Escalation from today's date
- Consultant's fees & disbursements
- Land and legal costs



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- Client Costs
- Local Authority headworks charges
- Statutory fees and charges including Portable Long Service
- Major upgrades and/or alterations to existing services
- Relocation of major existing services
- Any unidentified asbestos or other hazardous materials removal
- Piling to pools
- Wading pool
- Water park and splashpad
- Observation tower
- Viewing platform
- Announcer box
- Media box
- Officials box
- Heating to 25m pool (Option 4A)
- Pool blanket to 25m pool (Option 4A)
- Shade sails or other shading to 25m pool (Option 4A)
- Touch pads to 25m pool (Option 4A)
- Timing system to 25m pool (Option 4A)
- Club room (Option 4A)
- Heat pump plantroom (Option 4A)
- Waterslides (Option 4A)

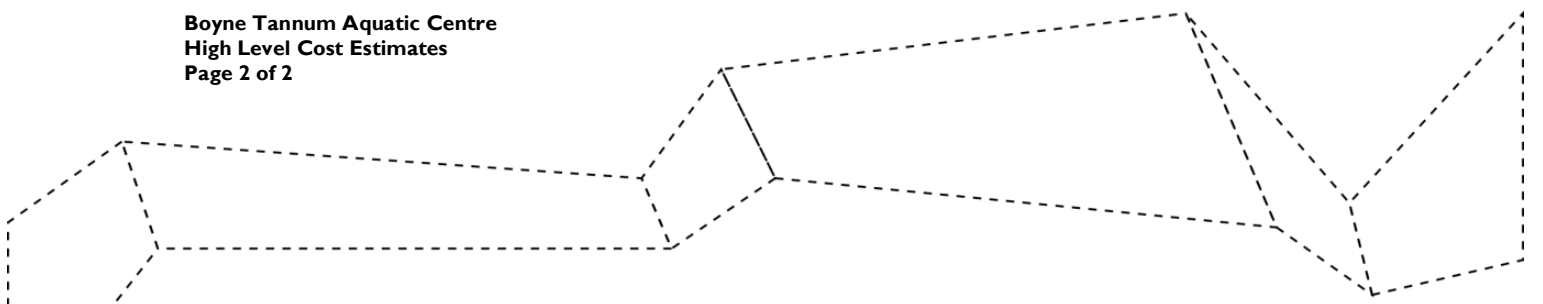
We trust the foregoing is satisfactory. Please do not hesitate to contact us should you require any further assistance.

Yours faithfully

Donald Cant Watts Corke (Qld) Pty Ltd



Jim McKiddie
Associate Director Queensland



Elemental Summary

Project: Q20165 Boyne Tannum Aquatic Centre	Details: High Level Cost Estimate 15/02/22
Building: Option 4	

Code	Description	Quantity	Unit	Rate	Subtotal	Factor	Total
	OPTION 4				21,084,000		21,084,000
	EXCLUSIONS				0		0
GFA: 0.00 m2							21,084,000

Trade Detail

Project: Q20165 Boyne Tannum Aquatic Centre	Details: High Level Cost Estimate 15/02/22
Building: Option 4	

Code	Description	Quantity	Unit	Rate	Subtotal	Factor	Total
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OPTION 4

	OPTION 4						
	50m Pool (x 20m wide)						
	<u>Pool</u>						
	Excavate for pool	1	Item	200,610.00	200,610		200,610
	Pool shell including finishes	1	Item	1,412,640.00	1,412,640		1,412,640
	Pool piling	1	Item		Excl		0
	Pool plant	1	Item	1,379,780.00	1,379,780		1,379,780
	Pool heating	1	Item	250,000.00	250,000		250,000
	Filtered water	1	Item	75,000.00	75,000		75,000
	Balance tank	1	Item	201,960.00	201,960		201,960
	Backwash holding tank	1	Item	130,680.00	130,680		130,680
	Fill pool and chemicals	3,500,000	Lt	0.09	315,000		315,000
	<u>Equipment</u>						
	Lane rope anchor	16	No	205.00	3,280		3,280
	Lane ropes	7	No	1,600.00	11,200		11,200
	Lane line storage reel	2	No	2,020.00	4,040		4,040
	Back stroke marker and false flag socket	8	No	200.00	1,600		1,600
	Back stroke post	4	No	130.00	520		520
	False start post	4	No	200.00	800		800
	Starting blocks	16	No	2,850.00	45,600		45,600
	Touch pads	16	No	1,500.00	24,000		24,000
	Timing system	1	Item	175,000.00	175,000		175,000
	Starting block cover	16	No	200.00	3,200		3,200
	<u>Pool cover</u>						
	Pool blanket and roller	1	No	70,000.00	70,000		70,000
	<u>Safety equipment</u>						
	Rescue tubes	2	No	200.00	400		400
	Spinal board with straps	1	No	1,500.00	1,500		1,500
	Oxygen equipment and defibrillator	1	No	10,000.00	10,000		10,000
	50m Pool Shade Sails						
	Footings and structure	179	m2	350.00	62,650		62,650
	Shade sails	179	m2	400.00	71,600		71,600
	Waterslide						
	<u>Waterslide</u>						

Trade Detail

Project: Q20165 Boyne Tannum Aquatic Centre	Details: High Level Cost Estimate 15/02/22
Building: Option 4	

Code	Description	Quantity	Unit	Rate	Subtotal	Factor	Total
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**OPTION 4
(Continued)**

	Slide structure and tubes	1	No	1,300,000.00	1,300,000		1,300,000
	Pool to base of slides	1	No		Incl		0
	Plant and equipment	1	No		Incl		0
	Plant and Amenities Buildings						
	Plant buildings	460	m2	1,600.00	736,000		736,000
	Chemical store	77	m2	1,600.00	123,200		123,200
	Amenities buildings	171	m2	3,400.00	581,400		581,400
	Administration (staff, manager, reception, etc)	84	m2	3,000.00	252,000		252,000
	Commercial (kiosk)	51	m2	3,000.00	153,000		153,000
	Commercial (club room)	104	m2	3,000.00	312,000		312,000
	Stores	169	m2	1,850.00	312,650		312,650
	Unenclosed covered areas	643	m2	450.00	289,350		289,350
	High level roof over entry	94	m2	750.00	70,500		70,500
	Feature entry	1	Item	50,000.00	50,000		50,000
	Roof to Kiosk Seating Area						
	Roof to Kiosk Seating Area	407	m2	650.00	264,550		264,550
	Sundry Structures						
	Observation tower	1	No	20,000.00	Excl		0
	Viewing platform	1	No	15,000.00	Excl		0
	Shaded turf Seating Embankment						
	Block retaining wall - assumed 2m high	49	m	890.00	43,610		43,610
	Tanking to retaining wall and store walls	92	m2	85.00	7,820		7,820
	Subsoil drainage	66	m	85.00	5,610		5,610
	Balustrade to top of retaining wall	49	m	950.00	46,550		46,550
	Fill to embankment - ave 800	319	m3	85.00	27,115		27,115
	Turf to embankment	438	m2	25.00	10,950		10,950
	Substructure and supports to roof	460	m2	400.00	184,000		184,000
	Roof - single cantilever	460	m2	500.00	230,000		230,000
	Electrics	460	m2	100.00	46,000		46,000
	Announcer box	1	No	2,500.00	Excl		0
	Media box	1	No	5,000.00	Excl		0
	Officials box	1	No	5,000.00	Excl		0
	Covered Seating Area						
	Turf - included in Landscaping below		Note				
	Footings and structure	179	m2	340.00	60,860		60,860

Trade Detail

Project: Q20165 Boyne Tannum Aquatic Centre	Details: High Level Cost Estimate 15/02/22
Building: Option 4	

Code	Description	Quantity	Unit	Rate	Subtotal	Factor	Total
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**OPTION 4
(Continued)**

	Shade sails	179	m2	310.00	55,490		55,490
	Paving						
	Concourse paving	3,034	m2	260.00	788,840		788,840
	Pathways	640	m2	120.00	76,800		76,800
	External Furniture						
	Bench seats (kiosk seating)	8	No	2,500.00	20,000		20,000
	Seats to covered seating area	1	Item	20,000.00	20,000		20,000
	Kiosk outdoor furniture	1	Item	20,000.00	20,000		20,000
	Site Preparation						
	Environmental controls	16,062	m2	5.00	80,310		80,310
	Tree removal	16,062	m2	10.00	160,620		160,620
	Site preparation	16,062	m2	7.50	120,465		120,465
	Bulk earthworks	16,062	m2	57.14	917,829		917,829
	Retaining walls	16,062	m2	27.14	435,969		435,969
	Site Services						
	<u>Hydraulic</u>						
	Site stormwater	2,784	m2	134.49	374,410		374,410
	Site sewer	2,784	m2	37.84	105,341		105,341
	Site water mains	2,784	m2	37.84	105,341		105,341
	<u>Electrics</u>						
	Switch boards	1	Item	250,000.00	250,000		250,000
	External lighting, mains, comms, security, PA	3,423	m2	426.47	1,459,809		1,459,809
	Carpark						
	Earthworks	3,776	m2	68.39	258,254		258,254
	Retaining walls	3,776	m2	27.14	102,491		102,491
	Carpark pavement	3,776	m2	87.31	329,676		329,676
	Chemical binding	1	Item	5,000.00	5,000		5,000
	Pathway	42	m2	120.00	5,040		5,040
	Steps between carpark levels	1	Item	10,000.00	10,000		10,000
	Kerbs	767	m	80.00	61,360		61,360
	Signage and linemarking	3,776	m2	5.77	21,789		21,789
	Stormwater	3,776	m2	16.49	62,273		62,273
	Electrics including lighting	3,776	m2	56.62	213,808		213,808
	Works to Coronation Drive						
	Demolish existing kerbs	82	m	30.00	2,460		2,460
	Crossover slab - new entry to carpark	79	m2	150.00	11,850		11,850

Trade Detail

Project: Q20165 Boyne Tannum Aquatic Centre	Details: High Level Cost Estimate 15/02/22
Building: Option 4	

Code	Description	Quantity	Unit	Rate	Subtotal	Factor	Total
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**OPTION 4
(Continued)**

	Pavement to bus set-down area	240	m2	120.00	28,800		28,800
	Kerbs	76	m	80.00	6,080		6,080
	Invert	60	m	80.00	4,800		4,800
	New concrete footpath	762	m2	120.00	91,440		91,440
	Raised pedestrian crossing over existing road	1	Item	10,000.00	10,000		10,000
	Bus stop shelter including finishes, structures and footings	2	No	15,000.00	30,000		30,000
	Street lights	10	No	7,500.00	75,000		75,000
	Electrical reticulation	1	Item	30,000.00	30,000		30,000
	Landscaping	635	m	35.00	22,225		22,225
	Fencing						
	1800 High screen fencing	394	m	200.00	78,800		78,800
	Pedestrian gates	2	No	1,200.00	2,400		2,400
	Emergency vehicle gates	1	No	3,000.00	3,000		3,000
	Turn-stiles to entry	1	Item	20,000.00	20,000		20,000
	Landscaping						
	Form mounded area	454	m2	180.00	81,720		81,720
	Turfed areas	3,863	m2	18.00	69,534		69,534
	Garden beds	430	m2	120.00	51,600		51,600
	Trees - large	66	No	450.00	29,700		29,700
	Trees - medium	30	No	350.00	10,500		10,500
	Irrigation to turfed areas	3,863	m2	12.00	46,356		46,356
	Irrigation to garden beds	430	m2	20.00	8,600		8,600
	On-Costs						
	Preliminaries	1	Item		1,306,720		1,306,720
	Builders Margin	1	Item		1,058,443		1,058,443
	Contingency	1	Item		1,869,917		1,869,917
	Escalation - June 21 to Feb 22	1	Item		514,227		514,227
	Rpinding	1	Item		688		688

21,084,000

Trade Detail

Project: Q20165 Boyne Tannum Aquatic Centre	Details: High Level Cost Estimate 15/02/22
Building: Option 4	

Code	Description	Quantity	Unit	Rate	Subtotal	Factor	Total
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EXCLUSIONS

Code	Description	Quantity	Unit	Rate	Subtotal	Factor	Total
	EXCLUSIONS						
	<u>This Estimate specifically excludes:</u>						
	GST		Note				
	Economic and/or other impacts of Covid-19 virus		Note				
	Escalation from today's date		Note				
	Consultant's fees & disbursements		Note				
	Land and legal costs		Note				
	Client Costs		Note				
	Local Authority headworks charges		Note				
	Statutory fees and charges including Portable Long Service		Note				
	Major upgrades and/or alterations to existing services		Note				
	Relocation of major existing services		Note				
	Any unidentified asbestos or other hazardous materials removal		Note				
	Piling to pools		Note				
	Wading pool		Note				
	Water park and splashpad		Note				
	Observation tower		Note				
	Viewing platform		Note				
	Announcer box		Note				
	Media box		Note				
	Officials box		Note				

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Appendix C

Whole of Life Cost Estimate

Brisbane
Level 11
360 Adelaide Street
Brisbane QLD 4000

T: +61 7 3049 7000
F: +61 7 3049 7070

E: dcwcqld@dcwc.com.au
W: www.dwc.com.au

REF: Q20165 Boyne Tannum Aquatic Centre High
Level LCC 220215

Townsville
Level 1
33-35 Palmer Street
South Townsville QLD 4180

T: +61 7 4724 1040
F: +61 7 3049 7070

**DONALD
CANT
WATTS
CORKE**

15th February 2022

GHD Pty Ltd
Level 2, 100 Goondoon Street
Gladstone QLD 4680

Attention: Mr Andrew Chiknaikin

Dear Andrew,

Boyne Tannum Aquatic Centre
Life Cycle Cost Reports

As requested, we have prepared and attached a copy of our Life Cycle Cost Reports for the above project Options 4 & 4A based on the information provided by yourselves.

The following are specifically excluded from the above estimate:

- GST
- Land and legal costs
- Rent and lease costs
- Income
- Economic and/or other impacts of Covid-19 virus
- Maintenance on Coronation Drive (by Council)



**partners for
excellence**

DONALD CANT WATTS CORKE (QLD) PTY LTD
ABN 12 091 531 823

DIRECTORS
GLENN CORKE
BILL DOUGLAS
ALASDAIR MACMILLAN
ADAM FRANCEY

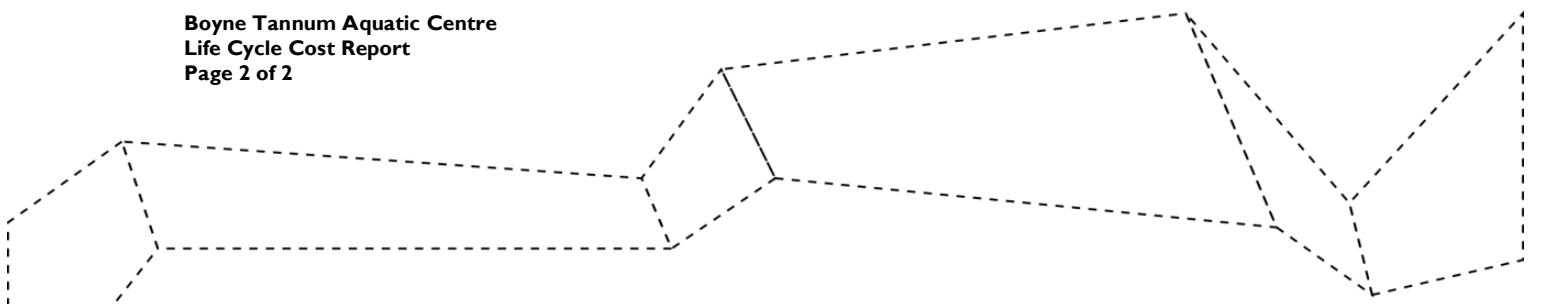
ADELAIDE
BRISBANE
CANBERRA
DARWIN
MELBOURNE
PERTH
SYDNEY
TOWNSVILLE

We trust the foregoing is satisfactory. Please do not hesitate to contact us should you require any further assistance.

Yours faithfully
Donald Cant Watts Corke (Qld) Pty Ltd



Jim McKiddie
Associate Director Queensland



Appendix D

Approvals Register

Legislation	Agency	Activity Trigger	Applicability	Applicability Description	Licence/Permit/ Approval Required	Pre-lodgement Advice	Process and Supporting Information	Timeline	Fees	Being Managed By	Lodgement Date	Additional Notes for Consideration	Complete
<i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>	Department of Environment and Energy	Actions that have or are likely to have a significant impact on a matter of national environmental significance (MNES) require approval from DoE. MNES includes listed threatened species and ecological communities.	Not Applicable	Due to the relatively small project site and no relevant essential habitat mapping, this is deemed not required. The proposed works are not expected to have a significant impact on a MNES.	None	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Planning Act Approvals													
<i>Planning Act 2016 Planning Regulation 2017</i>	DSDIGP	Operational works	To Be Confirmed	Operational works are triggered for works that are not accepted developed as defined in Schedule 10 of the Planning Regulation.	TBA	Confirmation from SARA to be obtained during prelodgement discussions.	TBA	3-5 months	TBA				
		Operational works - infrastructure related referrals	To Be Confirmed	The project site is situated adjacent to a road that intersects with a State-controlled road. Mapping is inconclusive to determine if the site is within 100m of the intersection.	TBA	Confirmation from SARA to be obtained during prelodgement discussions.	TBA	3-5 months	TBA				
		Operational works - infrastructure related referrals	To Be Confirmed	Major sport or recreational facility equal to or greater than 5,000m ² total site area.	TBA	Confirmation from SARA to be obtained during prelodgement discussions.	TBA	3-5 months	TBA				
		Operational works (Planning Scheme)	Not Applicable	The Planning Regulation 2017 identifies that operational work by or for a public sector entity is development that the "local categorising is prohibited from stating is assessable development".	TBA	Confirmation from GRC to be obtained							
		Material change of use	Applicable	Defined as outdoor sport and recreation and requires code assessment. GRC will be the assessment manager and SARA will be referral agency.	Permit required	Prelodgement with GRC to be undertaken to confirm application requirements.	Planning report, DA Form, Final design drawings	3-5 months	TBA				
<i>Coastal Protection and Management Act 1995</i>	DES	Development on land under tidal water (below MHWS / HWM). If within a CMD:	Not Applicable	Tidal works confirmed as not required. Not required as land affected is not tidal.	None	n/a	n/a	n/a	n/a	n/a			
		i. interfering with quarry material on State Land above HWM ii. Disposing of dredge spoil or other solid waste in tidal water iii. removing or interfering with coastal dunes in an erosion prone area	Not Applicable	Not required as not mapped within CMD.	None	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<i>Fisheries Act 1994</i>	DAF	Permanent works within waterways are the construction or raising of a waterway barrier.	Not Applicable	No works within a waterway. Amber waterway is located on the land parcel however will not be impacted.	None	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		Works that involve damage or disturbance to marine plants	Not Applicable	No marine plant disturbance.	None	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<i>Vegetation Management Act 1999 (VM Act)</i>	DNRME	Clearing of native vegetation assessable under the VM Act.	To Be Confirmed	Exemption applies if a lot to which the application relates is less than 5ha, for which a local government is the assessment manager.	TBA	Confirmation from SARA to be obtained during prelodgement discussions.	TBA	3-5 months	TBA				



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→ **The Power of Commitment**