NEGAWATT PROJECTS

Phillip Island(MILLOWL) AQUATIC AND RECREATION CENTRE M.A.R.C.

The solution for an aquatic centre on Phillip Island









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Statement of Acknowledgement…

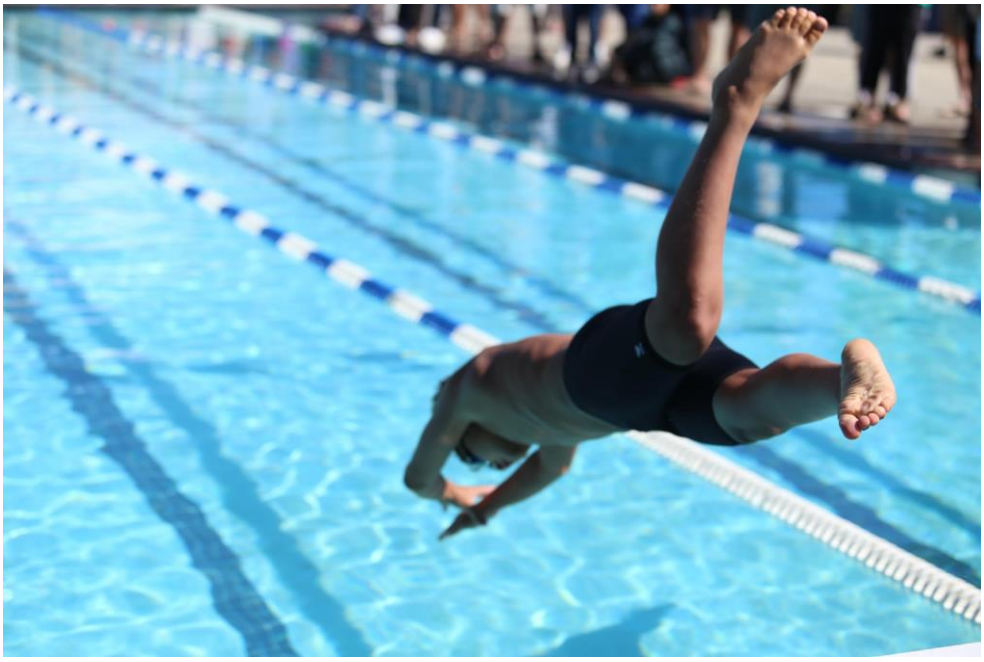
Negawatt Projects acknowledges Aboriginal and Torres Strait Islander people as the first Australians and recognises that they have a unique relationship with the land and water.

We also recognise that we are situated on the lands of traditional owners, members of the Kulin Nation who have lived here for thousands of years.

We offer our respect to their Elders past and present and through them, all Aboriginal and Torres Strait Islander people.

Contents

'There is an opportunity on Phillip Island that presents itself rarely, if ever. This opportunity should be grasped with both hands'



The Bass Coast Shire Council is faced with a problem in delivering sufficient aquatic facilities to it's far-reaching community. There is currently one public aquatic centre in the Shire located in Wonthaggi, which is outside of the 20 -minute catchment area for most of the residents of Phillip Island.

Negawatt Projects have been working closely with the Phillip Island Aquatic Centre Fund Inc (PIACF) to present the unique opportunity of a world class sports training centre featuring aquatic facilities on breathtaking Phillip Island; 'The Natural Attraction'. The proposed centre aims to enhance the mature tourism market on the island, provide more opportunities for the local community to enjoy an active lifestyle and leverage the large amount of groups who want to visit, exercise and stay on the island from Victoria, other States and overseas.

2. Background

The Phillip Island Aquatic Centre Fund Inc was established 22 years ago. It has been advocating for the construction of an aquatic centre on Phillip Island ever since. In 2014, a community survey (Cowes Future Recreation Land Master Plan) established that swimming is the second most wanted activity in the Shire's community and that the current access to aquatic facilities is the most unsatisfactory opportunity among the activities available. This clearly highlights that the community's desire to participate in aquatic activities is limited by their availability in the local government area.

2.1 Site Description

The proposed site is on the Cowes Future Recreation Land on the corner of Phillip Island Road and Ventnor Road. This 80 acre plot of land is a Farming Zone and will need to be rezoned into Public Park and Recreation so that applicable building codes can apply. Ventnor road is one of the largest roads on the island, stretching from Cowes to Summerlands on The Island's southwest, also connecting to Phillip Island Road which provides access to the mainland.

The site is centrally located on Phillip Island, ensuring easy access from anywhere on the Island. Its location on the outskirts of the Cowes Township provides easy access to other facilities. **The site is perfectly situated to promote the natural beauty of the Island with the proposed Recreational Precinct located adjacent to a large wildlife nature reserve.**

2.2 Existing Opportunities

The 10-year Bass Coast Aquatic Strategy outlined by the council in 2015 aims to construct an aquatic centre on Phillip Island that meets the needs of the island's residents and tourists. This proposal has the same objectives and aspires to further enrich the tourism market on Phillip Island as well as to enhance the opportunities present for all residents in the Shire. Additionally, this proposal aims to positively move to address the Climate Emergency declared in Bass Coast and provide a solution that minimises operational costs in a number of innovative ways.

The abundance of outdoor activities on Phillip Island will complement the proposed facilities and will integrate well with a sporting performance centre. Multiple bike tracks cover the island and offer access to the proposed site from most points on the island. These tracks also present an opportunity for the centre to host triathlon racing events on the island.

There are many sporting clubs currently based on Phillip Island for a variety of sports and catering to all age groups and skill levels. These clubs are currently *"bursting at the seams",* with most having to turn away potential club members due to the lack of training facilities on the island. Many of these clubs have shown their support for this proposal as they see an opportunity for growth in their organisation and to enhance the experience for their members.

Many years ago two shoe salesmen were sent to Africa. The salesman sent to the West coast reported back to head office; "situation hopeless; nobody here wears shoes". The second salesman sent to the East Coast. reported back; "unlimited potential; **nobody here wears shoes!**"

We need *a **new approach*** to the problem of how to build an aquatic centre on Phillip Island

What is the problem?

Low permanent population of only 17,000 Phillip Island residents

Existing sports clubs are beyond capacity

The closest aquatic centre to Cowes residents is a 40 minute drive

The Bass Coast council with a rate base of 36,000 people cannot afford to build 2 traditional aquatic centres

So… what is the solution?

There are around ***2.7 million*** visitors coming to Phillip Island each year

The Council has purchased an 80 hectare site in a prime position next to the bike path

The Football, Netball and Soccer clubs need more space

Existing group accommodation (1000 beds) is also at capacity

The swimming club needs a pool and a HOME

The new council site sits between a bike path, running tracks, spectacular road cycling circuits and a safe open water swimming area

The missing element is *Accommodation*

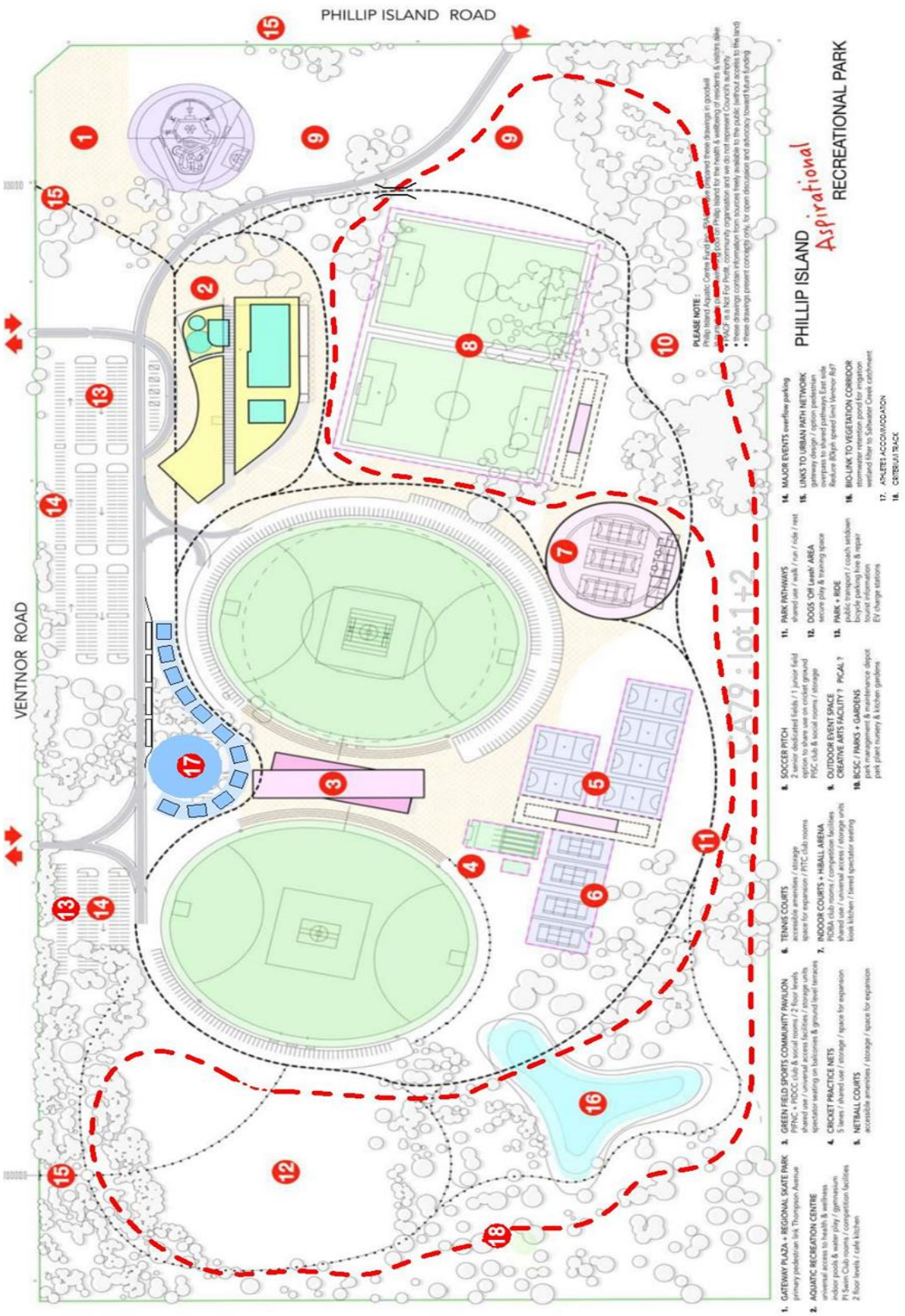
It's a *combination* of elements

Aquatic Centre

Sports Performance Centre

Onsite Accommodation

3. Site plan


PHILLIP ISLAND ROAD
VENTNOR ROAD
PHILLIP ISLAND Aspirational RECREATIONAL PARK
PLEASE NOTE :
• PIACF is a Not For Profit, community organisation and we do not represent Council's authority
• These drawings contain information from sources freely available to the public (without access to the land)
• These drawings present concepts only, for open discussion and advocacy toward future funding
1. GATEWAY PLAZA + REGIONAL SKATE PARK primary pedestrian link Thompson Avenue
2. AQUATIC RECREATION CENTRE universal access to health & wellness indoor pools & water play / gymnasium 25 Swim Club rooms / competition facilities 2 floor levels / cafe kitchen
3. GREEN FIELD SPORTS COMMUNITY PAVILION PIFNC + PIDCC club & social rooms / 2 floor levels shared use / universal access facilities / storage units spectator seating on balconies & ground level terraces
4. CRICKET PRACTICE NETS 5 lanes / shared use / storage / space for expansion
5. NETBALL COURTS accessible amenities / storage / space for expansion
6. TENNIS COURTS accessible amenities / storage space for expansion / PITC club rooms
7. INDOOR COURTS + HBALL ARENA PCRA club rooms / competition facilities shared use / universal access / storage units kiosk kitchen / tiered spectator seating
8. SOCCER PITCH 2 senior dedicated fields / 1 junior field option to share use on cricket ground PISC club & social rooms / storage
9. OUTDOOR EVENT SPACE CREATIVE ARTS FACILITY ? PICAL ?
10. BCSC / PARKS + GARDENS park management & maintenance depot park plant nursery & kitchen gardens
11. PARK PATHWAYS shared use / walk / run / ride / rest
12. DOGS OFF Leash AREA secure play & training space
13. PARK + RIDE public transport / coach setdown bicycle parking hire & repair tourist information EV charge stations
14. MAJOR EVENTS overflow parking
15. LINKS TO URBAN PATH NETWORK gateway design / option pedestrian overpass to shared pathways East side Reduce 80kph speed limit Ventnor Rd?
16. BIO-LINK TO VEGETATION CORRIDOR stormwater retention pond for irrigation wetland filter to Saltwater Creek catchment
17. ATHLETES ACCOMMODATION
18. CRITERIUM TRACK
247 : lot 1+2

3.1 What is Criterium Racing?

A cycling "criterium" track is **a self-contained road circuit for criterium races** and offers all cyclists a safe recreation and training venue dedicated entirely to their use, free from other vehicles. Whether you enjoy a social ride, harbour dreams to become a professional cyclist or ride competitively, the track will suit your level of skill or fitness.

Weekend cyclilsts, road cyclists, roller bladers and HPV drivers can use the track including even wheel-chair particiants. Criterium tracks are a great activity for groups who want a safe high aerobic activity and are wanting to measure performance. A criterium track next to an aquatic centre, with running tracks and open water swimming nearby is every triathlete's dream venue.

All cyclists must obey the following track rules when using a criterium track.

- Care should be taken when overtaking children or inexperienced cyclists
- Slower riders keep to the left
- Overtake on the right
- Ride in a clockwise direction only
- Organisers of a planned event may change this procedure at their discretion but must advise all users prior to their participation
- Avoid sudden braking or direction changes
- You must wear a helmet. It's the Law
- Lights must be used before sunrise and after sunset
- Ride within your limits and be considerate to all users
- Circuit use may be restricted for safety reasons at various times for special events
- People using this facility do so at their own risk.
- Warning: high speed users of this circuit regularly exceed speeds of 50kph.

You can see a criterium race here:

- https://youtu.be/i7-8Zt7wNSg

Building a sporting performance centre on Phillip Island instead of a typical aquatic centre comes at a higher capital cost but creates an opportunity for the centre to bring in additional streams of income. Aquatic centres, in general, cost a lot of money to build and do not run at a profit. This is due to the high capital cost associated with designing and installing large pools and required auxiliary aquatic systems, costing tens of millions of dollars even for a small aquatic centre with basic facilities. The largest cost in running an aquatic centre is wages, and securing large groups as clients for the site is a simple way of reducing the fixed cost of supervision. Large groups usually can provide their own staff with lifesaving qualifications.

General admissions for entry into aquatic centres on the other hand, are inexpensive and usually cost less than $10/person/visit. Admission prices for entry at the Typical Aquatic Centre in Victoria are shown in Table 1 below as an example.

Please note the public access to the pool will be ensured via contractual arrangements that limit usage of the facilities for 'Sports Visitors' and other groups e.g. limiting lane usage.

Table 1

Adult	Concession
On-Peak Hours	
$10.40	$8.80
Off-Peak Hours	
$8.10	$6.90

In addition to the high construction cost and low revenue, the maintenance and operating costs of these facilities are usually very high in Australia due to inefficient energy systems and centre design. As a result, this current model for standalone aquatic centres results in them rarely breaking even, let alone making a profit. That is why these centres are generally a local government service, as it does not make business sense to own a large aquatic centre, but they provide an essential recreation opportunity for the community. Councils also have to make it cost effective for the customers, which can be achieved by giving locals a discounted rate and a commercial rate for out-of-town visitors. This will also make the centre more attractive to the base rate population.

Increasing the number of services and facilities will enhance the centre's appeal to a larger proportion of the population. By definition it will attract more customers. Over the life of the facility, the additional income generated by these additional services will reduce the overall loss experienced by the centre and potentially even turn a profit if implemented considerately.

Some services can even be leased out to third party entities to operate while the centre receives a commission. This removes the expense associated with employing internal staff or resources to operate and maintain the service. Table 2 below outlines the services provided by a typical aquatic centre versus the proposed sporting centre, including which services are profitable and could potentially be leased to third parties.

Option 1: Aquatic Centre Only - 25m			Option 2: Complete Sports Centre - 50m		
Facilities/Features	**Turns a Profit**	**Can Lease to Third Party**	**Facilities/Features**	**Turns a Profit**	**Can Lease to Third Party**
25m lap pool	✗	✗	50m lap pool	✗	✗
Warm water pool	✗	✗	Warm water pool	✗	✗
Learn to swim pool	✓	✓	Learn to swim pool	✓	✓
Gym	✓	✓	Gym	✓	✓
Café	✓	✓	Café	✓	✓
Child Care Centre	✓	✓	Child Care Centre	✓	✓
			Accommodation	✓	✓
			Ice bath	✓	✓
			Criterium track	✓	✓
			Bike hire	✓	✓
			Restaurant	✓	✓
			Group meals	✓	✓
			Nature Park commissions	✓	✓
			Physiotherapy	✓	✓
			Massage therapy	✓	✓
			Laundry	✓	✓
			Private bus	✓	✓

Table 2 outlines that aquatic facilities do not bring in enough money to turn a profit in a typical centre. Aquatic centres generally include a gym, café and child care service, which can aid in shifting a centre's performance toward breakeven as they usually require an additional fee for use. Although these additional facilities may offer some help to the bottom line, it is generally not nearly enough for the centre to begin approaching breakeven.

Expanding the traditional aquatic centre model to include a wide range of dry sporting and training facilities creates more opportunity for the centre to increase income. The commissioning of these facilities on Phillip Island will be very attractive to local sporting groups that are already over capacity and lacking resources. The inclusion of accommodation and meals enables the centre to provide visiting training groups with everything they need during their stay, meaning that all of the funding that they need for their trip will be spent in house either directly or to third party operators, in which case, the operator will pay the centre a commission on each meal and bed.

The proposal is focused on a concept that will reduce potential losses from an aquatic centre on Phillip Island. The key to reducing these losses is to include accommodation and meals income in the centres turnover. This will provide additional income from visiting groups via the accommodation, and also increase visitor numbers to the aquatic centre. The inclusion of a 50m pool is also essential to the concept as endurance athletes and many sporting teams require a 50m pool at a training venue.

4.1 The Numbers that Count

The criterium track included with the pool in the initial stage of development of this site as it expands the possibilities to attract a significant number of 'Sport Visitors' in the most economical way.

The design provides a cold weather option for visiting groups that extends off the site to the road cycling loop and the Oswin Roberts/Rhyll Inlet cycle/run loop.

The table below indicates a lower build cost for the centre than Australian existing designs. This cost is calculated on European centres with simpler designs that are cheaper to build and have higher energy performance. By adopting the key elements of these designs, the centre is more financially viable from the outset.

The chart below compares major differences between BCALC & PIALC feasibility studies

BASED ON BEDS BEING AT FULL CAPACITY 70% OF THE YEAR (255 DAYS/YEAR)		
	25m - No Accommodation	***50m - Accommodation***
	Wonthaggi	**Phillip Island**
Population (Within 20 min)	15,794	13,160
Memberships	560	691
Yearly Users	94,428	76,384
Centre Build Cost		
Aquatics	$41,841,949	$42,478,521 * *
Criterium track	$-	$500,000
Accommodation	$-	$3,000,000
	$41,841,949	$45,978,521
Centre Revenue		
Facilities	$3,706,000.00	$3,146,557.11
Beds	$ -	$1,593,750.00
Meals	$ -	$2,231,250.00
Revenue from othe Tourists/Holiday Home owners(13,160 - 2mil)	$-	$ ++++
Additional from visiting Athletes	$-	$ ++++
Criterium track	$-	$0.00
	$3,706,000.00	$6,971,557.11
Expenditure		
Facilities	**$3,841,000.00**	**$3,581,662.82**
Meals, maintenance etc.	**$ -**	**$1,800,000.00**
	$3,841,000.00	**$5,381,662.82**
Profit/loss (excl build cost)		
Facilities only	**$3,841,000.00**	**$5,381,662.82**
Total Revenue	**$3,706,000.00**	**$6,971,557.11**
Total	**-$135,000.00**	**$1,589,894.29**

All figure's used are estimates. ***On these figure's it could be set up as Private Public Enterprize.***

Based on one night cost for full house $6,250 per night.(250 patrons)

*** Phillip Island (MILLOWL) construction figure's show the potential of using different construction and heating parameters.***

4.2 Using the Aquatic Centre as an Emergency Centre

In recent times we have seen examples of major bushfires at Mallacoota and earthquakes in Gippsland. Phillip Island is linked to the mainland by one ageing bridge and has little capacity to evacuate by sea in any meaningful way. The option to have one or more self-powered buildings that can provide shelter, light, warmth, hot showers and meal service in times of an emergency should not be overlooked during this development. An aquatic centre is a large, climate controlled space that is a safe haven during a storm, heatwave or other crisis.

Pimpama Sports Hub on the Gold Coast is Australia's first sports and community hub designed to be 100%energy self-sufficient - featuring almost 2000 solar panels to generate clean electricity and 444 kilowatts of battery storage, renewable energy to power 100 homes or 50% of the electricity required for the site. It includes cogeneration power systems to assist with heating the pool and that can be used as a backup in the event of a power outage or grid failure.The systems in place at this Sports Hub mean power can continue to flow to the site even during a disaster, contributing to the Gold Coast's readiness for storm season.

The proposed design for Phillip Island would have the same outcomes and not rely on a gas supply. This would be the first facility of it's kind in Australia and would be more resilient than the Pimpama site, while addressing Climate Change and having comprehensive facilities to handle emergencies should they arise.

4.3 Recommendations

-The vexing question of how an aquatic centre can be built on Phillip Island is a complex issue which can be resolved by focusing on some basic elements.

-There is a clear need for increased recreational facilities on Phillip Island, and this should be a priority for the council. A sports performance centre would address many of these issues.

-Most aquatic centres lose money. The aim of Council should be to minimise financial loss from an aquatic centre on Phillip Island when they proceed with building a new centre.

-We can measure the efficiency of an aquatic centre(indoor centre) by comparing the floor space of the aquatic centre with the annual energy consumption which gives us an **Energy Usage Intensity(EUI-in kWh/sqm/year)** measure which can be more easily understood. The lower the EUI, the more energy efficient the centre is. An aspirational target with an **EUI of 200kWh/sqm/year** is realistic and should be set as a benchmark for designers.

-The Aquatic centre should utilse a low energy design with a low profile, low glazing and high thermal efficiency to reduce energy consumption over the life of the building and reduce operating costs for the council.

-The site should aim to install **a district heating and cooling system** that maximises heat recovery across the buildings/pools plus accommodation. This will further increase the efficiency of the centre and align with the climate goals of the council towards net zero carbon emissions.

-**Accommodation that can be owned or leased** should be an integral part of any design. Without it, the losses for the council would be prohibitive given the potential local user catchment. With accommodation included, the centre should aim for a breakeven financial position.

-A project of this scale will need **support from the State government** as a major project for the region. Support from State MPs should be vigorously pursued and secured**. A Federal grant** should also be pursued via the local Federal MP.

-A low energy aquatic centre that is innovative and sets new standards would be suitable **for an ARENA grant** for the energy system installed on the site. ARENA funding is usually provided on a dollar for dollar basis for similar projects.

-Another potential funding opportunity exsists via **Emergency Response Fund** and **Risk and Resilience Funding** which is available for Emergency management shelter that could be provided by an off-grid, self-powered building and accommodation that can provide heat/cooling, beds, hot showers and meals if required.

-Taking efficient design, efficient energy use and accommodation into account means that the complex has the potential to make **significant profits that can contribute to the further development of the Sport and Recreation facilities thereby increasing** the number of potential Sport Tourist visitors accordingly.

The following case studies illustrate where aspects of this proposal have been utilised elsewhere in Australia.

The Gold Coast Performance Centre is a premier sporting facility located in Runaway Bay, on the northern Gold Coast. The sports performance centre is a destination for the community, athletes, sporting teams and school groups to train, play and stay.

The Centre features:
- a 50m outdoor pool
- a 20m indoor warm pool- exercise and learn to swim lessons
- 600 sqm 'outdoor' gym
- athletics track
- Rugby fields
- Soccer fields
- Ice baths
- Synthetic Hockey field
- Criterium Cycle Track

The site also has 9 lodges that can cater for 360 guests in different configurations. Each lodge has a shared kitchen and a lounge area for each group staying. The kitchens can reheat meals but not prepare a full meal as there are no ovens or stovetops available.

Catering on the site is in a centre dining hall with seating for 250 guests. The site leases out the dining area and retains control over the accommodation. Any non-core activity is leased out to reduce wages for that activity. The Learn To Swim school is leased to Rackley Swim Schools

Key points

Target Market

-The site is designed to be flexible and attracts teams from both domestic and international markets.
-Accommodation is 3 star and costs around $25/person per night
-Some groups have long duration stays which run for **months**
-There is a need for some teams to have 'elite' access to the site. This is a market that was not envisaged in the original design and has required additional facilities to be built that are separate to those accessible by the public.
-Memberships are available that allow unlimited public access to both aquatic and gym facilities

Reduced wage costs

-by consolidating the sports and accommodation booking centre costs are reduced
-when a sporting team utilises the pool, the coaches can be drafted in to supervise that group, as they have lifesaving qualifications, and reduce the cost to the centre for pool supervision.

Leasing and other income streams

-the local bus company provides a commission to the centre for groups that are referred to them
-Vending machines for drinks are leased out
-Catering for the site is leased out
-Commissions are taken for bookings to local attractions
-Laundry equipment is leased out to a private provider
-Centre staff can be hired by the groups to make up numbers for supervision as required (offsite lifeguarding, sports supervision).

During holiday breaks Geelong Grammar School makes their facilities available to groups who are training for their upcoming season. The site features:
-25m indoor pool
-well equipped, air conditioned gym
-playing fields adjacent to the aquatic centre for AFL, Rugby, Netball and Hockey
-accommodation (student boarding house)
-dining hall for meals

It is the **combination** of facilities and accommodation that makes the site attractive for visiting sports groups.

Sample program for a school swimming camp

Day	Activity	Time
Monday	Pool- training	3-6 pm
	Dance Studio- dance	2.15-3 pm
Tues	Pool- training	6-9 am
	Dance Studio- dance	2.15-3 pm
	Pool- training	3-6 pm
Wed	Pool- training	6-9 am
	Fitness Gym- circuit training	10-11.30 am
	Dance Studio- dance	2.15-3 pm
	Pool- training	3-6 pm
Thurs	Pool- training	6-9 am
	Dance Studio- dance	2.15-3 pm
	Pool- training	3-6 pm
Friday	Pool- training	6-9 am
	Dance Studio- dance	10-11.30 am (option)
	Fitness Gym- circuit training	10-11.30 am (option)

Week	Month	Dates	Event	Groups
1	Jan	3-9	Summer holidays	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), Peak season for swim clubs, Tri clubs, Amateur swim club camps
2		10-16	Summer holidays	Pre-season for pro winter teams, Peak season for swim clubs, Tri clubs, Amateur swim club camps
3		17-23	Summer holidays	Pre-season for pro winter teams, Peak season for swim clubs, Tri clubs, Amateur swim club camps
4		24-30	Summer holidays	Pre-season for pro winter teams, Peak season for swim clubs, Tri clubs, Amateur swim club camps
5	Feb	31-6	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
6		7-13	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
7		14-20	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
8		21-27	School Camps peak season	School specialist camps
9	Mar	28-6	School Camps peak season	School specialist camps
10		7-13	School Camps peak season	School specialist camps
11		14-20	School Camps peak season	School specialist camps
12		21-27	School Camps peak season	School specialist camps
13	Apr	28-3	Easter weekend	
14		4-10	Term 1 break QLD	School training camps, Tri camps
15		11-17	Term 1 break NSW, VIC, QLD	School training camps, Tri camps
16		18-24	Term 1 break NSW, VIC	School training camps, Tri camps
17		25-1		Tri camps
18	May	2-8		Tri camps
19		9-15		Tri camps
20		16-22		Tri camps
21		23-29		Tri camps
22	Jun	30-5		Tri camps
23		6-12	Queens Birthday Long Weekend	Tri camps
24		13-19		Tri camps
25		20-26		Tri camps
26	Jul	27-3	Term 2 break VIC, QLD	School training camps, Tri camps
27		4-10	Term 2 break NSW, VIC	School training camps, Tri camps
28		11-17	Term 2 break NSW	School training camps, Local club indoor training
28		18-24		Local club indoor training
30		25-31		Local club indoor training
31	Aug	1-7		Local club indoor training
32		8-14		Local club indoor training
33		15-21		Local club indoor training
34		22-28		Local club indoor training
35	Sept	29-4		Tri camps
36		5-11		Tri camps
37		12-18		Tri camps
38		19-25	Term 3 break NSW, VIC	School training camps, Amateur swim club camps, Tri camps
39		26-2	Term 3 break NSW, VIC	School training camps, Amateur swim club camps, Tri camps
40	Oct	3-9	Term 3 break NSW	School training camps, Amateur swim club camps, Tri camps
41		10-16	Phillip Island GP	Accommodation for support groups at GP event,
42		17-23	School Camps peak season	School specialist camps, Tri camps
43		24-30	School Camps peak season	School specialist camps, Tri camps
44	Nov	31-6	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
45		7-13	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
46		14-20	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
47		21-27	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
48	Dec	28-4	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
49		5-11	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
50		12-18	School Camps peak season	Pre-season for pro winter teams (mid week), Pre-season for amateur winter teams (weekends), School specialist camps
51		19-25		
52		26-1		

6. Support from Sporting Groups

6.1 Cycling &Triathlon Victoria

Triathlon Victoria is consistently seeking high-quality and integrated swim, bike, run facilities that allow for

- Training (regular weekly, full day and camp options)
- Small scale events – indoor triathlon using pool, spin room and adjacent outdoor or sports hall space
- Club 'houses' where Triathlon Victoria can support the establishment of traditional NFP clubs or commercial squads (similar to personal training groups)

The details shared with us on the Phillip Island Aquatic Centre demonstrate facilities that lend themselves to multisport and if the centre is established with the connection of swim, bike and run there would be substantial demand from triathlon users for activities as detailed above

Grant Cosgriff
Executive Director, Triathlon Victoria

Phillip Island Cyclist

We ride a similar route several times a week, but the scenery that our route takes in, especially around the west side of the Island through Ventnor and out to the Nobbies, is stunning in any weather and different each time. Thankfully being an in-out road, the traffic is minimal with considerate drivers, just the occasional surfer or perhaps a photographer looking to capture the beauty of the scenery and wildlife. It's so quiet and beautiful, with plenty of wildlife, the roads are challenging with ample undulations, sometimes windy and the roads are 'dead' which means you need more power to ride them = good training!

"Sally, keen Phillip Island cyclist"

"Phillip Island Swim Club is a community based club with approximately 75 members. We currently train three times a week at a centre 40 minutes away.

During these sessions we are allocated two to three lanes as we are sharing the pool with other aquatic activities taking place. With Phillip Island's recent growth in population, our club has had a significant increase in enquiries to join the club.

Unfortunately due to the limited lane space we are having to turn these swimmers away as we simply cannot access any more sessions or lanes. With an aquatic centre on Phillip Island our club could potentially double in size and keep those that live surrounded by water safer in the water."

Lucy Gallyot, President
Phillip Island Swim Club

"I have been a coach with Phillip Island Swim Club for over 15 years. Phillip Island swim club is a vital part of the Phillip Island community; however, its growth has been continually hampered by two long-term barriers. These barriers are the constant issue of travel times for families and children. It is at least 40 plus minutes travel time to and from Wonthaggi for training each week or even twice a week for some families.

The other barrier is lane space. Phillip Island swim club is not only restricted to the nights that it can train, but also the number of lanes available in the pool. If we had our own facility on Phillip Island more training mornings and nights would be available and therefore open up more opportunities for growth and development. I believe that if the Wonthaggi facility is built first these barriers will continue to remain in place."

Diddy Cuthbertson, Swim Coach
Phillip Island Swim Club

6.3 Phillip Island Football Netball Club

"Our club is absolutely bursting at the seams with players/ members and volunteers and have very quickly outgrown our existing facilities. We have **over 700 playing members** throughout our football/ netball/ Auskick and Net Set Go . A breakdown of the numbers is approximately 150 footballers, 100 netballers all play on Saturday. On every Sunday we have 2 sides in our under 10 ,12 , 14 . We then have our girls play also which equates to 180. Our numbers are so high we send 3 teams of netball to Cranbourne to play each week (50 girls). We are starting up an over 35s this year and already have approx 35 players signed up. Then with Auskick we have approx 200 young boys and girls , and lots of young NSG.

The club desperately needs another playing oval with lights so we can schedule training nights for them all. We seriously struggle to give all our players a decent amount of time to train with the one oval; our senior footballers generally start pre -season in December and find it extremely hard as the cricket club have control of THE oval . Our junior footballers start their pre season in late January and suffer the same access to the oval . Our season runs from early April to mid September.

I couldn't think of a better training facility of a aquatic centre . In a sporting hub , our players would be able to take advantage of doing swimming and weights sessions instead of slugging it out on wet and muddy ovals in the extremely cold winters we are famous for."

Chris Ross, President ,
Phillip Island Football Netball Club

6.4 Phillip Island Soccer Club

"Phillip Island soccer club is a growing club that participates in the Gippsland Soccer League. We have approximately 160 playing members aged from 4- 50. Our junior competitions are mixed and we have senior and reserve men's teams and senior women. We are one of the biggest soccer clubs in our league.

Currently we play at Newhaven recreation reserve and due to an increase in participation and particularly female participation we are having new change rooms constructed for 2022. As soccer continues to grow in popularity as a sport in our region we anticipate ongoing growth in our club. We have recently shifted to a 2 day competition for our juniors to accommodate the increase in participation.

With this growth in mind the club would benefit in the future from access to another playing field, particularly an all weather, synthetic pitch. The club would also like to include Futsal (an indoor soccer program) in the future, which would necessitate accessing an indoor facility."

Andrea Blair Dempsey
President Phillip Island Soccer Club

Low Energy Aquatic Centres

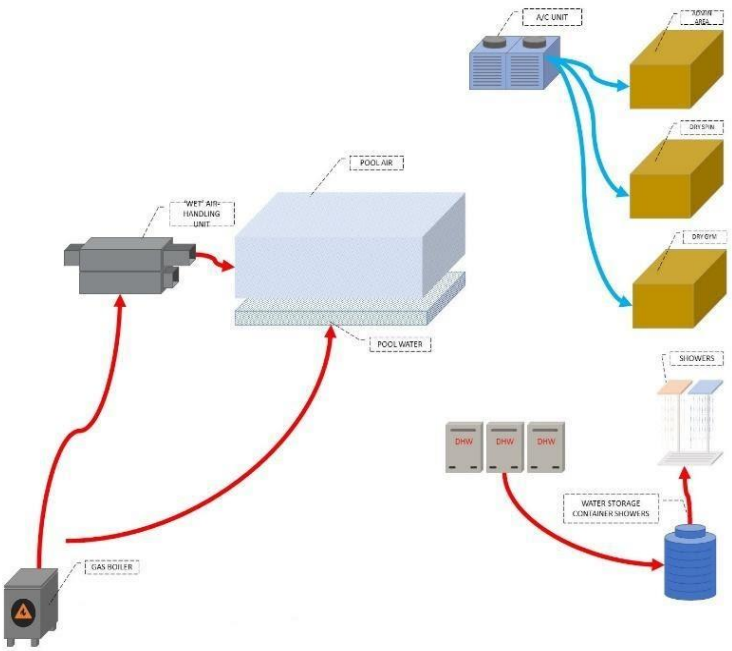
The cost of energy to heat and ventilate swimming pools properly is a significant component of aquatic centre costs. A key step in making them more affordable is to ensure that they use as little energy as possible, as efficiently as possible.

Negawatt Projects has been working with councils, universities, architects, engineers and suppliers to increase the efficiency of aquatic centres since 2018. In this time we have worked to educate councils about the standards they should demand from their design teams to produce more efficient centres. But how efficient is a 'low energy' aquatic centre?

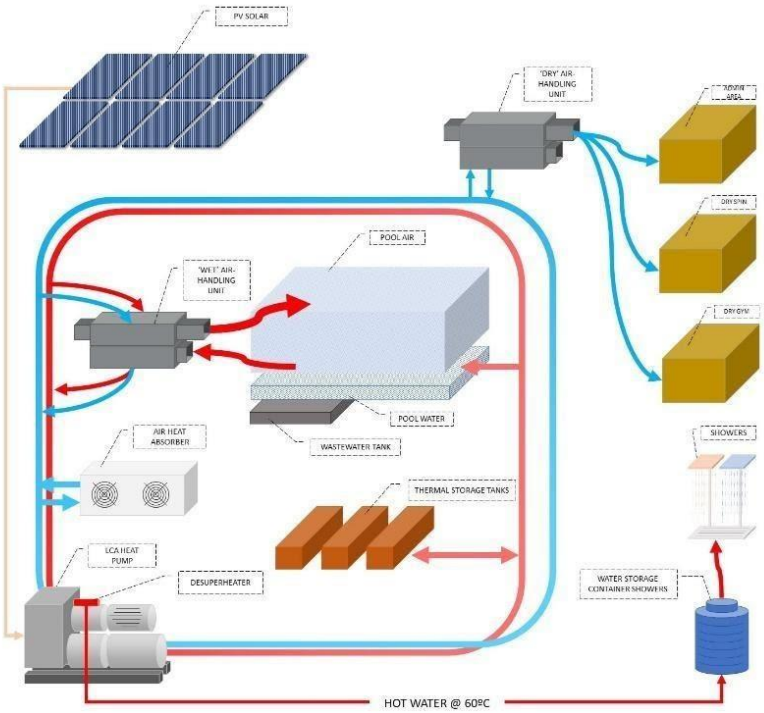
Some existing Australian aquatic centres are amongst the most inefficient in the world. This is due largely to the historical embrace of gas energy systems, and also, flawed building designs that seek to emulate 'an outdoor pool' within an indoor structure. As the age old saying goes; 'you can't have your cake and eat it too'. Heated indoor pools present a unique set of challenges that many designers cannot fully comprehend.

Most existing aquatic centre designs suffer from the 'unitary equipment disease'. If you need to heat a part of the building you add in a heater. If you need to cool something you add in a cooling system. This approach ignores the fact that when you are cooling with modern air conditioning systems you also produce heat. The opposite applies for heating with heat pumps which produce cold. So why not integrate them and increase the efficiency of the centre? This concept is slowly gaining acceptance with councils, but it is not happening overnight.

Typical Gas system	
Operating temperature range	-5 to 45^{0}C
Winter boost required?	No
COP of gas boiler	0.9
GWP of HP refrigerant	N/A
A/C Refrigerant	R410A
HVAC heat recovery	75%
Solar system size limited	Yes
Thermal storage applicable	No
Heat recovery applicable	No
Pool warm water supply	80^{0}C



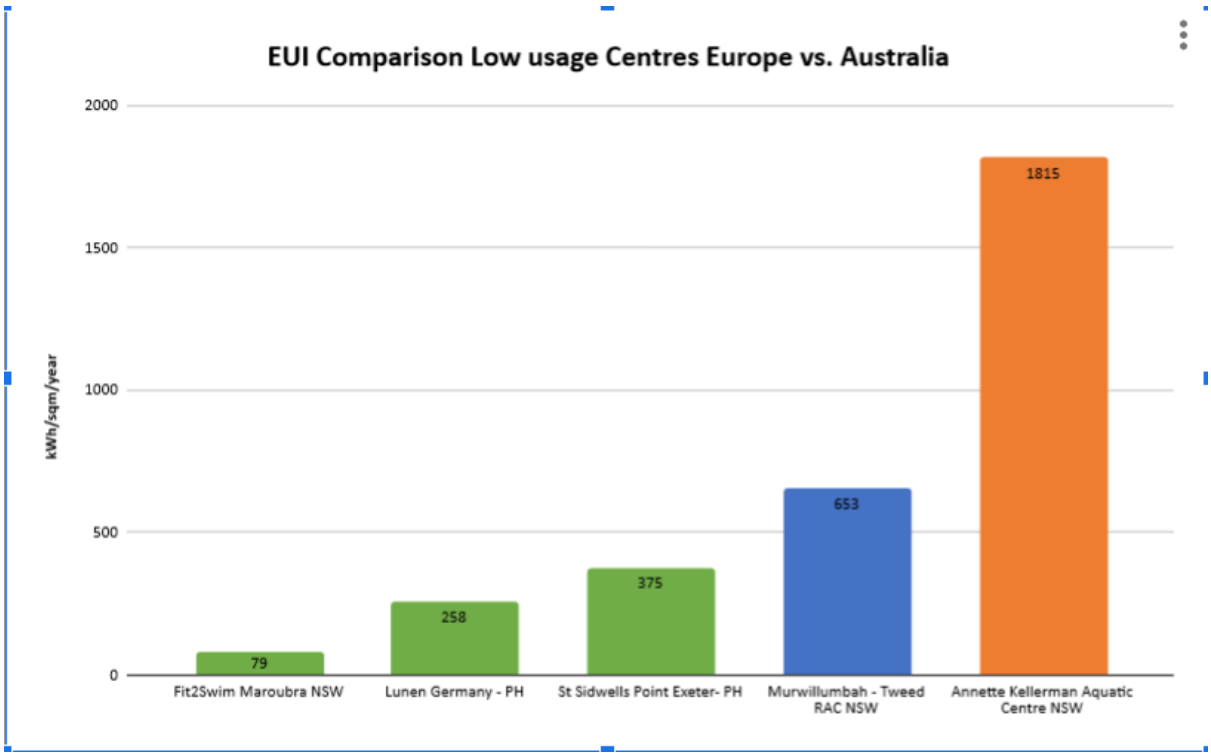
Poly-Source Water to Water heat pump- LCA	
Operating temperature range	-5 to 45^{0}C
Winter boost required?	No
COP of heat pump (combined)	9
GWP of HP refrigerant	0
A/C Refrigerant	R717
HVAC heat recovery	~100%
Solar system size limited	No
Thermal storage applicable	Yes
Heat recovery applicable	Yes
Pool warm water supply	45^{0}C



We know more efficient systems will work in an Australian climate as we have studies from German Passivhaus aquatic centres built in 2009 in Lunen and Bamberg that provide detailed data on those systems in the German climate, which is around 13 degC colder in winter. Phillip Island is a lot warmer than this in winter; usually above 0 degC.

https://negawattprojects.com.au/wp-content/uploads/2021/05/Monitoring-the-Lunen-Aquatic-Centre.pdf

There is further evidence available from the Fit2Swim swimming centre in Maroubra in Sydney which currently uses less energy proportionately than any swim centre in Australia. We can measure the efficiency of an aquatic centre (indoor centre) by comparing the floor space of the centre with the annual energy consumption. This produces an **Energy Usage Intensity** (EUI-kWh/sqm/year) figure which can be more easily understood. Some Australian aquatic centres are using **more than 18 times** the energy per square metre that a low energy swim school will use. This demonstrates just how low energy designs can affect energy efficiency and consideration of the EUI should form part of any specification for a new aquatic centre.



By setting out clear energy goals at the outset, designers change their designs to be focused on more efficient centres that also **cost less to build.** Reducing glazing, lowering the heights of buildings and insulating at every opportunity results in very low energy buildings where heat can be easily recovered and reused in the system, which results in smaller energy systems being required. This then allows Solar PV systems to be better utilised.

Changing the expectations of councils for low energy aquatic centres

If you set out to build a higher efficiency aquatic centre, you need to start with far higher expectations. This can be difficult if the design teams of architects and engineers have not had experience with these designs previously. The Bass Coast Council is currently building a new Cultural Centre to meet Passivhaus standards (due for completion in April 2023) and this is a remarkable undertaking for a regional council in Victoria given the resources of the council.

The greatest hurdle for the council with the Cultural Centre project is to find architects, engineers and contractors who understand and have worked to these higher standards and have the capacity to achieve these goals with confidence. You don't find teams of this calibre doing a quick Google search: there is a lot more to it as some councils have found to their dismay.

Lunen Passivhaus aquatic centre, Germany

Peer review of designs

With the increasing complexity of the designs required to meet challenge of climate change and the large capital costs of aquatic centres, it makes sense for councils to include peer reviews of architectural and engineering designs as part of the design process. Councils that have included peer reviews of their projects report superior outcomes from these projects. The only question is: who do you engage to conduct these reviews? It all comes down to planning the outcomes of the project carefully and assessing the successful project team to ensure they can prove their experience with this type of work.

The good news

There have been many studies of aquatic centres completed recently that are leading to more efficient designs for aquatic centres in Australia. By utilising more stringent Environmentally Sustainable Design (ESD) parameters, councils are able to estimate the energy consumption of these centres **before** they are built with more accuracy. In this way, the design teams have more tangible energy targets to meet and this also allows councils to be able to monitor the progress of projects more closely during construction.

There are 5 key elements for Councils to consider when looking at the design of these centres:

-High thermal integrity of the building - design the centre for an alpine setting

-High heat recovery-recovery levels of near 100% are possible. If the design does not aim for this you will have an unnecessarily inefficient and energy-expensive building. This should form part of your brief to the engineering team.

-Efficient heating and cooling system- use 'water to water' heat pumps and utilise the high and the low side where possible.

-Thermal storage- if you are not using thermal storage to boost your heat pumps, you are not thinking the energy equation through. Thermal storage **is the cheapest energy storage** money can buy by a long stretch and will increase the efficiency of a water-to-water heat pump by around 30%.

-Solar PV and storage- flow batteries are a great fit for aquatic centres, and they will last 25 years. And the best part; they are close to 100% efficient when the aquatic centre is used to cool them! An integrated energy system can also be used to cool solar panels in summer months to optimise performance of the panels.

Creating a District Heating and Cooling System

Using an integrated energy system for the aquatic centre allows the council to consider a 'district heating system'. In the case of the proposed Sports Centre, it would be a 'district heating and cooling' system.

The aquatic centre will require:

-heating of the pool water ranging from 28 degC to around 35 degC
-heating of the air above the pool to around 32 degC
-air conditioning of the air for offices and dry exercise spaces to around 21 degC
-air conditioning of the air in the gym to around 19 degC
-heating of hot water for showers to over 60 degC

Using an integrated energy system allows this to be supplied by two industrial heat pumps for the whole centre. The cold from the heat pumps is used to recover heat from exhaust air from all areas: the largest energy gain in the centre that is available.

This 'district' system is more efficient, as it allows heat recovery at low cost and high efficiency in more buildings on the site, uses less plant and also reduces the maintenance costs for the site. Industrial Low Charge Ammonia heat pumps have an expected working life of ***over 50 years***. They have been used extensively by industry for over 150 years and are very reliable and if maintained correctly by service contractors there are few if any issues to be concerned about. This is a substantial saving in capital costs for the life of the building for this plant and achieves a goal of the project - moving towards net zero emissions with no gas use on the site.

To close the gap on self sufficiency will require the addition of battery storage. This will need further investigation to outline all the issues and will form part of the design process going forward.

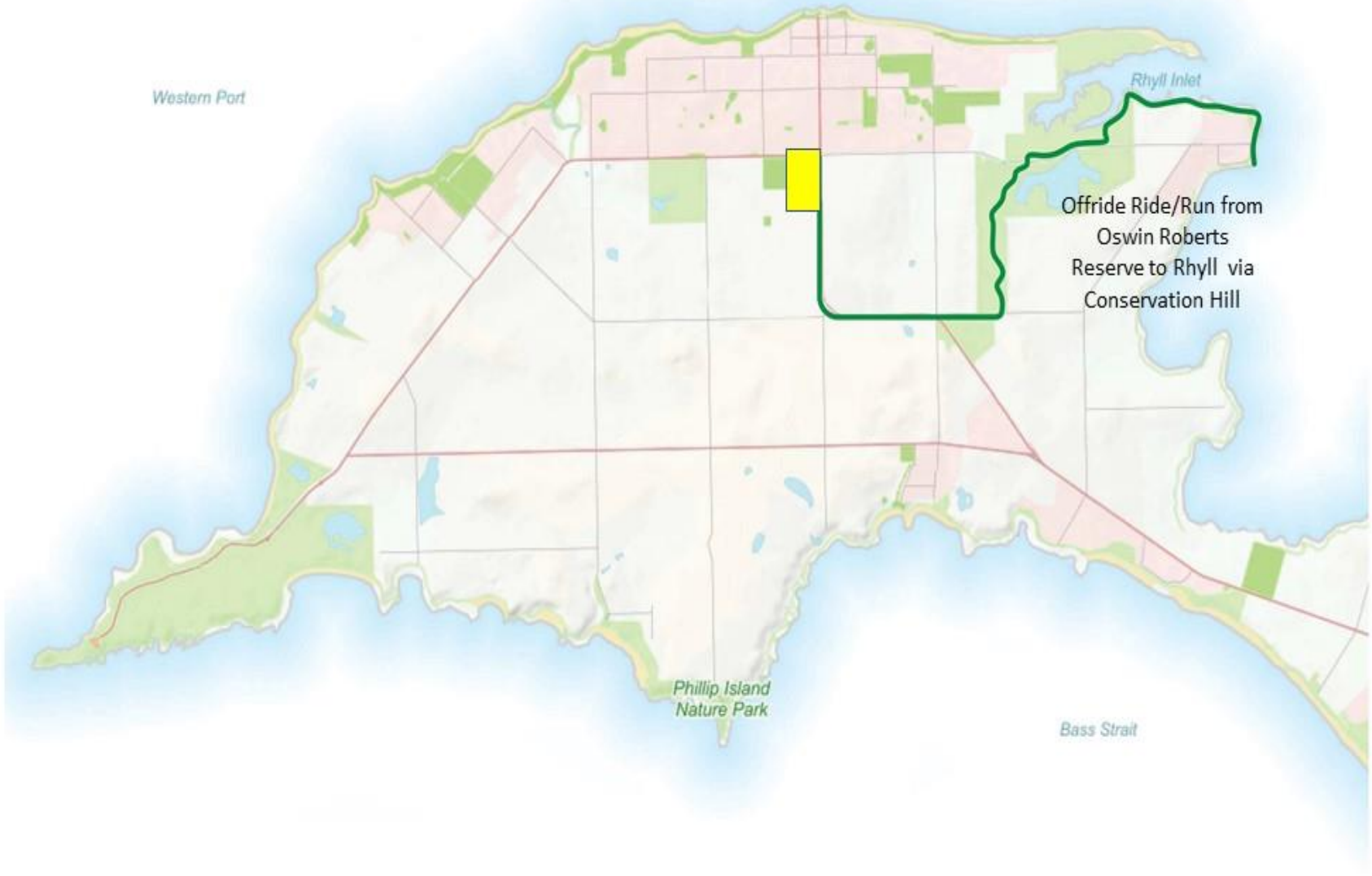
8. Site Maps

8.1 Trail Activities connected to the Island

We ride a similar route several times a week, but the scenery that our route takes in, especially around the west side of the Island through Ventnor and out to the Nobbies, is stunning in any weather and different each time. Thankfully being an in-out road, the traffic is minimal with considerate drivers, just the occasional surfer or perhaps a photographer looking to capture the beauty of the scenery and wildlife. It's so quiet and beautiful, with plenty of wildlife, the roads are challenging with ample undulations, sometimes windy and the roads are 'dead' which means you need more power to ride them = good training!

Sally Head
Phillip Island Cycle Group

WESTERN CYCLE


Western Port
Rhyll Inlet
Offride Ride/Run from
Oswin Roberts
Reserve to Rhyll via
Conservation Hill
Phillip Island
Nature Park
Bass Strait

MTB TRAIL