DESIGN EXCELLENCE / DA JURY REVIEW

Parramatta Aquatic and Leisure Centre (DA/277/2020)

Date of Issue: 20 November, 2020

Architects: Andrew Burges Architects, Grimshaw Architects and McGregor Coxall

Design Competition Reference

Number:

DC/3/2018

Design Excellence Jury: Kim Crestani, City Architect, City of Parramatta Council

Joshua French, Director, Parklands Development and Strategy,

Parramatta Parklands Trust

Peter Poulet, Central City District Commissioner, Greater Sydney

Commission (Chair + Proponent's Representative)

Project History

Design Competition Held:	29 March 2018
Design Excellence Awarded:	26 November 2018
Design Jury Update #1 (Presentation)	29 January, 2020
Design Jury Update #2 (Presentation)	11 March, 2020
DA Jury Review (desktop):	20 October, 2020

Jury Comments

- This memo is to confirm that the Design Excellence Jury have completed their assessment of the Development Application for the Parramatta Aquatic and Leisure Centre.
- The Design Excellence Jury was reconvened to review and comment on the design development undertaken by the Design Excellence Competition winning architects, Andrew Burges Architects, Grimshaw Architects and McGregor Coxall.

Design Excellence Competition Jury Report – Design Development and Conditions

- At the conclusion of the Jury Presentations, held on 29 March, 2018, based on the evaluation of the submitted schemes in accordance with the Design Competition Brief, Andrew Burges Architects, Grimshaw Architects and McGregor Coxall was formally announced by the Competition Jury as the winning scheme.
- The original Design Competition Jury comprised of the following members
 - Peter Poulet, NSW Government Architect (chair)
 - Lee Hillam, Principal Design Excellence, Government Architect NSW
 - o Joshua French, Director, Parklands Development and Strategy, Parramatta Parklands Trust.
 - o Matthew Lorrimer, Executive Director of Crown Project Services (Proponent's Representative)
 - o Jim Corbett, Director of Sport and Leisure Solutions (Proponent's Representative)



- The Jury has determined the winning scheme to exhibit Design Excellence, subject to a series of design development conditions listed below.
- Based on a review of the latest amended architectural drawings (submitted 30/9/20) and technical studies, the Jury provides the following comments.

The Jury considers the following items were particularly valued and should be $\underline{\text{retained}}$ throughout the design and delivery phases of the development:

unu	delivery phases of the development.	
	Design Development Conditions Jury Report dated 4/7/18	Jury Comment DA documentation submitted 30/9/20
1	Location of the Health and Wellness Centre (gymnasium):	Item Satisfied.
	The street frontage of the "wedge" building containing the health and wellness centre provides a high level of activation and a high commercial value for a key revenue source. The wedge also acts as a noise barrier for the outdoor aquatics area resulting in an enhanced customer experience by capturing the sounds of the park rather than the passing traffic.	The Health and Wellness Centre, which is contained within the thin, linear "wedge" building has been retained and rationalised through the design development process.
		Although it has reduced in size slightly when compared to the Design Competition winning scheme, it is located in the same location that provides a visual and acoustic buffer between the park and an adjacent road and rail corridors.
		The developed and sophisticated approach to materials and detailing of the Health and Wellness Centre is supported by the Jury.
2	The planting palette by McGregor Coxall:	Jury Comment
2	The planting palette is beautifully considered	Item Satisfied.
	and presented and should be retained (subject to Condition 10 below).	The planting palette has been enhanced through the design development process. It is important that planting densities are retained, and mature trees are planted, particularly in the pool hall and carpark areas, to create shade and an impactful landscape early for visitors.
		The Jury note that the amended architectural and landscape drawings have removed a significant number of proposed trees from the Park Parade entry / bus drop off zone.
		Recommendation – The Jury recommend that Council's relevant landscape officer require (via a condition of consent) that the proposed planting in this zone is reinstated as per the original Development Application submission.
		The Jury defer the detailed assessment of the landscape drawings to the relevant Council Officer.
3	The "ring" concept:	Jury Comment
	The concept of the "ring" enclosure that forms	Item Satisfied.
	the primary identifying element of the aquatic centre presents an opportunity of a large-scale landscape art piece. Collaboration or consultation with a suitable artist is recommended (refer Condition 11 below), though it's elegance, simplicity and	The concept of "The Ring" has been retained in the submitted design. It functions as a publicly accessible verandah, providing views into the Aquatic Centre and across the Park back towards the Parramatta City Centre.
	understated nature should be retained.	Architecturally, the ring provides a highly refined formal expression that has minimal bulk while creating clear



legibility for the Aquatic Centre set within the Mays Hills Precinct.

The Jury not that the submitted draft Heritage Interpretation Strategy & Plan (artefact) proposes "a series of interpretive elements located along the walkway of the outer ring around the top of the pool complex which will contain stories of events and landscape views from both conceptual and physical 'points of view', addressing both Aboriginal and non-Aboriginal perspectives". This concept is supported by the Jury.

Recommendation – The Jury recommend that a condition of consent is applied that requires the Jury to review and comment on the developed proposals for Public Art, Heritage and Interpretation Strategies prior to the relevant Construction Certificate.

Single level experience (pool hall):

The single level ground floor plan within the "ring" pool hall building is to be retained.
Conceptually (subject to the conditions below regarding internal layout changes) this arrangement results in a positive outcome for customer experience and operational requirements. Movement within the building is open around the pools and should be retained.

Jury Comment

Item Satisfied.

The submitted "single ground floor plan" has been retained and is consistent with the original Design Competition winning scheme.

The Jury agree with the architects statement that "the architectural design has organised the functional spaces of the aquatic and leisure program on a single level for the simplicity of the user experience....The circular design provides clear sightlines and very legible circulation for the connection of all programmatic elements of the Aquatic and Leisure Centre".

Pedestrian Circulation:

Pedestrian circulation is flexible and allows entry from the city or the car park approaches equally. Movement within the building is open around the pools and clear through gym and administration spaces and should be retained.

Jury Comment

Item Satisfied.

The Jury confirm that the building entry experience is clear and legible from all approaches.

The proposed entries have an "improved generosity" and have been well developed by the design team. The building entries have been designed to provide legible and intuitive wayfinding.

The Competition Jury has made further observations and recommendations for the winning scheme as set out below:

1 Reduce the amount and level of cut/excavation:

Reduce the amount of cut significantly and associated spoil. Consideration should be given to relocating some of the facilities in the "ring" (i.e. basement facilities) to the "wedge" building. Consideration may be given to raising the "ring" building to reduce the level of cut. "Lifting" the aquatic hall partially out of the ground may also assist in providing a less "cavernous" feel.

Jury Comment

Item Satisfied.

The approach to balancing cut and fill is supported.



he location of the spa to ensure	
Reconsider the location of the spa to ensure compliance with the functional brief requirements.	Item Satisfied.
	The relocation of the spa from the pool entry occurred during the pre-lodgement phase.
	However, the Jury defer the suitability of the proposed spa location to Council's client-side user groups.
m Pool:	Jury Comment
	Item Satisfied.
be achieved from all areas within	The relocation of this pool occurred during the pre- lodgement phase.
	However, the Jury defer the suitability of the proposed location of the 'learn to swim pool' to Council's client-side user groups.
nctional/operational requirements:	Jury Comment
	Item Satisfied.
ensure that sightlines/view lines	The Jury are very supportive of the functional layout and arrangement of indoor and outdoor aquatic spaces.
	The Jury confirms that it has received written confirmation from Council's client-side team that the proposal is a "fit for use aquatic facility that is appropriate to the needs of City of Parramatta." (See Attachment 01)
nily Pool:	Jury Comment
	Item Satisfied.
	The Jury confirm that the design has incorporated appropriate strategies to optimise daylight access to all indoor pools (e.g. – ETFE skylights above 25m pool and learn to swim pools).
	Jury Comment
	Item Satisfied.
ker like" through enhanced natural	The developed and sophisticated approach to materiality and detailing is supported by the Jury.
perience:	Jury Comment
	Item Satisfied.
iprove customer experience.	During the pre-lodgement phase, the size, layout and functionality of the health and wellness centre was rationalised.
	swim pool can be separate but is iden". Good view lines for be achieved from all areas within metional/operational requirements: review of the perational requirements outlined in a lensure that sightlines/view lines efficient operational model for the quire some adjustment to the ming of the development. Inily Pool: Idoor family pool) is too not on, too enclosed. Strategies need to be do optimise daylight access to accept the pool of the development of additional light of the provision of additional light operience: In Condition 5 above, the pool operally should be reconsidered to ker like" through enhanced natural ough provision of additional light operience: In Condition 5 above, the pool operally should be reconsidered to ker like" through enhanced natural ough provision of additional light operience: In Condition 5 above, the pool operally should be reconsidered to ker like" through enhanced natural ough provision of additional light operience: In Condition 5 above, the pool operally should be reconsidered to ker like" through enhanced natural or perience: In Condition 5 above, the pool operally should be reconsidered to ker like" through enhanced natural or perience: In Condition 5 above, the pool operally should be reconsidered to ker like" through enhanced natural or perience: In Condition 5 above, the pool operally should be reconsidered to ker like" through enhanced natural or perience:



	Internal planning & efficiency of circulation:	Jury Comment
8		Item Satisfied.
	Give consideration to passageways inside the indoor aquatic hall, to eliminate pinch points and to improve efficiency of circulation.	
		Since the Design Competition, The Jury confirm that the internal planning has been optimised.
9	Reorientation of 50 metre pool:	Jury Comment
	The above changes could require rotation of the 50-metre pool away from its north-south orientation to avoid pinch points on its eastern side.	Item Satisfied. The proposed 50m pool landscape is supported, with the introduction of the extended pool concourse, rain garden and large mature trees.
10	Internal Landscaping:	Jury Comment
	The trees within the grassed area in the "ring" building should be reconsidered. These pose potential maintenance issues (root obstructions, leaves in the pools) and potential	During the pre-lodgement phase, the Jury recommended that more shading was required for the outdoor pool, lawn and public terrace.
	bare patches in grass.	The introduction of 3 x large canopy trees within this outdoor lawn was supported by the Jury.
	An alternative shading strategy should be considered.	Recommendation - These trees should be minimum 1000 litre specimens.
11	The "ring" concept:	Jury Comment
	Collaboration or consultation with a suitable artist is recommended to investigate the opportunity of creating a large-scale landscape art piece through the "ring" enclosure form/structure. Though it's elegance, simplicity and understated nature, as demonstrated in the competition submission, should be retained.	Item Satisfied. See above discussion – "The Ring Concept".
12	Retention of Full Design Team:	Jury Comment
12	The Jury acknowledges the strong landscape gesture of the scheme and positive response to heritage considerations. The Jury insists that due to the restrained, strong and elegant scheme with a strong landscape influence, that the entire team must be engaged moving forward, namely the inclusion of McGregor Coxall as the landscape architect.	Item Satisfied. The full design team of Andrew Burges Architects, Grimshaw Architects and McGregor Coxall Architects have been engaged to design and prepare the Development Application. The Jury recommend a condition of consent that will require the full design team to "have direct and ongoing involvement in the design documentation and construction stages of the project, including signing off any required certifications for the Development Application, Modification Applications, Construction Certificate and Occupation Certificate stages." This condition is required regardless of the procurement methodology.

At the conclusion of the Design Competition, Council and the Proponent both agreed to reduce the number of Jury members from five to three. The proposed Jury members were:

- Peter Poulet, Central City District Commissioner, Greater Sydney Commission (Proponent's Representative + Chair)
- o Kim Crestani, City Architect, City of Parramatta Council
- Joshua French, Director, Parklands Development and Strategy, Parramatta Parklands Trust

The Jury was reconvened on two occasions in January and March 2020 to review and comment on the scheme prior to the lodgement of a Development Application with Council.

The Jury were supportive of the design development undertaken since the original Design Competition, and recommended that a Development Application be lodged with Council.

Based on a review of the submitted Development Application against the pre-lodgement comments, the Jury provide the following additional comments.

	Jury Pre-lodgement comments 29 January, 2020	Jury Comment DA documentation submitted 30/9/20
1	<u>User Groups</u>	Jury Comment
	The Jury want to ensure that Councils clientside user groups are properly engaged throughout the design development process. Please ensure that client-side representatives are continued to be invited to all future jury presentations. Prior to the award of Design Excellence, the Jury request that written confirmation is provided from Councils Client-Side Lead that the proposal is "fit for use", and appropriate to the needs of City of Parramatta.	Item Satisfied. The Jury confirms that it has received written confirmation from Council's client-side team that the proposal is a "fit for use aquatic facility that is appropriate to the needs of City of Parramatta." (See Attachment 01)
2	Cost Plan	Jury Comment
	Representatives from Council's Property Development Group (PDG) advised the Jury that the revised cost plan will soon be submitted. The Jury request that the updated cost plan is provided to the Jury.	Item satisfied. The Jury notes the submission of the developed Cost Plan that confirms that the scheme presented is in-line with the development budget.
3	Pool Entry	Jury Comment
	The Jury recommend that the main pool entry from Park Parade needs to be further emphasised. The current design is more compressed and discreet than the competition scheme, and the Jury are of the view that the previous café/entry solution had a better relationship to the entry lawn.	Item Satisfied. The Jury are supportive of the proposed designs of the Pool entrances.
	The main entry to the pool hall should be logical and overt. Lots of people will walk from Parramatta Station to the pool. Similar, the entry from the public carpark (north) needs to be integrated along the main arrival axis.	

 The Jury also would like to better understand how access for large groups will work (i.e. – swimming carnivals), and that the arrival spaces have capacity to handle such events.

Terrace Concept

- The Jury consider the "terrace concept" to be a very powerful concept, which has the potential to become a beautiful new public space for Parramatta.
- However, the Jury would like to better understand how this space interfaces with the upper level "ring" walkway, and how this space encourage the public to have a "coffee in the amphitheatre" from the pool café, and how the proposed levels and retaining walls relate to the surrounding spaces, including Park Parade and the Park.

5 Shade + Landscaping

 The Jury recommend that more shading is required for the outdoor pool, lawn and public terrace. The current scheme, with increased hard-stand is supported, but more input from the Landscape Architect is required, and a range of shade solutions explored (including large canopy trees).

Jury Comment

Item Satisfied.

The Jury reiterates its previous comments provided at pre-lodgement:

- The Jury is supportive of the developed concept of the Front Terrace, which is intended to be a non-trafficable, planted berm.
- The concept of "reading the ring through the trees" is powerful, and will rely on the strength of the landscape approach and selected plantings.
- The Jury is supportive of the design approach for the café, which is now clearly "in the pool", and becomes a "zen, unexpected space".

Jury Comment

Item Satisfied.

The Jury reiterates its previous comments provided at pre-lodgement:

- The developed concept landscape design of the outdoor pool is supported, including the wetland garden and provision of fixed shade umbrellas.
- The provision of 3 x large canopy trees within the outdoor lawn is strongly supported.
- The Jury are supportive of the 3 x wetlands/raingardens proposed
 - o Pitt Street Park Entry Raingarden
 - Entry Forecourt Raingarden
 - Wetland Garden in Aquatic Centre.

9 Pool Hall

- The re-planning of the main pool hall is supported, and the rationalised compressed spaces have a "taughtness" that is exciting to see.
- The Jury note that Council consider that the Learn to Swim pool to be very "valuable" and that the size/capacity of this pool should be maximised. The Jury note that Warren Green Consulting is advising Council on this issue.

Jury Comment

Item Satisfied.

The Jury are very supportive of the functional layout and arrangement of indoor and outdoor aquatic spaces.

The Jury confirms that it has received written confirmation from Council's client-side team that the proposal is a "fit for use aquatic facility that is appropriate to the needs of City of Parramatta." (See Attachment 01)



Cut and Fill **Jury Comment** 10 Item Satisfied. The approach to balancing cut and fill is supported. However, the approach to The Jury are supportive of the proposed approach to terracing, stepping, ramping and retaining cut and fill across the site and notes the design walls needs to be "fine-tuned" to the development process has considered how the existing landscape so that as design proposed levels integrate with the adjacent Park and development of the landform contains has also taken into consideration the retention of spaces within the Aquatic Centre and existing trees within the Park along the edge of the integrates with the adjacent Park. proposed works. ESD **Jury Comment** 11 The Jury would like more details regarding Item Satisfied. the proposed Environmentally Sustainable Design measures to be delivered with this As part of the DA assessment, Council's independent project. The Jury want to emphasise that ESD advisor, Flux, provided a detailed briefing to the for a public building that has been through Design Excellence Jury. a Design Excellence process, the ESD measures should be maximised. At the conclusion of the briefing, the Jury confirmed their support for the recommendations of Council's ESD advisor, which will require the following outcomes to be achieved, at a minimum: Energy Consumption – That air conditioning and water heating be serviced by an integrated central plant. Natural Ventilation – Require natural ventilation of the gym and fitness centre. To compensate for the loss of natural ventilation to the pool hall, the capacity of PV/solar panels should be increased. The location of additional PV panels should minimise visual impacts to OGH and its setting. The Jury do not recommend that PV cells are located on the "ring". Shading of Roof Lights – Ensure performance requirements for the shading of all roof skylights. The Jury are supportive of the recommended suite of ESD conditions of consent - see attachment 02. Public Art **Jury Comment** 12 The Jury strongly recommend that an Item Satisfied. artist is selected to develop the central "ring" as a public art project. See above discussion - "The Ring Concept". Views **Jury Comment** 13 The Jury request that a Park Parade Item Satisfied. elevation is provided that shows how the

The submitted elevations and materials palette are

supported by the Jury.

Wellness Centre and public carpark

appears from the streetscape.

	A detailed visual assessment will be required at DA stage that assess human views/experiences, including from the Park into the Aquatic Centre (including skylights and infrastructure) and heritage significant view lines.	The Jury defer the detailed assessment of heritage visual impact to Council's nominated expert.
14	Pedestrian Connections The Jury would like the landscape plan to better illustrate how public access is provided around the site, and how it integrates with Mays Hill Master Plan. Particularly for pedestrians walking along Park Parade, the ridge-line to the south of the site, the Prabha Memorial Walk and around the public circle "ring" overlooking the outdoor pool.	Jury Comment Item Satisfied. The Jury are satisfied the revised landscape plan addresses adequate public access around the building and surrounding landscape.
15	The Jury request that the design of the carparking adjacent to Park Parade is presented and discussed at the next Jury Presentation.	Item Satisfied. The Jury consider the arrangement and layout of the 190 at-grade parking spaces appropriate to the project and context. The Jury note that the original Design Competition Brief required a minimum of 212 at-grade parking spaces. A reduction of car parking is supported.

<u>Design Excellence Conditions of consent</u> – The ensure Design Excellence is maintained for the life of the development, the Jury recommend that Council apply the following standard conditions of consent to the approval of this development:

Condition 1	Prior to the issue of any Construction Certificate evidence must be provided to the satisfaction of Council's Group Manager, Development and Traffic Services that the architectural firm(s) responsible for the design competition winning scheme have been commissioned, and will have direct and ongoing involvement in the design documentation and construction stages of the project, including signing off any required certifications for the Development Application, Modification Applications, Construction Certificate and Occupation Certificate stages. REASON: To ensure the development exhibits design excellence as required by clause 7.10 of Parramatta Local Environmental Plan 2011
Condition 2	Prior to the issue of the relevant Construction Certificate(s), evidence must be provided to the satisfaction of Council's Group Manager, Development and Traffic Services that Council's Design Competition Panel (Design Excellence Jury) has confirmed that the architectural drawings, landscape drawings and samples of all external materials, in particular the external glazing and façade detailing, are consistent with the design competition winning scheme. REASON: To ensure the development exhibits design excellence as required by clause 7.10 of Parramatta Local Environmental Plan 2011
Condition 3	The architectural firm(s) responsible for the design competition winning scheme is not to be changed without prior notice and approval of Council's Group Manager, Development and Traffic Services. REASON: To ensure the development maintains the approved design excellence as required by clause 7.10 of Parramatta Local Environmental Plan 2011
Condition 4	There are to be no design changes to the design competition winning scheme unless they have been endorsed by Council's Design Competition Panel (Design Excellence Jury). REASON: To ensure the development maintains the approved design excellence as required by clause 7.10 of Parramatta Local Environmental Plan 2011
Condition 5	Prior to the issue of the first Occupation Certificate and any subsequent relevant Occupations Certificates, evidence must be provided completed to the satisfaction of Council's Group Manager, Development and Traffic Services that Council's Design Competition Panel (Design Excellence Jury) has confirmed that the architectural drawings, landscape drawings and samples of all external materials, in particular the external glazing and façade detailing, are consistent with the design competition winning scheme and that the development has been completed in accordance with approved plans. REASON: To ensure the development exhibits design excellence as required by clause 7.10 of Parramatta Local Environmental Plan 2011
Condition 6	Prior to the issue of the relevant Construction Certificate, documented details (photos, videos) and an accompanying report of the 1:1 manufactured visual mock-up (VMU) of key junctions of the external glazed facade (minimum 3m x 3m dimensions) must be submitted to, and approved by, Council's City Architect, Design Excellence Jury and Environmentally Sustainable Development consultant.
	REASON: To ensure the development exhibits design excellence as required by clause 7.10 of Parramatta Local Environmental Plan 2011
Condition 7	Prior to the release of the relevant construction certificate the applicant shall submit for the approval of the City Architect, key cross sections, partial plans and partial elevations through external walls, balconies, pergolas and other key external details. Drawings are to be fully annotated at a scale of 1:50 (or if necessary 1:20) showing details, materials, finishes and colours, so that the details and materiality of the external facades are clearly documented. Revised 3D photomontages should also be submitted. The development shall be completed in accordance with the plans approved to satisfy this condition.
	REASON: To ensure the design excellence quality of the development is retained.



Final Jury Recommendation

- The Jury consider that the design is consistent with the original Design Excellence Competition winning scheme, prepared by Andrew Burges Architects, Grimshaw Architects and McGregor Coxall.
- The Jury unanimously agree that the design exhibits Design Excellence, and meets Design Excellence objectives of the Parramatta LEP 2011.
- The Jury recommend that Council's apply the standard Design Excellence conditions
 of consent to this development approval. These conditions will require the Design
 Excellence Jury to review the development as part of any future S4.55, relevant
 Construction Certificate and final Occupancy Certificate.

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Kim Crestani City Architect City of Parramatta Council Joshua French, Director Parklands Development and Strategy, Parramatta Parklands Trust

Peter Poulet, Central City District Commissioner, Greater Sydney Commission

(Jury Chair and Proponent's Representative)



The Design Jury

Your Reference	Aquatic Leisure Centre for Parramatta
Our Reference	F2017/02999
Contact	Carolyn Isaac-Dean
Telephone	(02) 9806 5114
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18 November 2020

Dear Jury Members

RE: Aquatic Leisure Centre for Parramatta

I write with reference to the Aquatic Leisure Centre for Parramatta and the client-side consultation in the project to date following the submission of the DA.

As the client, Council's Community Services Directorate, of which Social and Community Services is a component unit, have been engaged in the process by the Property Development Group through a monthly Project Control Group and weekly client-side meetings.

The winning concept design by Grimshaw, Andrew Burges Architects and McGregor Coxall, originally costed at \$97M, has been valued engineered to the budget of \$77M which will be jointly funded by Council and the State Government at a cost of \$38.5M. Accordingly, a reduction in the scheme by \$20M has had a material impact on the functional, operational and financial performance of the facility.

Community Services and the Property Development Group are working together to ensure that the best possible outcome is achieved to minimise the impact of the reduced scheme and deliver a fit for use aquatic facility that is appropriate to the needs of the City of Parramatta.

We are supportive of the DA being submitted which was at 80% design and will continue to work together to finalise the scheme.

If the Design Excellence Jury has any further questions, my colleagues and I are happy to make ourselves available.

Regards,

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Carolyn Isaac-Dean

Acting Group Manager Social and Community Services

SUSTAINABILITY

- 1. Prior to the issue of any Construction Certificate, the following must be demonstrating to the satisfaction of private certifier/council:
 - a) The building is it end uses is to be delivered as an all-electric building as is not to be connected to the natural gas network.
 - b) The air conditioning and water heating must be serviced by an integrated central plant, which takes full advantage of centralisation for utilisation of waste heat and energy efficiency.
 - c) The building is to achieve a performance of at least 17.5% improvement upon the requirements of Section J of the NCC 2019 BCA, which is to be demonstrated using the JV3 method.
 - d) Horizontal roof lights are to be provided with a minimum of 95% shade from midday summer sun and to block no more that 30% winter sun between the hours of 9 am and 3pm.
 - e) Automated natural ventilation is to be provided though dedicated ventilation openings, which are not to include doors, and are strategically located to ensure effective distribution of natural ventilation throughout the following functional areas:
 - a. Program Room 1
 - b. Health Club
 - c. Program Room 2

The spaces are to be controlled independently and be capable of operating automatically in a mixed-mode arrangement with the air conditioning, with natural ventilation providing comfort in lieu of air conditioning for all hours where conditions are suitable.

- f) Photovoltaics shall be installed on-site with a maximum peak power (delivered A/C) of not less than 200kW.
- g) Water efficiency measures are to be installed to minimise the water usage of the pools must include:
 - a. Cellulite DE Perlite filtration to all pools
 - b. Pool covers installed to all pools.
- h) A dual reticulation (dual pipe) system is to be installed throughout the development to support the immediate or future connection to a recycled water network. If a recycled water network is not currently available, the design of the dual reticulation system is to be such that a future change-over to an alternative water supply can be achieved without significant civil or

building work, disruption or cost. To facilitate this, the dual reticulation system is to have:

- a. One reticulation system servicing drinking water uses, connected to the drinking supply, and
- b. One reticulation system servicing all non-drinking water uses.
- c. The non-drinking water system is to be supplied with harvested rainwater, with drinking water backup, until such time as an alternative water supply connection is available
- i) Rainwater collection and reuse is to be installed, with a storage capacity of 125kL and a roof collection area of not less than 1,800m2, to serve all nondrinking water uses through the dual reticulation system.
- j) Water efficient fixtures and fittings must be used throughout. Minimum WELS rating of 4 star for toilets, 6 star for tapware, 6 star for urinals, and 3/4 star (equal or less than 6.5 l/min) for showers are required.
- k) 95% of all timber is used on the project is to be FSC Certified under the Forest Stewardship Council certification system.
- I) Limit the use of PVC with minimum replacement of 60% (by cost) compared to standard practice.
- m) LED lighting to be provided throughout.