THE UNIVERSITY OF BRITISH COLUMBIA

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Friends of the Aquatic Centre & MacInnes Field
Grant Burnyeat
Doug Aldridge
Peter Rayher

SENT BY E-MAIL

Dear Grant, Doug and Peter

Re: **Response to Renovate & Expand Proposal for UBC Aquatic Centre**

Thank you for meeting with us over the past several months to present and review your Renovate & Expand proposal for the Aquatic Centre. We appreciate the considerable thought, time and passion that you have put into the proposal. As you know, we have spent quite some time considering and evaluating the various stages of the proposal. We have found it to be quite creative and with a variety of benefits. In the end however, we still recommend that building a new Aquatic Centre on the MacInnes Field site is the best approach to achieve the University's overall goals for the Gage South + Environs area and for a community aquatic centre that meets the competitive and recreational swimming needs of the campus community.

The following are our general comments on the Renovate & Expand proposal. We have also attached a detailed comparison of the Renovate & Expand proposal and the Build New plan as well as a detailed summary of the Build New program.

1) Cost – While the base cost for Renovate & Expand is estimated to be $2M less than Build New, this does not include the separate costs provided by the quantity surveyor (SSA) for renewal of existing change rooms ($1.65M) or replacement of the existing pool tank ($6.02M). Change room renewal is a fundamental requirement given the age and poor condition of finishes and systems and must be included in the project scope. The pool tank must at a minimum be re-tiled to address wear and known failures. The pool deck also needs to be re-tiled and re-sloped to address drainage issues that currently put the facility out of compliance with Health regulations, as noted in the Shape report. SSA has recommended a cost allowance of $2.7M for this minimum pool tank and deck work. When these requirements are included the Renovate & Expand cost is approximately $2.5M (or 7%) greater than Build New. The standard UBC financial requirement for

renewing an existing facility rather than building new is that the cost of renewal be less than 67% of building new. This threshold was developed in cooperation for the Provincial government for the UBC Renew program. The Renovate & Expand proposal does not meet this requirement. A summary of estimated full project costs is provided in the attached spreadsheet.

2) Program – The Renovate & Expand option provides greater recreational pool area than Build New and retains the diving tower and popular mezzanine seating area in the existing aquatic centre. The additional recreational pool area however exceeds program requirements needed to meet current and projected future demand. The Build New program has been designed to meet the competitive and recreational swimming needs of the campus community. The biggest demands have been for an international standard competition pool and for a separate, warm water leisure pool for families. The Build New plan will deliver a 50m pool that will meet international competition standards. Build New delivers more pool area for the separate, warm water leisure pool than Renovate & Expand. Build New can also provide shallow water area for children and seniors through the use of a movable floor in one half of the 50m pool. A 7.5m diving tower is included in the Build New base cost estimate and could potentially still be included however it is debatable whether this element is necessary given that UBC does not have a competitive diving program and the existing dive tower reportedly receives minimal recreational use (approx. 10 users per week). At a minimum, springboards (1m & 3m) can be included in the new 25m pool. This pool can also provide deep water for scuba diving lessons, synchronized swimming and underwater hockey. The planned 2.2m depth of the new 50m pool meets the requirement for water polo. The mezzanine seating area in the existing aquatic centre, which would be retained in the Renovate & Expand proposal, is a well used and desired element. We will explore the inclusion of a similar element in the Build New design.

3) Risk – Renovate & Expand presents a higher risk for construction cost and schedule overruns compared to Build New given unknown issues that are encountered when renovating existing buildings, or to quote from the Shape study: "Unexpected discoveries will necessarily be made when a 30+ year old building is opened up to further review". While cost allowances have been made in the estimated budget of the Renovate & Expand option for some of these risks, they do not cover major issues such as complete seismic upgrade, which arguably should be done anyway as a responsible measure, or full replacement of the pool tank should deterioration or cracking be discovered during construction. UBC spent considerable time and expense several years ago to address a major leak (500 gallons/day) in the indoor pool tank. Risk of cost and schedule overruns is a significant factor in our decision to opt for a Build New option.

4) Operational Disruption – The Renovate & Expand option would involve significant disruption to existing aquatic centre operations during construction. While a construction phasing plan is proposed, realistically we feel that the

facility would need to be closed for up to one year given safety and functional considerations. The Build New option would not involve any disruption to aquatic centre operations. This is a significant consideration given University commitments to students, varsity athletes, faculty, staff and UNA community members to provide continuing access to aquatic centre facilities.

5) Sustainability - Retention of the existing concrete structure has sustainability benefits however the extent of the required replacements (walls, roof, mechanical and electrical systems) plus the new building component in the Renovate & Expand option reduces the scale of this benefit compared with Build New. The Build New option also provides more flexibility to achieve a full range of operational sustainability objectives and maximize specific areas such as energy efficiency. For example, the simple rectangular design of the New Build pool tanks allows for easy use of energy saving pool covers, whereas the angled design of the existing pool tank makes use of a pool cover impractical. The Shape study did advocate that renewal was the responsible approach, however this opinion was made without any consideration of the renewal cost. UBC takes great pride in the sustainability benefits of the renewal projects that it has undertaken but in every case the decision to renew considered all aspects of sustainability – environmental, social and financial.

6) MacInnes Field – The Build New plan location allows replacement of MacInnes Field, at a similar size and more central location. The current MacInnes Field is 0.8 ha, with basic surrounding sidewalks and chain link fencing, and is lightly used most of the year. The replacement site for MacInnes Field in the Gage South & Environs draft plan could accommodate 0.8 ha grass and 2.5 m sidewalk on three sides, and wider sidewalk width to the north where the bus pedestrian traffic would flow toward the bus loop. The new site also allows flexibility for more generous sidewalks, benches or other design features and correspondingly reduced grass area, depending on what the community wants to pursue at the later design stage to make the field appealing and useable to people year round. MacInnes Field is not currently used for formal sports, and the emphasis will continue to be on informal recreational use. The family that contributed funds to the MacInnes Field improvements in the 1950's (much of that original field is now gone) are supportive of the proposed relocation and upgrade to the field.

7) Gage South Layout – The Renovate & Expand option results in a less efficient layout for the Gage South area and pushes bus pick-up and drop-off slightly further from the campus core. While the proximity of the existing Aquatic Centre to the New SUB provides convenient access to the academic community, access for the broader community is constrained. In the Build New option the main entry to the pool facility would be located on the southwest corner, which is very close to the existing pool facility while improving access from the North parkade and drop off on Student Union Boulevard.

After very careful consideration, our analysis - which was supported by independent cost consultants – shows that the Renovate & Expand option would result in costs that are 7% higher than the Build New option, and that the Renovate & Expand option would have higher risks, not deliver one of the most needed program elements (separate leisure pool) as fully as Build New, result in significant operational disruptions that have negative community and academic impacts, be neutral relative to Build New on sustainability matters, and result in lower land use efficiency.

You raised some excellent points about elements of the existing aquatic centre that should be retained in a new facility, principally the inclusion of mezzanine seating instead of pool deck seating. This can be explored in the design of the New Aquatic Centre. We would also like to include in the design of the new facility a plaque or wall acknowledging the history of pool facilities at UBC including recognition of those involved and the contribution they have made to varsity excellence and campus life. Our goal with the new Aquatic Centre is to create something special and unique that UBC can be proud of, that carries on the tradition set by the Friends and incorporates the best of your ideas.

We would welcome your input in the development of the new facility. If you would like to discuss our analysis and conclusions regarding the Renovate & Expand proposal, please do not hesitate to contact us.

Sincerely,

John Metras, P.Eng
Managing Director
Infrastructure Development

Nancy Knight
Associate Vice-President
Campus & Community Planning

2 Attachments

Cc: Board of Governors Community Planning Task Group c/o Reny Kahlon, Board of Governors Planning & Liaison Manager
Pierre Ouillet, Vice-President, Finance Resources & Operations
Stephen Owen, Vice President, External, Legal and Community Relations

UBC Aquatic Centre Re-Development

Comparison of Build New vs Renovate + Expand

CAPITAL COST	**Build New**	**Renovate + Expand**	**Comments**
Base Cost (Design and Construction)	$32,443,000	$30,428,000	QS estimate
Required Options:			
- demolition of Empire Pool	$275,000	Included in base	QS estimate
- movable floor (25m)	$575,000	$600,000	QS estimate
- bleachers for competition pool	Included in base	$200,000	QS estimate
- renovate existing change room block	Not applicable	$1,650,000	QS estimate
- minimum upgrade of existing pool tank and deck (tile & fixture replacement)	Not applicable	$2,700,000	QS estimate. See notes at bottom on condition of pool tank and deck.
Additional UBC Internal Costs:			
- IT/Security equipment	$200,000	$200,000	To current UBC standard
- project management fee (UBC PT)	$837,325	$894,450	2.5% of base cost + req'd options + IT/Security
- Infrastructure Impact Charges (IICs)	$109,196	$196,657	Net new building area x $5.05/ft2
- Retained Risk insurance fee	$291,993	$313,075	25% of construction contingency
- construction period financing charges	$750,000	$775,000	2.5% p.a. on outstanding balances
Taxes	$1,167,231	$1,246,863	3.4% UBC effective rate
Total Cost	**$36,648,745**	**$39,204,045**	
Optional Costs:			
Heavy timber construction for new structure	$925,000	$375,000	QS estimate
Remove & replace existing indoor pool tank	Not applicable	$3,321,000	QS estimate - Balance of cost for full replacement if required
Other interior renovations, balance of elec/mech code upgrades	Not applicable	$2,200,000	QS estimate - Unknown issues to be addressed if required

PROGRAM SCOPE	**Build New**	**Renovate + Expand**	**Existing**	**Comments**
Gross Building Area (m^2)	7,374	8,983	5,365	
Total Pool Surface Area (m^2)*	2,305	2,903	2,059	Existing incl. 766m^2 for outdoor pool
Maximum bather capacity (people)	1,437	1,800	1,263	Existing incl. 525 for outdoor pool
	Current peak usage of existing aquatic centre is <u>300</u> bathers. This is during the summer when kids camps are in session. Peak usage during school year is <u>95</u> bathers.			
50m competition tank	1 - 10 lane tank	1 - 10 lane tank	1 - 8 lane tank	
50m recreation tank		1 - 8 lane tank	1- 6 lane tank (outdoor - 55yd)	
25m recreation tank	1 - 10 lane tank			
25yd recreation tank	50m tank can be used	50m tank can be used	50m tank is used	
diving facilities	1m & 3m sprgbd	3m & 5m tower, 2 sprgbd	3m & 5m tower, 2 sprgbd	
spectator seating	yes	yes	yes	
leisure pool (separate pool to allow higher temperature for children)	1 - 400m^2	1 - 340m^2 (est)	no	
additional shallow water area	Movable pool floor	Existing pool - 170 m^2 (est) Movable pool floor	1 - 170m^2	
hot tub	1 - 70 people total	2 - 70 people total	1 - 8 people total	
sauna/steam room	yes	yes	yes	
deck control station for lifeguard staff	yes	yes	yes	
changerooms (mens, womens, family)	yes	yes	no family changeroom	
wet classrooms/multi-use rooms	yes - 2 rooms	yes - 1 room	yes - 1 room	
other classrooms/multi-use rooms		yes - 1 room 2nd floor		
on-deck kitchen for swim teams	yes	not shown	no	
meeting room for swim meet officials	yes	not shown	no	
on-deck storage	yes	yes	yes	
offices	yes	yes	yes	
entrance/lobby	yes	yes	yes	
retail space	yes	yes	no	
Overall program compliance	Meets required program for current and projected future demand	Exceeds required program in some areas; does not fully meet in other areas	Does not meet required program; no leisure pool or family changerooms; 50m pool does not meet FINA standards	

*Note that original Build New program included 581m^2 dive tank that was deemed unnecessary for program requirements and eliminated to reduce footprint of facility. The cost for this element is included in the $32.443M Build New base cost noted above. It's elimination allows for flexibility in the budget to include other elements such as a mezzanine viewing area. The program still includes springboards and deeper water for scuba lessons, synchronized swimming, etc.

OTHER KEY FACTORS	**Build New**	**Renovate + Expand**
Risk of project cost and schedule over-runs	Lower risk	Higher risk due to unknowns with pool tank condition, seismic and code upgrade requirements. See below for further notes on pool tank risks.
Disruption to aquatic centre activities during construction	None	Considerable disruption over extended time period likely, as some level of closure will realistically be required for safety and functional reasons
Sustainability	Easier to incorporate sustainable design measures in Build New but does not preserve existing concrete structure.	Retention of existing concrete structure is good however the extent of required replacements (walls, roof, mechanical and electrical systems) plus new building component in Renovate & Expand option reduces the scale of this benefit compared with Build New. Build New provides more flexibility to achieve full range of operational sustainability objectives and maximize specific areas such as energy efficiency. For example, the simple rectangular design of New Build pools allows for easy use of energy saving pool covers, whereas the angled design of existing pool makes use of a pool cover impractical.
Land use	Smaller footprint	Larger footprint
Gage South layout	Allows for more efficient layout	Results in less efficient layout and pushes bus pickup and dropoff further from the campus core
User access	Convenient access from New SUB, North Parkade and Student Union Boulevard (for dropoff)	Convenient access from New SUB for academic community, but less convenient for broader community.

FRIENDS POINTS	**UBC RESPONSE**
New facility has 10 - 50m lanes versus 18 - 50m lanes in the Friends option	The Build New facility has 10 - 25m lanes in addition to 10 - 50m lanes. 25m is the more typical distance for recreational use. The additional 8 - 50m lanes in the Renovate & Expand proposal are in the same tank as the 25yd recreation lanes. Both cannot be used at the same time. These existing 50m lanes are also not up to competition standards. Lane widths vary and start end is too shallow. Reversing start end would impact diving boards and tower. The existing tank also has poor air circulation at water level which is noticed by competitive and recreational swimmers. It is uncertain whether this can be fixed with renewal work.
New facility does not have 25 yard length for competition	50m competition pool in Build New can easily be adapted for 25yd use with planned movable bulkhead.
Friends option has 900m^2 more area	The proposed Build New facility is more than adequate to meet current and future demand.

New facility does not have a mezzanine viewing area	Inclusion of a similar feature will be explored for the Build New facility. There is sufficient room in the new facility budget to create a viewing area separated from the pool deck.
New facility does not have a 5m dive tower	Athletics has concluded that a dive tower is unnecessary. UBC does not have a competitive diving program and recreational use of existing towers is minimal (10 users per week). Dive tower could be accommadated in new pool if necessary. An allowance is included in Build New base cost. 1m & 3m springboards will be provided at a minimum in the new 25m pool.
New facility does not have deep water area for scuba diving, water polo, underwater hockey and syncronized swimming users	The Build New facility will have deep water area for these uses in the 25m pool. The depth is necessary to accommodate the springboards. Water polo can be accommodated in the 50m pool which has the necessary depth (>2m) as well as length (30m) required for water polo.
Friends option provides 2 leisure pools and 2 hot tubs	One leisure pool in Renovate & Expand option is part of existing pool tank, with same (lower) water temperature. Community users have asked for a separate higher temperature pool for kids. Build New leisure pool is larger than Renovate & Expand warm water leisure pool. Hot tub capacity is the same between the two schemes. Multiple tubs in Renovate & Expand option however require multiple filtration and mechanical systems which adds to operations & maintenance cost.
Friends option provides more shallow water for kids, seniors, etc	Friends option provides about 60m^2 less separate warm water leisure pool area, as per note above. Both Build New and Renovate & Expand can provide shallow water for swimming lessons and aquafit through use of movable pool floor.
New MacInnes Field will provide inadequate space for current demand	Build New plan location allows replacement of MacInnes Field, at a similar size and more central location. Current MacInnes Field is 0.8 ha, with basic surrounding sidewalks and chain link fencing, and is lightly used most of the year. New MacInnes Field could accommodate 0.8 ha grass and 2.5 m sidewalk on three sides, and wider sidewalk width to the north where the bus pedestrian traffic would flow toward the bus loop.
Friends option enables symbiotic relationship with New SUB, Alumni Ctr	It is true that existing aquatic centre is very close to the New SUB which would be quite convenient for the academic community. However, the current location does not provide as good access for the broader community as the Build New plan.
Friends proposal makes it easier to accommodate underground bus layover	No better than other options for transit facility.
Friends proposal provides convenient access to transit pickup/dropoff	Transit pickup and dropoff is further away from campus core under the Friends proposal than under the New Build proposal.
$13 million lower similar features estimate for Friends option	Friends analysis on this point combines potential cost savings with valuation of certain features, resulting in apples to oranges comparisons. Real question is what is required to be spent to achieve program requirements. Build New program is more cost-effective and has many other benefits.
Shape study indicated that retaining the existing facility is the most responsible approach from a sustainability perspective	Shape did not include a cost estimate for recommended renewal work on existing facility. Cost estimate was done much later by a separate consultant. UBC has extensive experience with renewal of existing facilities and always considers financial sustainability along with environmental and social sustainability when making a decision to renew or replace facilities.

NOTES ON CONDITION OF EXISTING INDOOR POOL TANK + DECK
- Multiple “soft spots” identified in tanks walls at the deep end where water has seeped through tile grout and gotten behind tile
- Hard to determine whether this water ingress has compromised the concrete tank.
- 3-4 years ago there was a water leak (500 gallons/day) through a significant crack in the concrete tank in the deep end; repair was difficult with several approaches considered in detail before a solution was reached.
- Tiles in the tank are wearing out (finish is gone in many locations), grout is wearing out and appears to have failed in locations of above noted soft spots
- Pool deck drainage does not comply with Health regulations due to low slopes, inadequate trench drain capacity and direction of flow into the pool instead of toward trench drains (as per Shape study)
- Minimum tank refurbishment should include replacement of all tiles and grout as well as replacement of underwater plumbing fittings (water supply sprayers and return water grates) and underwater light fixtures
- Minimum pool deck refurbishment should include replacement of all tiles, as well as revision to deck slopes and addition of new trench drain system to insure that water from the pool deck slopes toward deck drains rather than the pool (as per Shape study recommendation)
- Further pool tank renewal work or replacement will depend on condition of concrete tank and water supply lines beneath the tank (cannot assess at this point without invasive testing)

Mar 1, 2012

Proposed New UBC Aquatic Centre

UBC is proposing a new aquatic centre to provide student athletes with a state-of-the-art training facility and the larger campus community (students, faculty, staff and residents) with an on-campus recreational facility.

The proposed new UBC Aquatic Centre will include the following features:

Competition Pool (50m)

- 10 lane competition pool that meets FINA standards (International Swimming Federation)
- Moveable bulkhead to allow separation into two 25m pools
- Moveable floor in one half to accommodate different depth requirements for aquatic programs
    - Medium depth for recreational swimming (suitable for older children)
    - Shallower depth for aquafit and swimming lessons (adult/children)
- Suitable for water polo (2.2m depth)

Recreational Lap Pool (25m)

- 10 lane tank
- Springboard diving area (1m and 3m)
- Deep water area suitable for synchronized swimming, underwater hockey and scuba lessons
- Potential for moveable floor to accommodate different depth requirements for aquatic programs

Warm Water Leisure Pool

- Tots area with shallower depth
- Recreational features such as a slide, water cannons, lazy river

Pool User Amenities

- Family change rooms in addition to men's and women's change rooms
- Hot tub with seating for 70 people
- Sauna/steam room located on the pool deck for improved accessibility/safety

Safety

- On deck lifeguard control station
- Clear visibility of entire pool deck from any location
- First aid room

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Mechanical / Pool Operations

- Low chlorine sterilization system (i.e. UV or ozone)
- Ability to regulate temperature in each individual pool to suit user needs (e.g. warmer leisure pool for children)
- High efficiency air exchange system that will eliminate the chlorine smell from the building and provide a much healthier/enjoyable environment for the users
- Storage space connected to the pool deck

Accessibility

- Accessibility for people with disabilities (building and pool)
- Improved vehicle pick-up and drop-off access
- Improved access from North parkade and Student Union Boulevard

General Amenities

- Reception area with concession/coffee stand
- On deck seating area (for adults attending with older children)
- Meeting and office space for staff, swim teams and swim meet officials; staff change room
- Spectator seating for competition events, on deck and possibly mezzanine level
- Multi-use rooms connected to pool deck for birthday party rentals and scuba lesson dry component
- Kitchen connected to the pool deck for swim team use
- Retail space for aquatic supplies and light snacks, and space for physiotherapists and massage therapists

Sustainability

- High performance building envelope and glazing
- High efficiency mechanical and electrical system
- Heat recovery on exhaust air system
- Pool covers to reduce heat loss in non-operating hours
- Low flow water fixtures in change rooms
- Maximum natural light in natatorium

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