



YELLOWKNIFE **Aquatic Centre**

Concept Design Report
November 2020

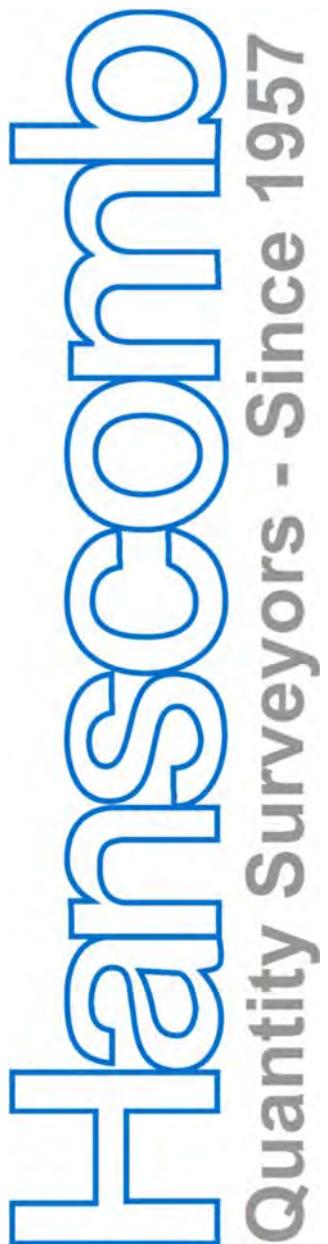
**Appendix F1:
Class D Cost Estimate**

CLASS D ESTIMATE

YELLOWKNIFE AQUATIC CENTRE POOL OPTIONS YELLOWKNIFE, NORTHWEST TERRITORIES

Prepared for:
Taylor Architecture Group

**October 28, 2020
(Revised Oct 29, 2020)**



October 28, 2020
(Revised Oct 29, 2020)

Ref # OTT5733

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Hanscomb
Quantity Surveyors - Since 1957



Attn: Melani Korver, Managing Associate

Re: Yellowknife Aquatic Centre, Pool Options, Yellowknife, Northwest Territories

Dear Ms Korver:

Please find attached our Class D Estimate for the Yellowknife Aquatic Centre, Pool Options in Yellowknife, Northwest Territories.

This Class D Estimate is intended to provide a realistic allocation of direct construction costs and is a determination of fair market value. Pricing shown reflects probable construction costs obtainable in the Yellowknife, Northwest Territories area on the effective date of this report and is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the work.

Hanscomb has prepared this estimate(s) in accordance with generally accepted principles and practices. Our general assumptions are included in Section 3 of this report and any exclusions are identified in Section 1.6. For quality assurance, this estimate has been reviewed by the designated Team Lead as signed below and Hanscomb staff are available and pleased to discuss the contents of this report with any interested party.

Requests for modifications of any apparent errors or omissions to this document must be made to Hanscomb within ten (10) days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted.

We trust our estimate is complete and comprehensive and provides the necessary information to allow for informed capital decisions for moving this project forward. Please do not hesitate to contact us if you have any questions or require additional information.

Yours truly,

Hanscomb Limited
Team Lead

A handwritten signature of Dale Stratton.

Dale Stratton
PQS
Technical Manager - Ottawa

Hanscomb Limited
Principal / Estimate Reviewer

A handwritten signature of Brian McBurney.

Brian McBurney
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Estimates:

- A - Detailed Elemental Estimate - 8 Lane 25m Pool
- B - Detailed Elemental Estimate - 8 Lane 50m Pool
- C - Detailed Elemental Estimate - 6 Lane 25m Pool
- D - Detailed Elemental Estimate - 6 Lane 50m Pool
- E - Life Cycle Costs

Documents and Drawings:

- AA - Documents and Drawings List
- AB - Representative Drawings

1. INTRODUCTION

1.1 PURPOSE

This Class D Estimate is intended to provide a realistic allocation of direct construction costs for the Yellowknife Aquatic Centre, Pool Options, located in Yellowknife, Northwest Territories, with the exception of the items listed in 1.6 Exclusions.

1.2 DESCRIPTION

The Yellowknife Aquatic Centre, Pool Options located in Yellowknife, Northwest Territories is comprised of the following key elements:

There are four design options for this design build project:

- a) *With a 25 m long eight-lane lap pool.*
- b) *With a 50 m long eight-lane lap pool.*
- c) *With a 25 m long six-lane lap pool.*
- d) *With a 25 m long six-lane lap pool.*

The project will have concrete spread footing foundations, secured with rock anchors to the exposed bedrock. The lowest floor will be reinforced concrete and the second floor will be reinforced concrete on metal deck, supported on structural steel framing. The metal deck of the roof will be sloped to allow for drainage and will be supported on structural steel. The cladding will be prefinished metal, with a premium for a material, yet to be selected. The windows will be triple glazed units, with an area of 25 percent of the gross cladding area. The doors and partitions will be typical for a building of this type. The scope of work includes but is not limited to mechanical and electrical systems, equipment, new concrete slabs, and new steel structure. No specific LEED designation is targeted but the project will meet all applicable codes and standards.

No work has been included for the existing Ruth Inch Memorial Pool.

1.3 METHODOLOGY

Hanscomb has prepared this estimate(s) in accordance with generally accepted principles and practices. Hanscomb staff are available to discuss its contents with any interested party.

From the documentation and information provided, quantities of all major elements were assessed or measured where possible and priced at rates considered competitive for a project of this type under a design-build form of contract in Yellowknife, Northwest Territories.

Pricing shown reflects probable construction costs obtainable in the Yellowknife, Northwest Territories area on the effective date of this report. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the work.

1.4 SPECIFICATIONS

For building components and systems where specifications and design details are not available, quality standards have been established based on discussions with the design team.

1. INTRODUCTION

1.5 ESTIMATE CLASSIFICATION AND COST PREDICTABILITY

Estimates are defined and classified based on the stage of a project's development and the level of information available at the time of the milestone estimate.

This Class D Estimate is considered to have an expected degree of accuracy of +/- 20-30%. In other words, bid results might vary by this amount if the construction budget were set at this milestone estimate.

At the initial stages of a contemplated project, the cost accuracy of the estimate is low as there may be little or no information available to inform a first high-level concept estimate or order of magnitude estimate. As a project nears design completion and is ready to be released to market for tender, the level of accuracy of the estimate is high as the detail is generally extensive and typically represents the information on which contractors will bid.

Milestone cost estimates or "checks" are recommended as the project design develops to keep track of scope and budget. Early detection of potential budget overruns will allow for remedial action before design and scope are locked in. The number of milestone estimates will depend on a project's size and schedule and cost predictability will improve as the design advances.

According to the Canadian Joint Federal Government/Industry Cost Predictability Taskforce, industry standards for estimate classification and cost estimate accuracy may be summarized as follows:

| COST ESTIMATE CLASSIFICATION SYSTEM | | | | | | |
|-------------------------------------|---------|---------------|----------------|---|--------------------|------------------|
| AACE | Class 5 | Class 4 | Class 3 | | Class 2 | Class 1 |
| DND | | | Indicative | | Substantive | |
| RAIC | OME | Sketch Design | Design Develop | | Contract Documents | Tender Documents |
| GOC | OME | D | C | B | | A |
| Design Documentation % Complete | | 12.5% | 25.0% | | 95.0% | 100.0% |
| Cost Estimate Accuracy (+/-%) | +/- 30% | +/- 20-30% | +/- 15-20% | | +/- 10-15% | +/- 5-10% |

Legend

| | |
|------|---|
| AACE | Association for the Advancement of Cost Engineering |
| DND | Department of National Defence |
| GOC | Government of Canada |
| RAIC | Royal Architectural Institute of Canada |
| OME | Order of Magnitude Estimate |

While the classification categories differ from one authority to the next, the overarching principle for cost predictability remains the same – as the level of detail and design development increases, so does the level of accuracy of the estimate.

1. INTRODUCTION

1.6 EXCLUSIONS

This Class D Estimate does not provide for the following, if required:

- Cost of contaminated soil, and designated substance removal
- Equipment beyond that identified in this estimate
- Escalation contingency beyond that identified in this estimate
- Financing costs
- COVID-19 implications (see separated letter issued)
- Loose furniture, furnishings and equipment
- Special audio, visual, security equipment or installation other than provision of empty conduit systems carried in electrical division
- Winter Construction (Concrete foundation and masonry heating & hoarding)
- Premium for the supply of cold weather concrete
- No work has been included for the existing Ruth Inch Memorial Pool.
- Value-added tax (e.g. Harmonized Sales Tax, Goods and Services Tax, or other)
- Premiums associated with Public-Private Partnership procurement model
- Soft Costs
 - Building permit
 - Development charges
 - Easement costs
 - Fund raising costs
 - Land acquisition costs and impost charges
 - Legal fees and expenses
 - Owner's staff and associated management
 - Preventative maintenance contracts
 - Relocation of existing facilities, including furniture and equipment
 - Right of way charges
 - Value-added tax (e.g. Harmonized Sales Tax, Goods and Services Tax, or other)
- Unexpected labour unavailability and productivity disruptions leading to delays and added costs
- Supply chain disruptions leading to delays and added costs

2. DOCUMENTATION

This Class D Estimate has been prepared from the documentation included in Appendix AA of this report.

All of the above documentation was received from Taylor Architecture Group and was supplemented with information gathered in meeting(s) and telephone conversations with the design team, as applicable.

Design changes and/or additions made subsequent to this issuance of the documentation noted above have not been incorporated in this report.

3. COST CONSIDERATIONS

3.1 COST BASE

All costs are estimated on the basis of competitive bids (a minimum of 4 design bid teams and at least 4 subcontractor bids for each trade) being received in July 2021 from bid teams and all major subcontractors and suppliers based on a design-build form of contract. If these conditions are not met, bids received could be expected to exceed this estimate.

3.2 UNIT RATES

The unit rates in the preparation of this Class D Estimate include labour and material, equipment, subcontractor's overheads and profit. Union contractors are assumed to perform the work with the fair wage policy in effect.

3.3 GENERAL REQUIREMENTS AND FEE

General Requirements and Fee cover the General Contractor's indirect costs which may include but not be limited to supervision, site set up, temporary utilities, equipment, utilities, clean up, etc. as covered in Division 1 General Conditions of the Contract Documents. It also includes the contractor's fees and should not be confused with Design or Consultant fees which are excluded from the Construction Costs and carried separately in the Owner's Total Project Costs.

3.4 DESIGN AND PRICING ALLOWANCE

An allowance of 12.0% has been included to cover design and pricing unknowns. This allowance is not intended to cover any program space modifications but rather to provide some flexibility for the designers and cost planners during the remaining contract document stages.

It is expected that this allowance amount will be absorbed into the base construction costs as the design advances. The amount by which this allowance is reduced corresponds to an increase in accuracy and detailed design information. Hanscomb recommends that careful consideration be made at each milestone estimate to maintain adequate contingency for this allowance.

As a project nears completion of design, Hanscomb recommends retaining some contingency for this allowance for the final coordination of documents.

3.5 ESCALATION ALLOWANCE

All costs are based on October 2020 dollars. An allowance of 10.0% per annum has been made for construction cost escalation that may occur between October 2020 and the anticipated construction start date for the project, November 2022. Escalation during construction is included in the unit rates.

For escalation, the budgeted amount will typically decline as the time to award nears. Forecasting escalation requires careful assessment of a continually changing construction market which at best is difficult to predict. The escalation rate should be monitored.

3. COST CONSIDERATIONS

3.6 PROPOSER DESIGN ALLOWANCE

An allowance of 13.0% has been included to cover the cost of providing construction documents for the construction of the facility, including preliminary approval stages as indicated in the design build contract.

3.7 CONSTRUCTION ALLOWANCE

An allowance of 5.0% has been made to cover construction (post contract) unknowns. This allowance, also known as the Post Contract Contingency (PCC), is intended to cover costs for change orders during construction that are not foreseeable. It is not intended to cover scope changes to the contract. The amount carried in a budget for this allowance is typically set at the initial planning stage and should be based on the complexity of the project and the probability of unknowns and retained risks.

3.8 CASH ALLOWANCE

Cash allowances are intended to allow the contractor to include in the bid price the cost for work that is difficult to fully scope at the time of tendering based on factors that are beyond the Owner and Prime Consultant's control. Cash allowances attempt to reduce the risks by dedicating a set amount for use against a certain cost that cannot yet be detailed. The Contractor is obligated to work as best as possible within the limitations of the Cash Allowance.

Examples of Cash Allowances include hardware, inspection and testing, site conditions, replacement of existing elements during demolition for renovation, hazardous materials abatement, signage, etc.

Any Cash Allowances if applicable are included either in the details of this estimate under the appropriate discipline or at the summary level.

3.9 TAXES

No provision has been made for the Harmonized Sales Tax. It is recommended that the owner make separate provision for HST in the project budget.

3.10 SCHEDULE

Pricing assumes a standard schedule of work appropriate to the size and scope of this project. Premiums for off-hour work, working in an operational facility, accelerated schedule, etc., if applicable, are identified separately in the body of the estimate.

3.11 STATEMENT OF PROBABLE COSTS

Hanscomb has no control over the cost of labour and materials, the contractor's method of determining prices, or competitive bidding and market conditions. This opinion of probable cost of construction is made on the basis of experience, qualifications and best judgment of the professional consultant familiar with the construction industry. Hanscomb cannot and does not guarantee that proposals, bids or actual construction costs will not vary from this or subsequent cost estimates.

3. COST CONSIDERATIONS

3.12 LIFE CYCLE COST ANALYSIS DEFINITIONS

Capital Costs – These are the costs to construct the facility before it goes into operation.

Operation & Maintenance Costs – These costs are the ongoing costs to operate and maintain the building during the 25-year life of the building. Items included within these costs are staffing, communications, custodial & basic maintenance, security, maintenance & repair, water & sewer, building envelope and built-in equipment repairs. These costs have been developed using historical data.

Energy Costs – These costs are the ongoing costs to heat and cool the building during the 25-year life of the building. These costs have been developed using historical data for similar types of buildings. We would be able to better quantify these costs as the design develops and the projected total energy use for the new building is quantified.

Cyclical Renewal Costs and Salvage Value – During the life of a building certain items need to be replaced for the building to continue to be used to its full potential. We have included for allowances for these renewals based on the current level of design. We will be able to split these costs into more details as the design develops. The salvage value is the inherent value of the items renewed during the life of the building at the end of the study period. For example, we are assuming that the interior finishes will be renewed every 8 years, so they would be renewed during years 8, 16 and 24. Since the interior finishes were just renewed in year 24 then at the end of the study period the interior finishes are brand new have still have significant inherent value and we deduct that costs from the overall cost.

3.13 ONGOING COST CONTROL

Hanscomb recommends that the Owner and design team carefully review this document, including line item description, unit prices, clarifications, exclusions, inclusions and assumptions, contingencies, escalation, and mark-ups. If the project is over budget, or if there are unresolved budgeting issues, alternative systems/schemes should be evaluated before proceeding into the next design phase.

It is recommended that a final updated estimate at the end of the design stage be produced by Hanscomb using Bid Documents to determine overall cost changes which may have occurred since the preparation of this estimate. The final updated estimate will address changes and additions to the documents, as well as addenda issued during the bidding process. Hanscomb cannot reconcile bid results to any estimate not produced from bid documents including all addenda.

This estimate does not constitute an offer to undertake the work, nor is any guarantee given that an offer, to undertake the work at the estimate(s) price, will subsequently be submitted by a construction contractor. Unless explicitly stated otherwise, it is assumed that competitive bids will be sought when tender documents have been completed. Any significant deviation between bids received and a pre-tender estimate prepared by Hanscomb from the same tender documents, should be evaluated to establish the possible cause(s).

3. COST CONSIDERATIONS

3.14 COVID-19 CLASS A ESTIMATE STATEMENT

If this project is expected to be tendered in the near future and because risks related to COVID-19 are a currently known but unquantifiable project risk at this time and therefore may not support a claim under any force majeure contract clause, Hanscomb expects general contractors to include in their bids an allowance for COVID-19 risk unless that risk is mitigated in the bid documents. Inclusion of an allowance for risk related to COVID-19 will increase the overall cost of the project, in some cases materially.

Hanscomb believes inclusion of these risks in bids could impact normal competitive market conditions resulting in a bid price increase by a minimum of 5 to 10% or in extreme situations as much as 10 to 20%.

We encourage building owners and Architect & Engineering teams to address this situation by providing clear directives to the bidders on risk mitigation for COVID-19 within the tender documents.

Items related to COVID-19 that may be included in bidders' risk allowances:

- Reduced site productivity due to:
 - lack of availability of labour for sickness and other reasons
 - delays related to recruiting or unavailability of replacement workers
 - social/physical distancing requirements
 - site shutdowns due to outbreaks among site workers
 - government mandated industry shutdowns
 - delays in delivery of materials and equipment to the site
 - unavailability of materials due to factory closure or shipping interruption
 - delays related to acquiring substitutions for unavailable materials
- Effect of reduced site productivity on project schedule
- Effect of project schedule delays on overheads

If any, or all of these risks are encountered the completion date for the project will be delayed.

4. GROSS FLOOR AND SITE DEVELOPED AREAS

Gross Floor Area

| 8 Lane Lap Pool | 25m Pool | 50m Pool |
|-------------------------------|-----------------|-----------------|
| Description | m2 | m2 |
| Main Floor | 3,615 | 4,470 |
| Second Floor | 1,083 | 996 |
| Total Gross Floor Area | 4,698 | 5,466 |

| 6 Lane Lap Pool | 25m Pool | 50m Pool |
|-------------------------------|-----------------|-----------------|
| Description | m2 | m2 |
| Main Floor | 3,471 | 4,196 |
| Second Floor | 1,083 | 996 |
| Total Gross Floor Area | 4,554 | 5,192 |

| Site Developed Area - 8 Lane | 25m Pool | 50m Pool |
|-------------------------------------|-----------------|-----------------|
| Description | m2 | m2 |
| Site | 10,315 | 11,170 |
| Building Footprint | 3,615 | 4,470 |
| Total Site Developed Area | 6,700 | 6,700 |

| Site Developed Area - 6 Lane | 25m Pool | 50m Pool |
|-------------------------------------|-----------------|-----------------|
| Description | m2 | m2 |
| Site | 10,171 | 10,896 |
| Building Footprint | 3,471 | 4,196 |
| Total Site Developed Area | 6,700 | 6,700 |

Site Developed Area is the area of the site less the foot-print area of the building.

The above areas have been measured in accordance with the Canadian Institute of Quantity Surveyors' Method of Buildings by Area and Volume.

5. CONSTRUCTION COST ESTIMATE SUMMARY

8 Lane 25m Lap Pool

| | | | |
|---|----------|-----------|---------------------|
| New Construction | 4,698 m2 | 5,116.37 | \$24,036,700 |
| Site Development | 6,700 m2 | 215.73 | \$1,445,400 |
| Demolition & Alterations | | | |
| Sub-total | 4,698 m2 | | \$25,482,100 |
| General Requirements | 23.0% | | \$5,860,900 |
| Fee | 10.0% | | \$3,134,300 |
| Sub-total | 4,698 m2 | 7,338.72 | \$34,477,300 |
| Design and Pricing Allowance | 12.0% | | \$4,137,300 |
| Escalation Allowance | 10.0% | | \$3,861,500 |
| Construction Allowance | 5.0% | | \$2,123,800 |
| Total Construction Cost | 4,698 m2 | 9,493.38 | \$44,599,900 |
| Proponents Design Allowance | 13.0% | | \$5,798,000 |
| Connecting the district heating supply | | | \$1,654,100 |
| Total Construction Cost - Including Design | 4,698 m2 | 11,079.61 | \$52,052,000 |

8 Lane 50m Lap Pool

| | | | |
|---|----------|-----------|---------------------|
| New Construction | 5,466 m2 | 5,330.31 | \$29,135,500 |
| Site Development | 6,700 m2 | 215.73 | \$1,445,400 |
| Demolition & Alterations | | | |
| Sub-total | 5,466 m2 | | \$30,580,900 |
| General Requirements | 23.0% | | \$7,033,600 |
| Fee | 10.0% | | \$3,761,500 |
| Sub-total | 5,466 m2 | 7,569.70 | \$41,376,000 |
| Design and Pricing Allowance | 12.0% | | \$4,965,100 |
| Escalation Allowance | 10.0% | | \$4,634,100 |
| Construction Allowance | 5.0% | | \$2,548,800 |
| Total Construction Cost | 5,466 m2 | 9,792.17 | \$53,524,000 |
| Proponents Design Allowance | 13.0% | | \$6,958,100 |
| Connecting the district heating supply | | | \$1,654,100 |
| Total Construction Cost - Including Design | 5,466 m2 | 11,367.76 | \$62,136,200 |

Varaiance \$10,084,200

NOTES

1. An allowance for connecting the district heating supply to new facility, an additional cost of \$1,654,100.
2. A separate letter regarding COVID-19 Concerns has been issued for this project and should be reviewed in conjunction with this report.
3. A public referendum is required for the approval of this project, the design build contractors will be required to hold their bid for up to five months. Any additional costs should be included in the escalation allowance carried with this estimate.

5. CONSTRUCTION COST ESTIMATE SUMMARY

6 Lane 25m Lap Pool

| | | | |
|---|----------|-----------|---------------------|
| New Construction | 4,554 m2 | 5,171.76 | \$23,552,200 |
| Site Development | 6,700 m2 | 215.73 | \$1,445,400 |
| Demolition & Alterations | | | |
| Sub-total | 4,554 m2 | | \$24,997,600 |
| General Requirements | 23.0% | | \$5,749,400 |
| Fee | 10.0% | | \$3,074,700 |
| Sub-total | 4,554 m2 | 7,426.81 | \$33,821,700 |
| Design and Pricing Allowance | 12.0% | | \$4,058,600 |
| Escalation Allowance | 10.0% | | \$3,788,000 |
| Construction Allowance | 5.0% | | \$2,083,400 |
| Total Construction Cost | 4,554 m2 | 9,607.31 | \$43,751,700 |
| Proponents Design Allowance | 13.0% | | \$5,687,700 |
| Connecting the district heating supply | | | \$1,654,100 |
| Total Construction Cost - Including Design | 4,554 m2 | 11,219.48 | \$51,093,500 |

6 Lane 50m Lap Pool

| | | | |
|---|----------|-----------|---------------------|
| New Construction | 5,192 m2 | 5,426.93 | \$28,176,600 |
| Site Development | 6,700 m2 | 215.73 | \$1,445,400 |
| Demolition & Alterations | | | |
| Sub-total | 5,192 m2 | | \$29,622,000 |
| General Requirements | 23.0% | | \$6,813,100 |
| Fee | 10.0% | | \$3,643,500 |
| Sub-total | 5,192 m2 | 7,719.30 | \$40,078,600 |
| Design and Pricing Allowance | 12.0% | | \$4,809,400 |
| Escalation Allowance | 10.0% | | \$4,488,800 |
| Construction Allowance | 5.0% | | \$2,468,800 |
| Total Construction Cost | 5,192 m2 | 9,985.67 | \$51,845,600 |
| Proponents Design Allowance | 13.0% | | \$6,739,900 |
| Connecting the district heating supply | | | \$1,654,100 |
| Total Construction Cost - Including Design | 5,192 m2 | 11,602.39 | \$60,239,600 |

Varaiance \$9,146,100

NOTES

1. An allowance for connecting the district heating supply to new facility, an additional cost of \$1,654,100.
2. A separate letter regarding COVID-19 Concerns has been issued for this project and should be reviewed in conjunction with this report.
3. A public referendum is required for the approval of this project, the design build contractors will be required to hold their bid for up to five months. Any additional costs should be included in the escalation allowance carried with this estimate.

4. UNDERSTANDING THE ELEMENTAL COST SUMMARY

The cost information prepared and presented by Quantity Surveyors is organized in a form referred to by Quantity Surveyors as an 'Elemental Cost Summary'. In this format, the more 'intuitive' elements (e.g. foundations, exterior cladding, plumbing, etc.) of a building are evaluated rather than materials or trades. Quantity Surveyors track this information consistently from project to project to benchmark not just the overall unit rate of a building type but also rates and ratios for key elements. Below are some of the key features on the Elemental Cost Summary you will find on **page A-1** of this estimate:

Building components are summarized as elements 'A2 Structure' and then sub-elements 'A23 Roof Construction'. This allows review of Roof Construction costs whether it is steel, concrete or wood - something difficult with a trade summary.

Ratio to GFA evaluates design efficiency and highlights outliers. It is arrived at by dividing the parametric quantity of a sub-element (i.e. overall exterior wall area) by the building gross floor area (GFA). A ratio greater than 0.600 for 'A32 Walls Above Grade' is considered high and may be due to articulation, courtyard design or high floor to floor heights.

The 'Unit Rate' is the blended rate of a sub-element's costs divided by its parametric quantity and allows a review of its reasonableness relative to bench-marks. A rate of \$559/m² indicates a good quality exterior wall cladding.

The last column expresses the cost of each element as a percentage of total construction cost. At 18.7% of total construction costs, mechanical and electrical systems are considered basic.

The 'Rate per SF' (m²) column converts costs for each element or sub-element to a \$/SF (m²) of GFA for comparison to benchmark rates. A rate of \$217/m² indicates basic electrical design.

General Requirements & Fee cover General Contractor's overheads (site set up, supervision, etc.) and contractor's expenses. Fee is not for Consultants.

Allowances are critical for estimates. Design & pricing compensates for a lack of detail early in design; escalation considers changes to labour & material; construction allowance is for unforeseen conditions; and, cash allowances offer flexibility for items difficult to detail at bid.

| SAMPLE ELEMENTAL SUMMARY | | | | | | |
|---|--------------|-----------------------|------------------|-------------------------|----------------------|------------------|
| Project | Location | Owner | Consultant | Report date | Page No. | Building Type |
| | | | | 19 Jul 2017 | A-1 | 420 |
| | | | | C.T. Index | 0.0 | |
| | | | | GFA | 1,582 m ² | |
| Element | Ratio to GFA | Elemental Cost | Elemental Amount | Rate per m ² | % | |
| A SHELL | | Quantity | Unit Rate | Sub-Total | Total | Sub-Total |
| A1 SUBSTRUCTURE | | 1,582 m ² | | 1,589,900 | 1,586.70 | 35.6 |
| A11 Foundations | 1.000 | 1,582 m ² | 158.03 | 250,000 | 158.03 | 4.9 |
| A12 Basement Excavation | 0.001 | 1 Nil | 0.00 | 0 | 0.00 | |
| A13 Special Conditions | 0.001 | 1 Sum | 0.00 | 0 | 0.00 | |
| A2 STRUCTURE | | | | 250,000 | | |
| A21 Lowest Floor Construction | 1.000 | 1,582 m ² | 64.82 | 102,700 | 64.92 | 296.33 |
| A23 Roof Construction | | 1 Nil | 0.00 | 0 | 0.00 | |
| A23 Roof Construction | 1.013 | 1,582 m ² | 226.53 | 356,100 | 231.42 | |
| A3 EXTERIOR ENCLOSURE | | | | 1,111,100 | | |
| A31 Walls Below Grade | 0.001 | 1 Nil | 0.00 | 0 | 0.00 | |
| A32 Walls Above Grade | 1.006 | 1,582 m ² | 559.22 | 612,600 | 557.42 | 21.6 |
| A33 Windows & Entrances | 0.003 | 4 Lvs | 3,075.00 | 13,100 | 8.28 | |
| A34 Roof Coverings | 1.013 | 1,582 m ² | 720.22 | 352,800 | 223.01 | |
| A35 Projections | 1.000 | 1,582 m ² | 83.63 | 132,300 | 83.63 | |
| B INTERIORS | | 1,582 m ² | | 1,033,400 | 653.22 | 20.1 |
| B1 PARTITIONS & DOORS | | | | 382,900 | 242.04 | 7.4 |
| B11 Partitions | 1.504 | 2,380 m ² | 105.29 | 250,600 | 158.41 | |
| B12 Doors | 0.038 | 60 Lvs | 2,205.00 | 132,300 | 83.63 | |
| B2 FINISHES | | | | 398,400 | 251.83 | 7.7 |
| B21 Floor Finishes | 1.000 | 1,582 m ² | 75.35 | 119,200 | 75.35 | |
| B22 Ceiling Finishes | 1.000 | 1,582 m ² | 91.28 | 144,400 | 91.28 | |
| B23 Wall Finishes | 2.314 | 3,660 m ² | 38.83 | 134,800 | 65.21 | |
| B3 FITTINGS & EQUIPMENT | | | | 252,100 | 159.36 | 4.9 |
| B31 Fittings & Fixtures | 1.000 | 1,582 m ² | 159.36 | 252,100 | 159.36 | |
| B32 Equipment | 1.000 | 1,582 m ² | 0.00 | 0 | 0.00 | |
| B33 Elevators | 0.001 | 1 Nil | 0.00 | 0 | 0.00 | |
| B34 Escalators | 0.001 | 1 Nil | 0.00 | 0 | 0.00 | |
| C SERVICES | | 1,582 m ² | | 964,400 | 609.61 | 18.7 |
| C1 MECHANICAL | | | | 621,100 | 392.60 | 12.1 |
| C11 Plumbing & Drainage | 1.000 | 1,582 m ² | 145.26 | 228,800 | 145.26 | |
| C12 Fire Protection | 1.000 | 1,582 m ² | 31.04 | 46,100 | 31.04 | |
| C13 HVAC | 1.000 | 1,582 m ² | 170.35 | 265,500 | 170.35 | |
| C14 Controls | 1.000 | 1,582 m ² | 45.95 | 72,700 | 45.95 | |
| C2 ELECTRICAL | | | | 343,300 | 217.00 | 6.7 |
| C21 Services & Distribution | 1.000 | 1,582 m ² | 42.54 | 67,300 | 42.54 | |
| C22 Lighting, Devices & Heating | 1.000 | 1,582 m ² | 116.81 | 164,800 | 115.81 | |
| C23 Systems & Ancillaries | 1.000 | 1,582 m ² | 57.65 | 91,200 | 57.65 | |
| NET BUILDING COST - EXCLUDING SITE | | | | | | |
| | | | | \$ 3,827,700 | 2,419.53 | 74.4 |
| D SITE & ANCILLARY WORK | | 1,582 m ² | | 799,800 | 505.56 | 15.5 |
| D1 SITE WORK | | | | 799,800 | 505.56 | 15.5 |
| D11 Site Development | 6.541 | 10,348 m ² | 48.71 | 504,100 | 318.65 | |
| D12 Mechanical Site Services | 0.001 | 1 Sum | 167,400.00 | 167,400 | 105.82 | |
| D13 Electrical Site Services | 0.001 | 1 Sum | 128,300.00 | 128,300 | 81.10 | |
| D2 ANCILLARY WORK | | | | 0 | 0.00 | 0.0 |
| D21 Demolitions | 0.001 | 1 Nil | 0.00 | 0 | 0.00 | |
| D22 Alterations | 0.001 | 1 Nil | 0.00 | 0 | 0.00 | |
| NET BUILDING COST - INCLUDING SITE | | | | | | |
| | | | | \$ 4,627,500 | 2,925.09 | 89.9 |
| Z1 GENERAL REQUIREMENTS & FEE | | 8.0% | | 520,100 | 326.76 | 10.1 |
| Z11 General Requirements | | 3.0% | | 370,200 | 234.01 | |
| Z12 Fee | | 1 Sum | | 145,900 | 94.75 | |
| TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES | | | | | | |
| | | | | \$ 5,147,600 | 3,253.68 | 100.0 |
| Z2 ALLOWANCES | | 10.0% | | 536,600 | 566.18 | |
| Z21 Design & Pricing Allowance | | 2.5% | | 514,800 | 325.41 | |
| Z22 Escalation Allowance | | 3.0% | | 141,600 | 89.51 | |
| Z23 Construction Allowance | | 1 Sum | | 174,100 | 110.05 | |
| Z24 Cash Allowances | | 1 Sum | | 100,000.00 | 63.21 | |
| TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES | | | | | | |
| | | | | \$ 5,078,100 | 3,842.04 | |
| VALUE ADDED TAX (GST/HST) | | 0.0 % | | 0 | 0.00 | |
| TOTAL CONSTRUCTION ESTIMATE | | | | \$ 5,078,100 | \$ 3,842.04 | |

J2351-21

CLASS C ESTIMATE

Hanscomb

The power of the Elemental Cost Summary lies in the ability to compare costs with similar building types as well as alternatives without losing sight of the cost associated with that element of the building. By using this format consistently across all projects, Quantity Surveyors can better understand why the 'roof covering' element may be more on this project, if it's fulfilling the same function as a similar project.

**YELLOWKNIFE AQUATIC CENTRE
POOL OPTIONS
YELLOWKNIFE, NORTHWEST TERRITORIES**

Report Date : October 2020

**Appendix
A - Detailed Elemental Estimate - 8 Lane 25m Pool**

| Project | Yellowknife Aquatic Centre | | | | | Report date | 29 Oct 2020 | |
|---|----------------------------|----------------|--------------|------------------|---------------|-------------|-------------|-------|
| Location | 25m Pool, 8 Lane | | | | | Page No. | 1 | |
| Owner | Yellowknife, NWT | | | | | Bldg Type | 550 | |
| Consultant | City of Yellowknife | | | | | C.T. Index | 0.0 | |
| | Taylor Architecture Group | | | | | GFA | 4,698 m2 | |
| ELEMENTAL COST SUMMARY | | | | | | | | |
| Element | Ratio to GFA | Elemental Cost | | Elemental Amount | | Rate per m2 | | % |
| | | Quantity | Unit rate | Sub-Total | Total | Sub-Total | Total | |
| A SHELL | | 4,698 m2 | | | 10,767,600 | | 2,291.95 | 31.2 |
| A1 SUBSTRUCTURE | | | | | 1,906,900 | | 405.90 | 5.5 |
| A11 Foundations | 0.770 | 3,615 m2 | 264.00 | 952,800 | | 202.81 | | |
| A12 Basement Excavation | 0.770 | 3,615 m2 | 214.00 | 773,500 | | 164.64 | | |
| A13 Special Conditions | 0.000 | 1 Sum | 180,600.00 | 180,600 | | 38.44 | | |
| A2 STRUCTURE | | | | | 4,789,600 | | 1,019.50 | 13.9 |
| A21 Lowest Floor Construction | 0.770 | 3,615 m2 | 430.00 | 1,552,700 | | 330.50 | | |
| A22 Upper Floor Construction | 0.230 | 1,083 m2 | 710.00 | 768,800 | | 163.64 | | |
| A23 Roof Construction | 0.770 | 3,615 m2 | 683.00 | 2,468,100 | | 525.35 | | |
| A3 EXTERIOR ENCLOSURE | | | | | 4,071,100 | | 866.56 | 11.8 |
| A31 Walls Below Grade | | | | | 0 | | 0.00 | |
| A32 Walls Above Grade | 0.410 | 1,930 m2 | 686.00 | 1,323,100 | | 281.63 | | |
| A33 Windows & Entrances | 0.110 | 534 m2 | 2,474.00 | 1,321,300 | | 281.25 | | |
| A34 Roof Coverings | 0.770 | 3,615 m2 | 390.00 | 1,409,900 | | 300.11 | | |
| A35 Projections | 0.000 | 1 Sum | 16,800.00 | 16,800 | | 3.58 | | |
| B INTERIORS | | 4,698 m2 | | | 4,866,100 | | 1,035.78 | 14.1 |
| B1 PARTITIONS & DOORS | | | | | 1,047,700 | | 223.01 | 3.0 |
| B11 Partitions | 0.630 | 2,948 m2 | 301.00 | 886,300 | | 188.65 | | |
| B12 Doors | 0.010 | 45 No | 3,587.00 | 161,400 | | 34.36 | | |
| B2 FINISHES | | | | | 1,997,900 | | 425.27 | 5.8 |
| B21 Floor Finishes | 1.000 | 4,698 m2 | 166.00 | 781,300 | | 166.30 | | |
| B22 Ceiling Finishes | 1.000 | 4,698 m2 | 144.00 | 676,700 | | 144.04 | | |
| B23 Wall Finishes | 1.710 | 8,054 m2 | 67.00 | 539,900 | | 114.92 | | |
| B3 FITTINGS & EQUIPMENT | | | | | 1,820,500 | | 387.51 | 5.3 |
| B31 Fittings & Fixtures | 1.000 | 4,698 m2 | 99.00 | 464,000 | | 98.77 | | |
| B32 Equipment | 1.000 | 4,698 m2 | 23.00 | 106,500 | | 22.67 | | |
| B33 Pool Equipment | 0.000 | 1 Sum | 1,130,000.00 | 1,130,000 | | 240.53 | | |
| B34 Elevator | 0.000 | 1 No | 120,000.00 | 120,000 | | 25.54 | | |
| C SERVICES | | 4,698 m2 | | | 8,403,000 | | 1,788.63 | 24.4 |
| C1 MECHANICAL | | | | | 6,259,500 | | 1,332.38 | 18.2 |
| C11 Pool Plumbing & Drainage | 1.000 | 4,698 m2 | 380.00 | 1,785,000 | | 379.95 | | |
| C12 Plumbing & Drainage | 1.000 | 4,698 m2 | 183.00 | 861,400 | | 183.35 | | |
| C13 Fire Protection | 1.000 | 4,698 m2 | 68.00 | 318,400 | | 67.77 | | |
| C14 HVAC | 1.000 | 4,698 m2 | 603.00 | 2,834,700 | | 603.38 | | |
| C15 Controls | 1.000 | 4,698 m2 | 98.00 | 460,000 | | 97.91 | | |
| C2 ELECTRICAL | | | | | 2,143,500 | | 456.26 | 6.2 |
| C21 Service & Distribution | 1.000 | 4,698 m2 | 181.00 | 850,000 | | 180.93 | | |
| C22 Lighting, Devices & Heating | 1.000 | 4,698 m2 | 172.00 | 810,000 | | 172.41 | | |
| C23 Systems & Ancillaries | 1.000 | 4,698 m2 | 103.00 | 483,500 | | 102.92 | | |
| NET BUILDING COST - EXCLUDING SITE | | | | | \$ 24,036,700 | | 5,116.37 | 69.7 |
| D SITE & ANCILLARY WORK | | 4,698 m2 | | | 1,445,400 | | 307.66 | 4.2 |
| D1 SITE WORK | | | | | 1,445,400 | | 307.66 | 4.2 |
| D11 Site Development | 1.430 | 6,700 m2 | 108.00 | 725,400 | | 154.41 | | |
| D12 Mechanical Site Services | 0.000 | 1 Sum | 600,000.00 | 600,000 | | 127.71 | | |
| D13 Electrical Site Services | 0.000 | 1 Sum | 120,000.00 | 120,000 | | 25.54 | | |
| D2 ANCILLARY WORK | | | | | 0 | | 0.00 | 0.0 |
| D21 Demolitions | | | | | | | 0.00 | |
| NET BUILDING COST - INCLUDING SITE | | | | | \$ 25,482,100 | | 5,424.03 | 73.9 |
| Z1 GENERAL REQUIREMENTS & FEE | | | | | 8,995,200 | | 1,914.69 | 26.1 |
| Z11 General Requirements | | 23.0 % | | 5,860,900 | | 1,247.53 | | |
| Z12 Fee | | 10.0 % | | 3,134,300 | | 667.16 | | |
| TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES | | | | | \$ 34,477,300 | | 7,338.72 | 100.0 |
| Z2 ALLOWANCES | | | | | 10,122,600 | | 2,154.66 | |
| Z21 Design & Pricing Allowance | | 12.0 % | | 4,137,300 | | 880.65 | | |
| Z22 Escalation Allowance | | 10.0 % | | 3,861,500 | | 821.95 | | |
| Z23 Construction Allowance | | 5.0 % | | 2,123,800 | | 452.06 | | |
| TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES | | | | | \$ 44,599,900 | | 9,493.38 | |
| - VALUE ADDED TAX (GST/HST) | | | | | 0 | | 0.00 | |
| Value Added Tax (GST/HST) | | 0.0 % | | | | | 0.00 | |
| TOTAL CONSTRUCTION ESTIMATE | | | | | \$ 44,599,900 | \$ | 9,493.38 | |

| A1 SUBSTRUCTURE | | Quantity | Unit rate | Amount | Remarks |
|------------------------|--|----------------------|----------------------------|---------------|----------------|
| A11 Foundations | | | | | |
| 1 | Allowance for clearing, grubbing | 3,615 m ² | 8.00 | 28,900 | |
| 2 | Reinforced concrete perimeter strip footing, 250 x 800mm | 254 m | 215.00 | 54,600 | |
| 3 | Reinforced concrete interior strip footing, 250 x 800mm, allow | 58 m | 215.00 | 12,500 | |
| 4 | Reinforced concrete perimeter pad footing, 250 x 1000 x 1000mm | 33 no. | 420.00 | 13,900 | |
| 5 | Reinforced concrete interior pad footing, 250 x 1000 x 1000mm | 39 no. | 420.00 | 16,400 | |
| 6 | Reinforced concrete frost walls, 200mm thick | 589 m ² | 610.00 | 359,300 | |
| 7 | Reinforced concrete walls, 200mm thick, to interior | 131 m ² | 610.00 | 79,900 | |
| 8 | Reinforced concrete pilasters, 500 x 500mm | 33 no. | 1,400.00 | 46,200 | |
| 9 | Reinforced concrete piers, 500 x 500mm | 35 no. | 1,540.00 | 53,900 | |
| 10 | Allowance for 200mm rigid insulation, frost protection to perimeter footings | 460 m ² | 180.00 | 82,800 | |
| 11 | Allowance for waterproofing and parging to o/s face of foundation walls | 589 m ² | 85.00 | 50,100 | |
| 12 | Allowance for 100mm rigid insulation to i/s face of frost walls | 589 m ² | 100.00 | 58,900 | |
| 13 | Reinforced concrete elevator pad c/w pit walls, etc., | 1 no. | 10,000.00 | 10,000 | |
| 14 | Allowance for drainage system | 3,615 m ² | 23.60 | 85,400 | |
| | - Allowance for sump pits | 4 no. | 5,000.00 | 20,000 | |
| | - Allowance for perimeter drainage | 254 m | 45.00 | 11,400 | |
| | - Allowance for interior drainage system | 1,200 m | 45.00 | 54,000 | |
| A11 Foundations | | TOTAL : \$ | 3,615 m² | 263.57 | 952,800 |

| A1 SUBSTRUCTURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| A12 Basement Excavation | | | | |
| 1 Allowance for soil excavation to expose bedrock, working spaces, excess material removed from site | 5,600 m3 | 45.00 | 252,000 | |
| 2 Allowance for rock excavation as required for pool depth, services, etc., used on site as fill | 1,500 m3 | 150.00 | 225,000 | |
| 3 Backfill with Engineered fill below main floor | 1,900 m3 | 85.00 | 161,500 | |
| 4 Backfill with excavated material to o/s of foundations | 3,000 m3 | 45.00 | 135,000 | |
| A12 Basement Excavation | TOTAL : \$ | 3,615 m2 | 213.97 | 773,500 |

| A1 SUBSTRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|-------------------|----------------|
| A13 Special Conditions | | | | |
| 1 Allowance for removal of loose rock, boulders | | allow | 8,000 | |
| 2 Allowance for dewatering foundations | | allow | 12,000 | |
| 3 Allowance for rock anchors to footings | 404 no. | 150.00 | 60,600 | |
| - Strip footings, 1200mm c/c | 260 no. | 150.00 | 39,000 | |
| - Pad footings, 2 per pad | 144 no. | 150.00 | 21,600 | |
| 4 Allowance for selective blasting and rock removal | | allow | 100,000 | |
| A13 Special Conditions | TOTAL : \$ | 1 Sum | 180,600.00 | 180,600 |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|----------|-----------|------------------|---------|
| A21 Lowest Floor Construction | | | | |
| 1 Reinforced concrete slab on grade, allow 150mm thick c/w 10M @ 200mm c/c | 2,658 m2 | 215.00 | 571,500 | |
| 2 Allowance for slab thickening at masonry partitions, trench drains, etc., | | allow | 30,000 | |
| 3 Lap pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 525 m2 | 150.00 | 78,800 | |
| 4 Extra over to above for ramp | 20 m2 | 200.00 | 4,000 | |
| 5 Reinforced concrete walls to above, 300mm thick, average | 95 m2 | 730.00 | 69,400 | |
| 6 Leisure pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 369 m2 | 150.00 | 55,400 | |
| 7 Extra over to above for ramp | 64 m2 | 150.00 | 9,600 | |
| 8 Reinforced concrete walls to above, 300mm thick, average | 218 m2 | 730.00 | 159,100 | |
| 9 Extra over to above for curves, features, etc., | 72 m2 | 100.00 | 7,200 | |
| 10 Allowance for features | | allow | 10,000 | |
| 11 Therapy pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 63 m2 | 150.00 | 9,500 | |
| 12 Extra over to above for ramp and stairs | 16 m2 | 400.00 | 6,400 | |
| 13 Reinforced concrete walls to above, 300mm thick, average | 66 m2 | 730.00 | 48,200 | |
| 14 Extra over to above for curves, features, etc., | 60 m2 | 100.00 | 6,000 | |
| Carried Forward : | | | 1,065,100 | |

| A2 STRUCTURE | | Quantity | Unit rate | Amount | Remarks |
|---|---|---------------------|-------------------|-----------|---------|
| A21 Lowest Floor Construction (Continued) | | | Brought Forward : | 1,065,100 | |
| 15 | Extra over for waterproofing compound to pool areas | 1 sum | 18,000.00 | 18,000 | |
| | - Allowance for compound added to concrete mix | 1 sum | 12,000.00 | 12,000 | |
| | - Allowance for filling pool to activate compound, including removal | 1 sum | 6,000.00 | 6,000 | |
| 16 | Allowance for 10 mil vapour barrier, 100mm h/d rigid insulation, compacted granular | 3,615 m2 | 115.00 | 415,700 | |
| 17 | Allowance for 10 mil vapour barrier, 100mm h/d rigid insulation to pool walls | 379 m2 | 100.00 | 37,900 | |
| 18 | Steel stair down to service room level | 2 flight | 8,000.00 | 16,000 | |
| A21 Lowest Floor Construction | | TOTAL : \$ 3,615 m2 | 429.52 | 1,552,700 | |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|---------------------|-----------|---------|---------|
| A22 Upper Floor Construction | | | | |
| 1 Concrete topping on metal deck c/w welded wire mesh | 903 m2 | 180.00 | 162,500 | |
| 2 Concrete topping on metal deck c/w welded wire mesh, tiered construction to spectator seating | 180 m2 | 240.00 | 43,200 | |
| 3 Structural support to above | | | | |
| - OWSJ, beams, columns | 1,083 m2 | 486.70 | 527,100 | |
| - Miscellaneous metals, connections, consumables | 59,565 kg | 8.00 | 476,500 | |
| | 5,957 kg | 8.50 | 50,600 | |
| 4 Concrete filled metal pan stairs c/w painted steel pipe handrails, public access | 2 flight | 12,000.00 | 24,000 | |
| 5 Concrete filled metal pan stairs c/w painted steel pipe handrails to upper service space | 1 flight | 12,000.00 | 12,000 | |
| A22 Upper Floor Construction | TOTAL : \$ 1,083 m2 | 709.88 | 768,800 | |

**Yellowknife Aquatic Centre
25m Pool, 8 Lane
Yellowknife, NWT**

Report date : October 2020

Page No. : 8

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|------------------|
| A23 Roof Construction | | | | |
| 1 38mm acoustical metal deck, galvanized to Natatorium | 2,048 m2 | 52.00 | 106,500 | |
| 2 Structural support to above, galvanized | | | | |
| - OWSJ, beams, columns | 2,048 m2 | 746.20 | 1,528,300 | |
| - Miscellaneous metals, connections, consumables | 153,600 kg | 9.00 | 1,382,400 | |
| - Miscellaneous metals, connections, consumables | 15,360 kg | 9.50 | 145,900 | |
| 3 38mm metal deck, other areas | 1,567 m2 | 45.00 | 70,500 | |
| 4 Structural support to above | | | | |
| - OWSJ, beams, columns | 1,567 m2 | 486.80 | 762,800 | |
| - Miscellaneous metals, connections, consumables | 86,185 kg | 8.00 | 689,500 | |
| - Miscellaneous metals, connections, consumables | 8,619 kg | 8.50 | 73,300 | |
| 5 Roof overhang, measured with projections | | nil | | |
| A23 Roof Construction | TOTAL : \$ | 3,615 m2 | 682.74 | 2,468,100 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|--|----------------------|----------------------------|---------------|------------------|
| A32 Walls Above Grade | | | | |
| 1 EW1, 22 gauge corrugated metal on 17mm furring, weather barrier, 50+100mm rigid insulation, Z-girts, self adhesive a/v barrier c/w primer, 13mm sheathing, 152mm wind bearings studs, 16mm type X gypsum bd. | 1,351 m ² | 625.00 | 844,400 | |
| 2 EW2, premium cladding system, 17mm furring, weather barrier, 50+100mm rigid insulation, Z-girts, self adhesive a/v barrier c/w primer, 13mm sheathing, 152mm wind bearings studs, 16mm type X gypsum bd. | 579 m ² | 710.00 | 411,100 | |
| 3 Allowance for sealants, foamed-in-place insulation, exterior painting, etc., | 1,930 m ² | 35.00 | 67,600 | |
| A32 Walls Above Grade | TOTAL : \$ | 1,930 m² | 685.54 | 1,323,100 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|---------------|-----------------|------------------|
| A33 Windows & Entrances | | | | |
| 1 Triple glazed windows and curtain wall in fibreglass framing | 508 m2 | 2,500.00 | 1,270,000 | |
| 2 Insulated hollow metal doors c/w frames, standard hardware | 4 no. | 3,000.00 | 12,000 | |
| 3 Glazed aluminum doors c/w frames, standard hardware | 4 no. | 4,200.00 | 16,800 | |
| 4 Overhead door to service room, manually operated | 1 no. | 11,000.00 | 11,000 | |
| 5 Allowance for hardware upgrades | 8 no. | 1,000.00 | 8,000 | |
| 6 Push button barrier free door operators | 1 no. | 3,500.00 | 3,500 | |
| 7 Louvres, by mechanical | | nil | | |
| A33 Windows & Entrances | TOTAL : \$ | 534 m2 | 2,474.34 | 1,321,300 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|------------------|
| A34 Roof Coverings | | | | |
| 1 4mm MBM cap, 3mm MBM base, 3mm board mech. fastened, sloped insulation, 250mm rigid insulation, air barrier, 13mm primed deck boards | 3,615 m2 | 390.00 | 1,409,900 | |
| 2 Roof overhang, measured with projections | | nil | | |
| A34 Roof Coverings | TOTAL : \$ | 3,615 m2 | 390.01 | 1,409,900 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|------------------|---------------|
| A35 Projections | | | | |
| 1 Allowance for galvanized exit stair c/w guard, handrails, foundations, at service entry | 1 flight | 10,000.00 | 10,000 | |
| 2 Dock bumpers at service o/h doors | 1 set | 2,000.00 | 2,000 | |
| 3 Allowance for concrete fill steel bollards | 8 no. | 600.00 | 4,800 | |
| A35 Projections | TOTAL : \$ | 1 Sum | 16,800.00 | 16,800 |

| B1 PARTITIONS & DOORS | | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|------------------|----------------|----------------|
| B11 Partitions | | | | | |
| 1 Typical partition, 16mm type X gypsum board both sides | | 1,660 m2 | 210.00 | 348,600 | |
| 2 Typical partition, service areas | | 958 m2 | 270.00 | 258,700 | |
| 3 Elevator shaft walls | | 81 m2 | 330.00 | 26,700 | |
| 4 Glazed partition to lobby, etc., | | 249 m2 | 800.00 | 199,200 | |
| 5 Allowance for firestopping, solid blocking, acoustical sealants, etc., | | 2,948 m2 | 18.00 | 53,100 | |
| 6 Operable partitions, not indicated | | | nil | | |
| B11 Partitions | TOTAL : \$ | 2,948 m2 | 300.64 | 886,300 | |

| B1 PARTITIONS & DOORS | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|-----------------|----------------|
| B12 Doors | | | | |
| 1 Hollow metal doors c/w frames, standard hardware | 28 no. | 2,400.00 | 67,200 | |
| 2 Glazed aluminum doors c/w frames, standard hardware | 6 no. | 3,300.00 | 19,800 | |
| 3 Solid core wood doors c/w frames, standard hardware | 8 no. | 2,300.00 | 18,400 | |
| 4 Hollow metal doors to crawl space c/w frames, standard hardware | 3 no. | 2,500.00 | 7,500 | |
| 5 Push button barrier free door operators | 1 no. | 3,500.00 | 3,500 | |
| 6 Allowance for hardware upgrades | 45 no. | 1,000.00 | 45,000 | |
| B12 Doors | TOTAL : \$ | 45 No | 3,586.67 | 161,400 |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|----------------------------|---------------|----------------|---------|
| B21 Floor Finishes | | | | |
| 1 Ceramic tile | 991 m2 | 225.00 | 223,000 | |
| 2 Allowance for special tiles, markings to above | | allow | 30,000 | |
| 3 Pools, ceramic tile c/w membrane | 957 m2 | 431.60 | 413,000 | |
| - Pool bottom | 957 m2 | 225.00 | 215,300 | |
| - Pool walls | 379 m2 | 225.00 | 85,300 | |
| - Edge tile c/w gutter | 227 m | 460.00 | 104,400 | |
| - Allowance for stair, lane, etc., special tile, warning strips, etc. | | allow | 8,000 | |
| 4 Sheet flooring | 395 m2 | 110.00 | 43,500 | |
| 5 Rubber tile flooring | 130 m2 | 120.00 | 15,600 | |
| 6 Sealer/hardener to exposed concrete | 1,276 m2 | 40.00 | 51,000 | |
| 7 Epoxy flooring c/w cove base | 47 m2 | 110.00 | 5,200 | |
| B21 Floor Finishes | TOTAL : \$ 4,698 m2 | 166.30 | 781,300 | |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|----------------|
| B22 Ceiling Finishes | | | | |
| 1 Paint to exposed structure | 1,326 m2 | 50.00 | 66,300 | |
| 2 Finish to Natatorium, allow | 894 m2 | 250.00 | 223,500 | |
| 3 Suspended gypsum board c/w paint finish | 1,200 m2 | 135.00 | 162,000 | |
| 4 Suspended acoustic tile system | 1,281 m2 | 60.00 | 76,900 | |
| 5 Extra over to above for painted gypsum board bulkheads | 800 m2 | 160.00 | 128,000 | |
| 6 Allowance for features, clouds, acoustical baffles, etc., | | allow | 20,000 | |
| B22 Ceiling Finishes | TOTAL : \$ | 4,698 m2 | 144.04 | 676,700 |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|--------------|----------------|
| B23 Wall Finishes | | | | |
| 1 Exposed cedar to steam room | 75 m2 | 135.00 | 10,100 | |
| 2 Allowance for epoxy paint | 600 m2 | 75.00 | 45,000 | |
| 3 Ceramic tile to washrooms, changerooms, etc., | 486 m2 | 190.00 | 92,300 | |
| 4 Wall covering to Natatorium, c/w 300mm high ceramic base | 1,255 m2 | 85.00 | 106,700 | |
| 5 Paint | 5,646 m2 | 40.00 | 225,800 | |
| 6 Intumescent paint to exposed structure to Natatorium, change rooms, etc., | | allow | 40,000 | |
| 7 Allowance for other finishes, upgrades, etc., | | allow | 20,000 | |
| B23 Wall Finishes | TOTAL : \$ | 8,054 m2 | 67.04 | 539,900 |

| B3 FITTINGS & EQUIPMENT | | Quantity | Unit rate | Amount | Remarks |
|------------------------------------|---|-------------------|------------------|---------------|----------------|
| B31 Fittings & Fixtures | | | | | |
| 1 | Washroom accessories, allowance | 1 sum | 30,000.00 | 30,000 | |
| 2 | Washroom and change room partitions, solid phenolic | 1 sum | 58,000.00 | 58,000 | |
| 3 | Millwork | 1 sum | 160,000.00 | 160,000 | |
| 4 | Manually operated blinds, exterior | 508 m2 | 100.00 | 50,800 | |
| 5 | Lockers | 1 sum | 53,000.00 | 53,000 | |
| 6 | Interior signage and wayfinding | 1 sum | 40,000.00 | 40,000 | |
| 7 | Exterior signage | 1 sum | 50,000.00 | 50,000 | |
| 8 | Janitor accessories | 1 sum | 2,200.00 | 2,200 | |
| 9 | Corner guards, protection, etc., | 1 sum | 20,000.00 | 20,000 | |
| B31 Fittings & Fixtures | | TOTAL : \$ | 4,698 m2 | 98.77 | 464,000 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|--------------|----------------|
| B32 Equipment | | | | |
| 1 Wet sauna equipment | 1 sum | 15,000.00 | 15,000 | |
| 2 Turnstile, security system | 1 sum | 17,000.00 | 17,000 | |
| 3 Security grille to canteen | 1 sum | 4,000.00 | 4,000 | |
| 4 Mechanical access doors | 1 sum | 7,000.00 | 7,000 | |
| 5 Spectator seating | 180 m2 | 352.80 | 63,500 | |
| - Guard, including wheel chair areas | 41 m | 1,200.00 | 49,200 | |
| - Bench seating | 130 m | 110.00 | 14,300 | |
| 6 Other equipment and loose furniture, not included | | nil | | |
| 7 Gym and fitness equipment, not included | | nil | | |
| B32 Equipment | TOTAL : \$ | 4,698 m2 | 22.67 | 106,500 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|--------------|---------------------|------------------|
| B33 Pool Equipment | | | | |
| 1 Therapy pool | 1 sum | 230,000.00 | 230,000 | |
| 2 Lap pool, 25m | 1 sum | 150,000.00 | 150,000 | |
| 3 Leisure pool | 1 sum | 600,000.00 | 600,000 | |
| 4 Pool equipment miscellaneous, mobilization, commissioning, shop drawings, testing, etc., | 1 sum | 150,000.00 | 150,000 | |
| B33 Pool Equipment | TOTAL : \$ | 1 Sum | 1,130,000.00 | 1,130,000 |

**Yellowknife Aquatic Centre
25m Pool, 8 Lane
Yellowknife, NWT**

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| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|------------|------------|------------|---------|
| B34 Elevator 1 Two stop front loading elevator | 1 no. | 120,000.00 | 120,000 | |
| B34 Elevator | TOTAL : \$ | 1 No | 120,000.00 | 120,000 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|---|----------|------------|-----------|---------|
| C11 Pool Plumbing & Drainage | | | | |
| 1 25m lane lap pool water supply & filtration system (1200gpm) | 1 sum | 430,000.00 | 430,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 400,000.00 | 400,000 | |
| - Allow for pool water system controls | 1 sum | 20,000.00 | 20,000 | |
| 2 Leisure pool water supply & filtration system | 1 sum | 635,000.00 | 635,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 600,000.00 | 600,000 | |
| - Allow for pool water system controls | 1 sum | 25,000.00 | 25,000 | |
| 3 Therapy pool water supply & filtration system | 1 sum | 230,000.00 | 230,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 200,000.00 | 200,000 | |
| - Allow for pool water system controls | 1 sum | 20,000.00 | 20,000 | |
| 4 Pool drainage and backwash system | 1 sum | 250,000.00 | 250,000 | |
| - Under ground pool drainage and back wash piping, deck drains, skimmers, pumps etc.(all 3 pools) | 1 sum | 250,000.00 | 250,000 | |
| 5 Pool chemical treatment - Calcium hyochlorite feed system | 1 sum | 55,000.00 | 55,000 | |
| 6 Pool chemical treatment - Sodium bisulphate feed system | 1 sum | 30,000.00 | 30,000 | |
| 7 Pool chemical supply, 1 year | 1 sum | 75,000.00 | 75,000 | |
| 8 Pool chemical treatment - CO2 injection system, not included | | nil | | |
| Carried Forward : | | | 1,705,000 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|---------------------|-------------------|-----------|---------|
| C11 Pool Plumbing & Drainage (Continued) | | Brought Forward : | 1,705,000 | |
| 9 Pool plumbing & drainage miscellaneous such as mobilization, start-up, cleaning, drawings , manuals, tagging, identification, testing, verification etc. | 1 sum | 80,000.00 | 80,000 | |
| C11 Pool Plumbing & Drainage | TOTAL : \$ 4,698 m2 | 379.95 | 1,785,000 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| C12 Plumbing & Drainage | | | | |
| 1 Plumbing fixtures, ultra low flow & low flush | 53 no. | 1,724.50 | 91,400 | |
| - Water closet | 23 no. | 2,200.00 | 50,600 | |
| - Lavatory c/w faucet | 12 no. | 1,600.00 | 19,200 | |
| - Shower head & balancing valve | 18 no. | 1,200.00 | 21,600 | |
| 2 Domestic water (hot & cold) | 1 sum | 200,000.00 | 200,000 | |
| - Water entry assembly | 1 sum | 10,000.00 | 10,000 | |
| - DCW, DHWS & DHWR piping, pumps, insulation, fixture connections etc. | 1 sum | 140,000.00 | 140,000 | |
| - DHW pre heating using HX from backwashing or draining pools | 1 sum | 20,000.00 | 20,000 | |
| - DHW water heaters | 1 sum | 30,000.00 | 30,000 | |
| 3 Sanitary drainage | 1 sum | 240,000.00 | 240,000 | |
| - Above & under ground SAN drainage and vent piping, floor drains, cleanouts, sump pumps etc. | 1 sum | 240,000.00 | 240,000 | |
| 4 Grey water harvesting from pool change rooms fixtures | 1 sum | 80,000.00 | 80,000 | |
| - Allow for filters, UV treatment, tanks, pumps, piping, valves, connections etc. | 1 sum | 80,000.00 | 80,000 | |
| 5 Storm drainage | 1 sum | 100,000.00 | 100,000 | |
| - Allow for roof drains, RWLs, insulation, U/G drainage piping, cleanouts etc. | 1 sum | 100,000.00 | 100,000 | |
| 6 Fuel oil supply for back up heating boilers | 1 sum | 120,000.00 | 120,000 | |
| - Allow for 9600G outdoor oil tank, piping, valves, filters, pumps, day tanks & connections to boilers | 1 sum | 120,000.00 | 120,000 | |
| 7 Plumbing & drainage miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification, testing, verification etc. | 1 sum | 30,000.00 | 30,000 | |
| C12 Plumbing & Drainage | TOTAL : \$ | 4,698 m2 | 183.35 | 861,400 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|--------------|----------------|
| C13 Fire Protection | | | | |
| 1 Incoming FW supply c/w backflow preventer fed directly from City water main | 1 sum | 15,000.00 | 15,000 | |
| 2 FW main header, zone valves, drain connections etc. | 1 sum | 12,000.00 | 12,000 | |
| 3 Fire department connection c/w dip check valve & piping | 1 sum | 10,000.00 | 10,000 | |
| 4 Fire water/sprinkler main piping | 1 sum | 40,000.00 | 40,000 | |
| 5 Sprinkler system c/w piping & heads | 4,698 m2 | 45.00 | 211,400 | |
| 6 Allow for fire extinguishers | 1 sum | 10,000.00 | 10,000 | |
| 7 Fire protection miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification, testing, verification etc. | 1 sum | 20,000.00 | 20,000 | |
| 8 Note:- Fire pump not included | | nil | | |
| C13 Fire Protection | TOTAL : \$ | 4,698 m2 | 67.77 | 318,400 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|---|----------|--------------|-----------|---------|
| C14 HVAC | | | | |
| 1 Building heating | 1 sum | 907,700.00 | 907,700 | |
| - Note:- Primary heating source from existing biomass district heating system, expected load 2079kW | | incl. | | |
| - Oil burning boiler back up system c/w two 1250kW boilers | 1 sum | 250,000.00 | 250,000 | |
| - Allow for plate & frame heat exchanger, pumps, piping, valves, insulation, terminals & connection | 4,698 m2 | 140.00 | 657,700 | |
| 2 Pool water heating | 1 sum | 100,000.00 | 100,000 | |
| - Dedicated heat exchanger for 25m competition pool, 0.3 deg.C./hr, allow | 1 no. | 30,000.00 | 30,000 | |
| - Dedicated heat exchanger for leisure pool, 1.1 deg.C./hr, allow | 1 no. | 15,000.00 | 15,000 | |
| - Dedicated heat exchanger for therapy pool, 2.8 deg.C./hr, allow | 1 no. | 25,000.00 | 25,000 | |
| - Allow for piping and connections to base building heating system | 1 sum | 30,000.00 | 30,000 | |
| 3 Dedicated cooling for server room | 1 sum | 12,000.00 | 12,000 | |
| - Split air conditioner c/w outdoor condenser | 1 sum | 12,000.00 | 12,000 | |
| 4 Natatorium (pool area & all associated decks) ventilation | 1 sum | 1,000,000.00 | 1,000,000 | |
| - Air handling unit AHU-1(OA) 30,500 l/s c/w SF, EF, heat recovery, 318 kW HC, 71kW DX cooling | 1 no. | 680,000.00 | 680,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 320,000.00 | 320,000 | |
| 5 Administration, multipurpose rooms and canteen ventilation | 1 sum | 300,000.00 | 300,000 | |
| - Air handling unit AHU-2(ERV) c/w heat recovery, HW heting & DX cooling, 3600 l/s | 1 no. | 140,000.00 | 140,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 160,000.00 | 160,000 | |
| 6 2nd floor office ventilation | 1 sum | 100,000.00 | 100,000 | |
| - Air handling unit AHU-3 c/w HW heting & DX cooling, 1600 l/s | 1 no. | 40,000.00 | 40,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 60,000.00 | 60,000 | |
| Carried Forward : | | | 2,419,700 | |

| C1 MECHANICAL | | Quantity | Unit rate | Amount | Remarks |
|-----------------------------|--|----------------------------|--------------------------|------------------|---------|
| C14 HVAC (Continued) | | | Brought Forward : | 2,419,700 | |
| 7 | Canteen dedicated exhaust system - Allow for exhaust fan, ductwork, hoods, louvers, fire wrap etc. | 1 sum | 40,000.00 | 40,000 | |
| | | 1 sum | 40,000.00 | 40,000 | |
| 8 | Change rooms and washrooms exhaust - Allow for EA ductwork, grilles, tie into main pool area heat recovery systems | 1 sum | 120,000.00 | 120,000 | |
| | | 1 sum | 120,000.00 | 120,000 | |
| 9 | Miscellaneous exhaust and ventilation - Allow for chlorine room exhaust and ventilation - Allow for service spaces exhaust and ventilation | 1 sum | 75,000.00 | 75,000 | |
| | | 1 sum | 15,000.00 | 15,000 | |
| | | 1 sum | 60,000.00 | 60,000 | |
| 10 | HVAC miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification etc. | 1 sum | 40,000.00 | 40,000 | |
| 11 | Testing, adjusting, balancing and commissioning | 1 sum | 140,000.00 | 140,000 | |
| C14 HVAC | | TOTAL : \$ 4,698 m2 | 603.38 | 2,834,700 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--------------------------|---------------------|------------|---------|---------|
| C15 Controls | | | | |
| 1 Allow for DDC controls | 1 sum | 460,000.00 | 460,000 | |
| C15 Controls | TOTAL : \$ 4,698 m2 | 97.91 | 460,000 | |

| C2 ELECTRICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| C21 Service & Distribution | | | | |
| 1 Service & distribution, 800A 347/600V 3Ph 4w | 1 sum | 400,000.00 | 400,000 | |
| 2 Standby diesel generator, 500kW 347/600V 3Ph inside building c/w 800A ATS, load bank etc | 1 sum | 400,000.00 | 400,000 | |
| 3 Electrical Misc. | 1 sum | 50,000.00 | 50,000 | |
| - Permits, fees & inspection | 1 sum | 8,000.00 | 8,000 | |
| - Drawings & manuals | 1 sum | 10,000.00 | 10,000 | |
| - Sealing & fire-stopping | 1 sum | 2,000.00 | 2,000 | |
| - Mobilization | 1 sum | 30,000.00 | 30,000 | |
| C21 Service & Distribution | TOTAL : \$ | 4,698 m2 | 180.93 | 850,000 |

| C2 ELECTRICAL | | Quantity | Unit rate | Amount | Remarks |
|---------------------------------|--------------------------------------|---------------------|-----------|---------|---------|
| C22 Lighting, Devices & Heating | | | | | |
| 1 | Light fixtures | 4,698 m2 | 100.00 | 469,800 | |
| 2 | Exit & emergency lighting | 1 sum | 50,300.00 | 50,300 | |
| 3 | Lighting controls | 4,698 m2 | 15.00 | 70,500 | |
| 4 | Power outlets, devices & connections | 4,698 m2 | 35.00 | 164,400 | |
| 5 | Connections to mechanical equipment | 55 no. | 1,000.00 | 55,000 | |
| 6 | Electric heating, not included | | nil. | | |
| 7 | Under water lighting, not included | | nil. | | |
| C22 Lighting, Devices & Heating | | TOTAL : \$ 4,698 m2 | 172.41 | 810,000 | |

| C2 ELECTRICAL | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|----------------|
| C23 Systems & Ancillaries | | | | |
| 1 FA system, addressable 2 stage c/w battery charger, standby batteries, connection to DACT & monitored by local ULC approved monitoring company, 4698m2 @ \$25 | 1 sum | 118,500.00 | 118,500 | |
| 2 Combined telephone & PA system | 1 sum | 45,000.00 | 45,000 | |
| 3 Communication system (voice/data) | 1 sum | 65,000.00 | 65,000 | |
| 4 Door access controls system | 1 sum | 36,000.00 | 36,000 | |
| 5 CCTV system | 1 sum | 70,000.00 | 70,000 | |
| 6 Intrusion alarm system | 1 sum | 40,000.00 | 40,000 | |
| 7 CableTV system | 1 sum | 36,000.00 | 36,000 | |
| 8 Clock system, allow | 1 sum | 5,000.00 | 5,000 | |
| 9 Staff alarm system, allow | 1 sum | 5,000.00 | 5,000 | |
| 10 Sound system, allow | 1 sum | 36,000.00 | 36,000 | |
| 11 Misc. systems | 1 sum | 27,000.00 | 27,000 | |
| 12 Lightning protection system, not included | | nil. | | |
| C23 Systems & Ancillaries | TOTAL : \$ | 4,698 m2 | 102.92 | 483,500 |

| D1 SITE WORK | | Quantity | Unit rate | Amount | Remarks |
|-----------------------------|---|----------------------------|---------------|----------------|---------|
| D11 Site Development | | | | | |
| 1 | Allowance for clearing, grubbing, cut and fill, as required | 6,700 m2 | 35.00 | 234,500 | |
| 2 | Asphalt paving | 4,300 m2 | 85.00 | 365,500 | |
| 3 | Demarkation to above | | allow | 12,000 | |
| 4 | Allowance for concrete deck at entrance | 60 m2 | 240.00 | 14,400 | |
| 5 | Allowance restoration, soft landscaping | 2,300 m2 | 30.00 | 69,000 | |
| 6 | Allowance for restoration at new service connections | | allow | 30,000 | |
| D11 Site Development | | TOTAL : \$ 6,700 m2 | 108.27 | 725,400 | |

| D1 SITE WORK | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|--------------|-------------------|----------------|
| D12 Mechanical Site Services | | | | |
| 1 Water supply (fire & domestic) | 1 sum | 250,000.00 | 250,000 | |
| - Allow for water supply from city water main c/w U/G piping, valves, valve chambers, connections etc. | 1 sum | 250,000.00 | 250,000 | |
| 2 Sanitary drainage disposal | 1 sum | 150,000.00 | 150,000 | |
| - Allow for new manholes, underground piping, connection to existing mains etc. | 1 sum | 150,000.00 | 150,000 | |
| 3 Storm drainage disposal | 1 sum | 200,000.00 | 200,000 | |
| - Relocate manhole and culvert at north end of the site | 1 allow | 80,000.00 | 80,000 | |
| - Allow for new manholes, catchbasins, underground piping & connections | 1 sum | 120,000.00 | 120,000 | |
| 4 Fuel oil storage for building heating - included in C12 Plumbing & Drainage | | incl. | | |
| 5 District heating supply to new aquatic centre (heating load 2079kW) - allow for 150mm dia. U/G HWS/HWR pre-insulated piping, valves, connection to existing biomass district heating system etc. - \$800,000 separate budget | | nil | | |
| D12 Mechanical Site Services | TOTAL : \$ | 1 Sum | 600,000.00 | 600,000 |

| D1 SITE WORK | Quantity | Unit rate | Amount | Remarks |
|--|------------|-----------|------------|---------|
| D13 Electrical Site Services | | | | |
| 1 Incoming O/H primary power c/w Utility TX, pad, grounding, rock excavation etc | 1 sum | 55,000.00 | 55,000 | |
| 2 Incoming U/G secondary power | 1 sum | 25,000.00 | 25,000 | |
| 3 Incoming telecom services (CableTV, Internet, Tel) | 1 sum | 20,000.00 | 20,000 | |
| 4 Site lighting | 1 sum | 20,000.00 | 20,000 | |
| D13 Electrical Site Services | TOTAL : \$ | 1 Sum | 120,000.00 | 120,000 |

**Appendix
B - Detailed Elemental Estimate - 8 Lane 50m Pool**

| Project | Yellowknife Aquatic Centre | | | | | Report date | 29 Oct 2020 | |
|---|----------------------------|----------------|--------------|------------------|----------------------|-------------|-----------------|-------|
| Location | 50m Pool, 8 Lane | | | | | Page No. | 1 | |
| Owner | Yellowknife, NWT | | | | | Bldg Type | 550 | |
| Consultant | City of Yellowknife | | | | | C.T. Index | 0.0 | |
| | Taylor Architecture Group | | | | | GFA | 5,466 m2 | |
| ELEMENTAL COST SUMMARY | | | | | | | | |
| Element | Ratio to GFA | Elemental Cost | | Elemental Amount | | Rate per m2 | | % |
| | | Quantity | Unit rate | Sub-Total | Total | Sub-Total | Total | |
| A SHELL | | 5,466 m2 | | | 12,468,100 | | 2,281.03 | 30.1 |
| A1 SUBSTRUCTURE | | | | | 2,187,900 | | 400.27 | 5.3 |
| A11 Foundations | 0.820 | 4,470 m2 | 254.00 | 1,136,400 | | 207.90 | | |
| A12 Basement Excavation | 0.820 | 4,470 m2 | 193.00 | 862,000 | | 157.70 | | |
| A13 Special Conditions | 0.000 | 1 Sum | 189,500.00 | 189,500 | | 34.67 | | |
| A2 STRUCTURE | | | | | 5,699,600 | | 1,042.74 | 13.8 |
| A21 Lowest Floor Construction | 0.820 | 4,470 m2 | 415.00 | 1,853,200 | | 339.04 | | |
| A22 Upper Floor Construction | 0.180 | 996 m2 | 714.00 | 710,900 | | 130.06 | | |
| A23 Roof Construction | 0.820 | 4,470 m2 | 701.00 | 3,135,500 | | 573.64 | | |
| A3 EXTERIOR ENCLOSURE | | | | | 4,580,600 | | 838.02 | 11.1 |
| A31 Walls Below Grade | | | | | 0 | | 0.00 | |
| A32 Walls Above Grade | 0.380 | 2,063 m2 | 686.00 | 1,414,200 | | 258.73 | | |
| A33 Windows & Entrances | 0.100 | 568 m2 | 2,476.00 | 1,406,300 | | 257.28 | | |
| A34 Roof Coverings | 0.820 | 4,470 m2 | 390.00 | 1,743,300 | | 318.94 | | |
| A35 Projections | 0.000 | 1 Sum | 16,800.00 | 16,800 | | 3.07 | | |
| B INTERIORS | | 5,466 m2 | | | 6,677,800 | | 1,221.70 | 16.1 |
| B1 PARTITIONS & DOORS | | | | | 1,672,700 | | 306.02 | 4.0 |
| B11 Partitions | 0.670 | 3,682 m2 | 412.00 | 1,516,100 | | 277.37 | | |
| B12 Doors | 0.010 | 42 No | 3,729.00 | 156,600 | | 28.65 | | |
| B2 FINISHES | | | | | 2,977,000 | | 544.64 | 7.2 |
| B21 Floor Finishes | 1.000 | 5,466 m2 | 235.00 | 1,284,600 | | 235.02 | | |
| B22 Ceiling Finishes | 1.000 | 5,466 m2 | 195.00 | 1,063,800 | | 194.62 | | |
| B23 Wall Finishes | 1.800 | 9,817 m2 | 64.00 | 628,600 | | 115.00 | | |
| B3 FITTINGS & EQUIPMENT | | | | | 2,028,100 | | 371.04 | 4.9 |
| B31 Fittings & Fixtures | 1.000 | 5,466 m2 | 95.00 | 517,400 | | 94.66 | | |
| B32 Equipment | 1.000 | 5,466 m2 | 20.00 | 110,700 | | 20.25 | | |
| B33 Pool Equipment | 0.000 | 1 Sum | 1,280,000.00 | 1,280,000 | | 234.17 | | |
| B34 Elevator | 0.000 | 1 No | 120,000.00 | 120,000 | | 21.95 | | |
| C SERVICES | | 5,466 m2 | | | 9,989,600 | | 1,827.59 | 24.1 |
| C1 MECHANICAL | | | | | 7,594,600 | | 1,389.43 | 18.4 |
| C11 Pool Plumbing & Drainage | 1.000 | 5,466 m2 | 414.00 | 2,263,000 | | 414.01 | | |
| C12 Plumbing & drainage | 1.000 | 5,466 m2 | 166.00 | 907,400 | | 166.01 | | |
| C13 Fire Protection | 1.000 | 5,466 m2 | 68.00 | 372,000 | | 68.06 | | |
| C14 HVAC | 1.000 | 5,466 m2 | 650.00 | 3,552,200 | | 649.87 | | |
| C15 Controls | 1.000 | 5,466 m2 | 91.00 | 500,000 | | 91.47 | | |
| C2 ELECTRICAL | | | | | 2,395,000 | | 438.16 | 5.8 |
| C21 Service & Distribution | 1.000 | 5,466 m2 | 169.00 | 925,000 | | 169.23 | | |
| C22 Lighting, Devices & Heating | 1.000 | 5,466 m2 | 171.00 | 935,000 | | 171.06 | | |
| C23 Systems & Ancillaries | 1.000 | 5,466 m2 | 98.00 | 535,000 | | 97.88 | | |
| NET BUILDING COST - EXCLUDING SITE | | | | | \$ 29,135,500 | | 5,330.31 | 70.4 |
| D SITE & ANCILLARY WORK | | 5,466 m2 | | | 1,445,400 | | 264.43 | 3.5 |
| D1 SITE WORK | | | | | 1,445,400 | | 264.43 | 3.5 |
| D11 Site Development | 1.230 | 6,700 m2 | 108.00 | 725,400 | | 132.71 | | |
| D12 Mechanical Site Services | 0.000 | 1 Sum | 600,000.00 | 600,000 | | 109.77 | | |
| D13 Electrical Site Services | 0.000 | 1 Sum | 120,000.00 | 120,000 | | 21.95 | | |
| D2 ANCILLARY WORK | | | | | 0 | | 0.00 | 0.0 |
| D21 Demolitions | | | | | | 0.00 | | |
| NET BUILDING COST - INCLUDING SITE | | | | | \$ 30,580,900 | | 5,594.75 | 73.9 |
| Z1 GENERAL REQUIREMENTS & FEE | | | | | 10,795,100 | | 1,974.95 | 26.1 |
| Z11 General Requirements | | 23.0 % | | 7,033,600 | | 1,286.79 | | |
| Z12 Fee | | 10.0 % | | 3,761,500 | | 688.16 | | |
| TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES | | | | | \$ 41,376,000 | | 7,569.70 | 100.0 |
| Z2 ALLOWANCES | | | | | 12,148,000 | | 2,222.47 | |
| Z21 Design & Pricing Allowance | | 12.0 % | | 4,965,100 | | 908.36 | | |
| Z22 Escalation Allowance | | 10.0 % | | 4,634,100 | | 847.80 | | |
| Z23 Construction Allowance | | 5.0 % | | 2,548,800 | | 466.30 | | |
| TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES | | | | | \$ 53,524,000 | | 9,792.17 | |
| - VALUE ADDED TAX (GST/HST) | | | | | 0 | | 0.00 | |
| Value Added Tax (GST/HST) | | 0.0 % | | 0 | | 0.00 | | |
| TOTAL CONSTRUCTION ESTIMATE | | | | | \$ 53,524,000 | \$ | 9,792.17 | |

| A1 SUBSTRUCTURE | | Quantity | Unit rate | Amount | Remarks |
|------------------------|--|----------------------|----------------------------|---------------|------------------|
| A11 Foundations | | | | | |
| 1 | Allowance for clearing, grubbing | 4,470 m ² | 35.00 | 156,500 | |
| 2 | Reinforced concrete perimeter strip footing, 250 x 800mm | 271 m | 215.00 | 58,300 | |
| 3 | Reinforced concrete interior strip footing, 250 x 800mm, allow | 82 m | 215.00 | 17,600 | |
| 4 | Reinforced concrete perimeter pad footing, 250 x 1000 x 1000mm | 36 no. | 420.00 | 15,100 | |
| 5 | Reinforced concrete interior pad footing, 250 x 1000 x 1000mm | 48 no. | 420.00 | 20,200 | |
| 6 | Reinforced concrete frost walls, 200mm thick | 611 m ² | 610.00 | 372,700 | |
| 7 | Reinforced concrete interior walls, 200mm thick at service room and crawlspace | 131 m ² | 610.00 | 79,900 | |
| 8 | Reinforced concrete pilasters, 500 x 500mm | 36 no. | 1,400.00 | 50,400 | |
| 9 | Reinforced concrete piers, 500 x 500mm | 42 no. | 1,540.00 | 64,700 | |
| 10 | Allowance for 200mm rigid insulation, frost protection to perimeter footings | 490 m ² | 180.00 | 88,200 | |
| 11 | Allowance for waterproofing and parging to o/s face of foundation walls | 611 m ² | 85.00 | 51,900 | |
| 12 | Allowance for 100mm rigid insulation to i/s face of frost walls | 611 m ² | 100.00 | 61,100 | |
| 13 | Reinforced concrete elevator pad c/w pit walls, etc., | 1 no. | 10,000.00 | 10,000 | |
| 14 | Allowance for drainage system | 4,470 m ² | 20.10 | 89,800 | |
| | - Allowance for sump pits | 4 no. | 5,000.00 | 20,000 | |
| | - Allowance for perimeter drainage | 271 m | 45.00 | 12,200 | |
| | - Allowance for interior drainage system | 1,280 m | 45.00 | 57,600 | |
| A11 Foundations | | TOTAL : \$ | 4,470 m² | 254.23 | 1,136,400 |

| A1 SUBSTRUCTURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| A12 Basement Excavation | | | | |
| 1 Allowance for soil excavation to expose bedrock, working spaces, excess material removed from site | 5,655 m3 | 45.00 | 254,500 | |
| 2 Allowance for rock excavation as required for pool depth, services, etc., used as fill | 1,900 m3 | 150.00 | 285,000 | |
| 3 Backfill with Engineered fill below main floor | 2,100 m3 | 85.00 | 178,500 | |
| 4 Backfill with excavated material to o/s of foundations | 3,200 m3 | 45.00 | 144,000 | |
| A12 Basement Excavation | TOTAL : \$ | 4,470 m2 | 192.84 | 862,000 |

| A1 SUBSTRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|------------|-----------|------------|---------|
| A13 Special Conditions | | | | |
| 1 Allowance for removal of loose rock, boulders | | allow | 8,000 | |
| 2 Allowance for dewatering foundations | | allow | 12,000 | |
| 3 Allowance for rock anchors to footings | 463 no. | 150.10 | 69,500 | |
| - Strip footings, 1200mm c/c | 295 no. | 150.00 | 44,300 | |
| - Pad footings, 2 per pad | 168 no. | 150.00 | 25,200 | |
| 4 Allowance for selective blasting and rock removal | | allow | 100,000 | |
| A13 Special Conditions | TOTAL : \$ | 1 Sum | 189,500.00 | 189,500 |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|----------------------|-----------|-----------|---------|
| A21 Lowest Floor Construction | | | | |
| 1 Reinforced concrete slab on grade, allow 150mm thick c/w 10M @ 200mm c/c | 2,949 m ² | 215.00 | 634,000 | |
| 2 Allowance for slab thickening at masonry partitions, trench drains, etc., | | allow | 30,000 | |
| 3 Lap pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 1,089 m ² | 150.00 | 163,400 | |
| 4 Extra over to above for ramp | 20 m ² | 200.00 | 4,000 | |
| 5 Reinforced concrete walls to above, 300mm thick, average | 144 m ² | 730.00 | 105,100 | |
| 6 Leisure pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 369 m ² | 150.00 | 55,400 | |
| 7 Extra over to above for ramp | 64 m ² | 150.00 | 9,600 | |
| 8 Reinforced concrete walls to above, 300mm thick, average | 218 m ² | 730.00 | 159,100 | |
| 9 Extra over to above for curves, features, etc., | 72 m ² | 100.00 | 7,200 | |
| 10 Allowance for features | | allow | 10,000 | |
| 11 Therapy pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 63 m ² | 150.00 | 9,500 | |
| 12 Extra over to above for ramp and stairs | 16 m ² | 400.00 | 6,400 | |
| 13 Reinforced concrete walls to above, 300mm thick, average | 66 m ² | 730.00 | 48,200 | |
| 14 Extra over to above for curves, features, etc., | 60 m ² | 100.00 | 6,000 | |
| Carried Forward : | | | 1,247,900 | |

| A2 STRUCTURE | | Quantity | Unit rate | Amount | Remarks |
|---|---|---------------------|-------------------|-----------|---------|
| A21 Lowest Floor Construction (Continued) | | | Brought Forward : | 1,247,900 | |
| 15 | Extra over for waterproofing compound to pool areas | 1 sum | 26,000.00 | 26,000 | |
| | - Allowance for compound added to concrete mix | 1 sum | 17,000.00 | 17,000 | |
| | - Allowance for filling pool to activate compound, including removal | 1 sum | 9,000.00 | 9,000 | |
| 16 | Allowance for 10 mil vapour barrier, 100mm h/d rigid insulation, compacted granular | 4,470 m2 | 115.00 | 514,100 | |
| 17 | Allowance for 10 mil vapour barrier, 100mm h/d rigid insulation to pool walls | 428 m2 | 115.00 | 49,200 | |
| 18 | Steel stair down to service room level | 2 flight | 8,000.00 | 16,000 | |
| A21 Lowest Floor Construction | | TOTAL : \$ 4,470 m2 | 414.59 | 1,853,200 | |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------|---------|---------|
| A22 Upper Floor Construction | | | | |
| 1 Concrete topping on metal deck c/w welded wire mesh | 816 m2 | 180.00 | 146,900 | |
| 2 Concrete topping on metal deck c/w welded wire mesh, tiered construction to spectator seating | 180 m2 | 240.00 | 43,200 | |
| 3 Structural support to above | | | | |
| - OWSJ, beams, columns | 996 m2 | 486.70 | 484,800 | |
| - Miscellaneous metals, connections, consumables | 54,780 kg | 8.00 | 438,200 | |
| - Miscellaneous metals, connections, consumables | 5,478 kg | 8.50 | 46,600 | |
| 4 Concrete filled metal pan stairs c/w painted steel pipe handrails, public access | 2 flight | 12,000.00 | 24,000 | |
| 5 Concrete filled metal pan stairs c/w painted steel pipe handrails to upper service space | 1 flight | 12,000.00 | 12,000 | |
| A22 Upper Floor Construction | TOTAL : \$ 996 m2 | 713.76 | 710,900 | |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|------------------|
| A23 Roof Construction | | | | |
| 1 38mm acoustical metal deck, galvanized to Natatorium | 2,846 m2 | 52.00 | 148,000 | |
| 2 Structural support to above, galvanized | | | | |
| - OWSJ, beams, columns | 2,846 m2 | 746.30 | 2,123,900 | |
| - Miscellaneous metals, connections, consumables | 213,450 kg | 9.00 | 1,921,100 | |
| - Miscellaneous metals, connections, consumables | 21,345 kg | 9.50 | 202,800 | |
| 3 38mm metal deck, other areas | 1,624 m2 | 45.00 | 73,100 | |
| 4 Structural support to above | | | | |
| - OWSJ, beams, columns | 1,624 m2 | 486.80 | 790,500 | |
| - Miscellaneous metals, connections, consumables | 89,320 kg | 8.00 | 714,600 | |
| - Miscellaneous metals, connections, consumables | 8,932 kg | 8.50 | 75,900 | |
| 5 Roof overhang, measured with projections | | nil | | |
| A23 Roof Construction | TOTAL : \$ | 4,470 m2 | 701.45 | 3,135,500 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|--|----------------------|----------------------------|---------------|------------------|
| A32 Walls Above Grade | | | | |
| 1 EW1, 22 gauge corrugated metal on 17mm furring, weather barrier, 50+100mm rigid insulation, Z-girts, self adhesive a/v barrier c/w primer, 13mm sheathing, 152mm wind bearings studs, 16mm type X gypsum bd. | 1,444 m ² | 625.00 | 902,500 | |
| 2 EW2, premium cladding system, 17mm furring, weather barrier, 50+100mm rigid insulation, Z-girts, self adhesive a/v barrier c/w primer, 13mm sheathing, 152mm wind bearings studs, 16mm type X gypsum bd. | 619 m ² | 710.00 | 439,500 | |
| 3 Allowance for sealants, foamed-in-place insulation, exterior painting, etc., | 2,063 m ² | 35.00 | 72,200 | |
| A32 Walls Above Grade | TOTAL : \$ | 2,063 m² | 685.51 | 1,414,200 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|---------------|-----------------|------------------|
| A33 Windows & Entrances | | | | |
| 1 Triple glazed windows and curtain wall in fibreglass framing | 542 m2 | 2,500.00 | 1,355,000 | |
| 2 Insulated hollow metal doors c/w frames, standard hardware | 4 no. | 3,000.00 | 12,000 | |
| 3 Glazed aluminum doors c/w frames, standard hardware | 4 no. | 4,200.00 | 16,800 | |
| 4 Overhead door to service room, manually operated | 1 no. | 11,000.00 | 11,000 | |
| 5 Allowance for hardware upgrades | 8 no. | 1,000.00 | 8,000 | |
| 6 Push button barrier free door operators | 1 no. | 3,500.00 | 3,500 | |
| 7 Louvres, by mechanical | | nil | | |
| A33 Windows & Entrances | TOTAL : \$ | 568 m2 | 2,475.88 | 1,406,300 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|---|---------------------|-----------|-----------|---------|
| A34 Roof Coverings | | | | |
| 1 4mm MBM cap, 3mm MBM base, 3mm board mech. fastened, sloped insulation, 250mm rigid insulation, air barrier, 13mm primed deck boards | 4,470 m2 | 390.00 | 1,743,300 | |
| 2 Roof overhang, measured with projections | | nil | | |
| A34 Roof Coverings | TOTAL : \$ 4,470 m2 | 390.00 | 1,743,300 | |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|------------------|---------------|
| A35 Projections | | | | |
| 1 Allowance for galvanized exit stair c/w guard, handrails, foundations, at service entry | 1 flight | 10,000.00 | 10,000 | |
| 2 Dock bumpers at service o/h doors | 1 set | 2,000.00 | 2,000 | |
| 3 Allowance for concrete fill steel bollards | 8 no. | 600.00 | 4,800 | |
| A35 Projections | TOTAL : \$ | 1 Sum | 16,800.00 | 16,800 |

| B1 PARTITIONS & DOORS | | Quantity | Unit rate | Amount | Remarks |
|-----------------------|--|----------------------------|---------------|------------------|---------|
| B11 Partitions | | | | | |
| 1 | Typical partition, 16mm type X gypsum board both sides | 1,001 m2 | 210.00 | 210,200 | |
| 2 | Typical partition, service areas | 1,636 m2 | 270.00 | 441,700 | |
| 3 | Elevator shaft walls | 81 m2 | 330.00 | 26,700 | |
| 4 | Glazed partition to lobby, etc., | 964 m2 | 800.00 | 771,200 | |
| 5 | Allowance for firestopping, solid blocking, acoustical sealants, etc., | 3,682 m2 | 18.00 | 66,300 | |
| 6 | Operable partitions, not indicated | | nil | | |
| B11 Partitions | | TOTAL : \$ 3,682 m2 | 411.76 | 1,516,100 | |

| B1 PARTITIONS & DOORS | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|-----------------|----------------|
| B12 Doors | | | | |
| 1 Hollow metal doors c/w frames, standard hardware | 19 no. | 2,400.00 | 45,600 | |
| 2 Glazed aluminum doors c/w frames, standard hardware | 12 no. | 3,300.00 | 39,600 | |
| 3 Solid core wood doors c/w frames, standard hardware | 8 no. | 2,300.00 | 18,400 | |
| 4 Hollow metal doors to crawl space c/w frames, standard hardware | 3 no. | 2,500.00 | 7,500 | |
| 5 Push button barrier free door operators | 1 no. | 3,500.00 | 3,500 | |
| 6 Allowance for hardware upgrades | 42 no. | 1,000.00 | 42,000 | |
| B12 Doors | TOTAL : \$ | 42 No | 3,728.57 | 156,600 |

| B2 FINISHES | | Quantity | Unit rate | Amount | Remarks |
|---------------------------|---|----------------------|----------------------------|---------------|------------------|
| B21 Floor Finishes | | | | | |
| 1 | Ceramic tile | 2,454 m ² | 225.00 | 552,200 | |
| 2 | Allowance for special tiles, markings to above | | allow | 30,000 | |
| 3 | Pools, ceramic tile c/w membrane | 1,521 m ² | 377.10 | 573,500 | |
| | - Pool bottom | 1,521 m ² | 225.00 | 342,200 | |
| | - Pool walls | 428 m ² | 225.00 | 96,300 | |
| | - Edge tile c/w gutter | 276 m | 460.00 | 127,000 | |
| | - Allowance for stair, lane, etc., special tile, warning strips, etc. | | allow | 8,000 | |
| 4 | Sheet flooring | 755 m ² | 110.00 | 83,100 | |
| 5 | Rubber tile flooring | 140 m ² | 120.00 | 16,800 | |
| 6 | Sealer/hardener to exposed concrete | 596 m ² | 40.00 | 23,800 | |
| 7 | Epoxy flooring c/w cove base | 47 m ² | 110.00 | 5,200 | |
| B21 Floor Finishes | | TOTAL : \$ | 5,466 m² | 235.02 | 1,284,600 |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|------------------|
| B22 Ceiling Finishes | | | | |
| 1 Paint to exposed structure | 1,180 m2 | 50.00 | 59,000 | |
| 2 Finish to Natatorium | 2,846 m2 | 250.00 | 711,500 | |
| 3 Suspended gypsum board c/w paint finish | 700 m2 | 135.00 | 94,500 | |
| 4 Suspended acoustic tile system | 680 m2 | 60.00 | 40,800 | |
| 5 Extra over to above for painted gypsum board bulkheads | 800 m2 | 160.00 | 128,000 | |
| 6 Allowance for features, clouds, acoustical baffles, etc., | | allow | 30,000 | |
| B22 Ceiling Finishes | TOTAL : \$ | 5,466 m2 | 194.62 | 1,063,800 |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|--------------|----------------|
| B23 Wall Finishes | | | | |
| 1 Exposed cedar to steam room | 75 m2 | 135.00 | 10,100 | |
| 2 Allowance for epoxy paint | 600 m2 | 75.00 | 45,000 | |
| 3 Ceramic tile to washrooms, changerooms, etc., | 500 m2 | 190.00 | 95,000 | |
| 4 Wall covering to Natatorium, c/w 300mm high ceramic base | 1,395 m2 | 85.00 | 118,600 | |
| 5 Paint | 7,247 m2 | 40.00 | 289,900 | |
| 6 Intumescent paint to exposed structure to Natatorium, change rooms, etc., | | allow | 50,000 | |
| 7 Allowance for other finishes, upgrades, etc., | | allow | 20,000 | |
| B23 Wall Finishes | TOTAL : \$ | 9,817 m2 | 64.03 | 628,600 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|--------------|----------------|
| B31 Fittings & Fixtures | | | | |
| 1 Washroom accessories, allowance | 1 sum | 38,000.00 | 38,000 | |
| 2 Washroom and change room partitions, solid phenolic | 1 sum | 65,000.00 | 65,000 | |
| 3 Millwork | 1 sum | 185,000.00 | 185,000 | |
| 4 Manually operated blinds, exterior | 542 m2 | 100.00 | 54,200 | |
| 5 Lockers | 1 sum | 58,000.00 | 58,000 | |
| 6 Interior signage and wayfinding | 1 sum | 45,000.00 | 45,000 | |
| 7 Exterior signage | 1 sum | 50,000.00 | 50,000 | |
| 8 Janitor accessories | 1 sum | 2,200.00 | 2,200 | |
| 9 Corner guards, protection, etc., | 1 sum | 20,000.00 | 20,000 | |
| B31 Fittings & Fixtures | TOTAL : \$ | 5,466 m2 | 94.66 | 517,400 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|--------------|----------------|
| B32 Equipment | | | | |
| 1 Wet sauna equipment | 1 sum | 15,000.00 | 15,000 | |
| 2 Turnstile, security system | 1 sum | 17,000.00 | 17,000 | |
| 3 Security grille to canteen | 1 sum | 4,000.00 | 4,000 | |
| 4 Mechanical access doors | 1 sum | 7,000.00 | 7,000 | |
| 5 Spectator area | 180 m2 | 376.10 | 67,700 | |
| - Guard, including wheelchair areas | 42 m | 1,200.00 | 50,400 | |
| - Bench seating | 157 m | 110.00 | 17,300 | |
| 6 Other equipment and loose furniture, not included | | nil | | |
| 7 Gym and fitness equipment, not included | | nil | | |
| B32 Equipment | TOTAL : \$ | 5,466 m2 | 20.25 | 110,700 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|--------------|---------------------|------------------|
| B33 Pool Equipment | | | | |
| 1 Therapy pool | 1 sum | 230,000.00 | 230,000 | |
| 2 Lap pool, 50m | 1 sum | 270,000.00 | 270,000 | |
| 3 Leisure pool | 1 sum | 600,000.00 | 600,000 | |
| 4 Pool equipment miscellaneous, mobilization, commissioning, shop drawings, testing, etc., | 1 sum | 180,000.00 | 180,000 | |
| B33 Pool Equipment | TOTAL : \$ | 1 Sum | 1,280,000.00 | 1,280,000 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|------------|------------|------------|---------|
| B34 Elevator 1 Two stop front loading elevator | 1 no. | 120,000.00 | 120,000 | |
| B34 Elevator | TOTAL : \$ | 1 No | 120,000.00 | 120,000 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|----------|------------|-----------|---------|
| C11 Pool Plumbing & Drainage | | | | |
| 1 50m lane lap pool water supply & filtration system (3600gpm) | 1 sum | 730,000.00 | 730,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 700,000.00 | 700,000 | |
| - Allow for pool water system controls | 1 sum | 20,000.00 | 20,000 | |
| 2 Leisure pool water supply & filtration system | 1 sum | 635,000.00 | 635,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 600,000.00 | 600,000 | |
| - Allow for pool water system controls | 1 sum | 25,000.00 | 25,000 | |
| 3 Therapy pool water supply & filtration system | 1 sum | 230,000.00 | 230,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 200,000.00 | 200,000 | |
| - Allow for pool water system controls | 1 sum | 20,000.00 | 20,000 | |
| 4 Pool drainage and backwash system | 1 sum | 380,000.00 | 380,000 | |
| - Under ground pool drainage and back wash piping, deck drains, skimmers, pumps etc. (all 3 pools) | 1 sum | 380,000.00 | 380,000 | |
| 5 Pool chemical treatment - Calcium hyochlorite feed system | 1 sum | 70,000.00 | 70,000 | |
| 6 Pool chemical treatment - Sodium bisulphate feed system | 1 sum | 38,000.00 | 38,000 | |
| 7 Pool chemical supply, 1 year | 1 sum | 100,000.00 | 100,000 | |
| 8 Pool chemical treatment - CO2 injection system, not included | | nil | | |
| Carried Forward : | | | 2,183,000 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|---------------------|-------------------|-----------|---------|
| C11 Pool Plumbing & Drainage (Continued) | | Brought Forward : | 2,183,000 | |
| 9 Pool plumbing & drainage miscellaneous such as mobilization, start-up, cleaning, drawings , manuals, tagging, identification, testing, verification etc. | 1 sum | 80,000.00 | 80,000 | |
| C11 Pool Plumbing & Drainage | TOTAL : \$ 5,466 m2 | 414.01 | 2,263,000 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| C12 Plumbing & drainage | | | | |
| 1 Plumbing fixtures, ultra low flow & low flush | 56 no. | 1,739.30 | 97,400 | |
| - Water closet | 25 no. | 2,200.00 | 55,000 | |
| - Lavatory c/w faucet | 13 no. | 1,600.00 | 20,800 | |
| - Shower head & balancong valve | 18 no. | 1,200.00 | 21,600 | |
| 2 Domestic water (hot & cold) | 1 sum | 200,000.00 | 200,000 | |
| - Water entry assembly | 1 sum | 10,000.00 | 10,000 | |
| - DCW, DHWS & DHWR piping, pumps, insulation, fixture connections etc. | 1 sum | 140,000.00 | 140,000 | |
| - DHW pre heating using HX from backwashing or draining pools | 1 sum | 20,000.00 | 20,000 | |
| - DHW water heaters | 1 sum | 30,000.00 | 30,000 | |
| 3 Sanitary drainage | 1 sum | 240,000.00 | 240,000 | |
| - Above & under ground SAN drainage and vent piping, floor drains, cleanouts, sump pumps etc. | 1 sum | 240,000.00 | 240,000 | |
| 4 Grey water harvesting from pool change rooms fixtures | 1 sum | 80,000.00 | 80,000 | |
| - Allow for filters, UV treatment, tanks, pumps, piping, valves, connections etc. | 1 sum | 80,000.00 | 80,000 | |
| 5 Storm drainage | 1 sum | 100,000.00 | 100,000 | |
| - Allow for roof drains, RWLs, insulation, U/G drainage piping, cleanouts etc. | 1 sum | 100,000.00 | 100,000 | |
| 6 Fuel oil supply for back up heating boilers | 1 sum | 160,000.00 | 160,000 | |
| - Allow for 13000G outdoor oil tank, piping, valves, filters, pumps, day tanks & connections to boilers | 1 sum | 160,000.00 | 160,000 | |
| 7 Plumbing & drainage miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification, testing, verification etc. | 1 sum | 30,000.00 | 30,000 | |
| C12 Plumbing & drainage | TOTAL : \$ | 5,466 m2 | 166.01 | 907,400 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|--------------|----------------|
| C13 Fire Protection | | | | |
| 1 Incoming FW supply c/w backflow preventer fed directly from City water main | 1 sum | 15,000.00 | 15,000 | |
| 2 FW main header, zone valves, drain connections etc. | 1 sum | 12,000.00 | 12,000 | |
| 3 Fire department connection c/w dip check valve & piping | 1 sum | 10,000.00 | 10,000 | |
| 4 Fire water/sprinkler main piping | 1 sum | 50,000.00 | 50,000 | |
| 5 Sprinkler system c/w piping & heads | 5,466 m2 | 45.00 | 246,000 | |
| 6 Allow for fire extinguishers | 1 sum | 14,000.00 | 14,000 | |
| 7 Fire protection miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification, testing, verification etc. | 1 sum | 25,000.00 | 25,000 | |
| 8 Note:- Fire pump - not included | | nil | | |
| C13 Fire Protection | TOTAL : \$ | 5,466 m2 | 68.06 | 372,000 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|---|----------|--------------|------------------|---------|
| C14 HVAC | | | | |
| 1 Building heating | 1 sum | 1,145,200.00 | 1,145,200 | |
| - Note:- Primary heating source from existing biomass district heating system, expected load 3249kW | | incl. | | |
| - Oil burning boiler back up system c/w two 1950kW boilers | 1 sum | 380,000.00 | 380,000 | |
| - Allow for plate & frame heat exchanger, pumps, piping, valves, insulation, terminals & connection | 5,466 m2 | 140.00 | 765,200 | |
| 2 Pool water heating | 1 sum | 120,000.00 | 120,000 | |
| - Dedicated heat exchanger for 50m competition pool, 0.3 deg.C./hr, allow | 1 no. | 50,000.00 | 50,000 | |
| - Dedicated heat exchanger for leisure pool, 1.1 deg.C./hr, allow | 1 no. | 15,000.00 | 15,000 | |
| - Dedicated heat exchanger for therapy pool, 2.8 deg.C./hr, allow | 1 no. | 25,000.00 | 25,000 | |
| - Allow for piping and connections to base building heating system | 1 sum | 30,000.00 | 30,000 | |
| 3 Dedicated cooling for server room | 1 sum | 12,000.00 | 12,000 | |
| - Split air conditioner c/w outdoor condenser | 1 sum | 12,000.00 | 12,000 | |
| 4 Natatorium (pool area & all associated decks) ventilation | 1 sum | 1,460,000.00 | 1,460,000 | |
| - Air handling unit AHU-1(OA) 47,500 l/s c/w heat recovery, SF, EF, 494 kW HC & 87.5kW DX cooling | 1 no. | 1,060,000.00 | 1,060,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 400,000.00 | 400,000 | |
| 5 Administration, multipurpose rooms and canteen ventilation | 1 sum | 300,000.00 | 300,000 | |
| - Air handling unit AHU-2(ERV) c/w heat recovery, HW heting & DX cooling, 3600 l/s | 1 no. | 140,000.00 | 140,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 160,000.00 | 160,000 | |
| 6 2nd floor office ventilation | 1 sum | 100,000.00 | 100,000 | |
| - Air handling unit AHU-3 c/w HW heting & DX cooling, 1600 l/s | 1 no. | 40,000.00 | 40,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 60,000.00 | 60,000 | |
| Carried Forward : | | | 3,137,200 | |

| C1 MECHANICAL | | Quantity | Unit rate | Amount | Remarks |
|-----------------------------|--|-------------------|--------------------------|------------------|------------------|
| C14 HVAC (Continued) | | | Brought Forward : | 3,137,200 | |
| 7 | Canteen dedicated exhaust system - Allow for exhaust fan, ductwork, hoods, louvers, fire wrap etc. | 1 sum | 40,000.00 | 40,000 | |
| | | 1 sum | 40,000.00 | 40,000 | |
| 8 | Change rooms and washrooms exhaust - Allow for EA ductwork, grilles, tie into main pool area heat recovery systems | 1 sum | 120,000.00 | 120,000 | |
| | | 1 sum | 120,000.00 | 120,000 | |
| 9 | Miscellaneous exhaust and ventilation - Allow for chlorine room exhaust and ventilation - Allow for service spaces exhaust and ventilation | 1 sum | 75,000.00 | 75,000 | |
| | | 1 sum | 15,000.00 | 15,000 | |
| | | 1 sum | 60,000.00 | 60,000 | |
| 10 | HVAC miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification etc. | 1 sum | 40,000.00 | 40,000 | |
| 11 | Testing, adjusting, balancing and commissioning | 1 sum | 140,000.00 | 140,000 | |
| C14 HVAC | | TOTAL : \$ | 5,466 m2 | 649.87 | 3,552,200 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--------------------------|---------------------|------------|---------|---------|
| C15 Controls | | | | |
| 1 Allow for DDC controls | 1 sum | 500,000.00 | 500,000 | |
| C15 Controls | TOTAL : \$ 5,466 m2 | 91.47 | 500,000 | |

| C2 ELECTRICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| C21 Service & Distribution | | | | |
| 1 Service & distribution, 800A 347/600V 3Ph 4w | 1 sum | 425,000.00 | 425,000 | |
| 2 Standby diesel generator, 550kW 347/600V 3Ph inside building c/w 800A ATS, load bank etc | 1 sum | 450,000.00 | 450,000 | |
| 3 Electrical Misc. | 1 sum | 50,000.00 | 50,000 | |
| - Permits, fees & inspection | 1 sum | 8,000.00 | 8,000 | |
| - Drawings & manuals | 1 sum | 10,000.00 | 10,000 | |
| - Sealing & fire-stopping | 1 sum | 2,000.00 | 2,000 | |
| - Mobilization | 1 sum | 30,000.00 | 30,000 | |
| C21 Service & Distribution | TOTAL : \$ | 5,466 m2 | 169.23 | 925,000 |

| C2 ELECTRICAL | | Quantity | Unit rate | Amount | Remarks |
|---------------------------------|--------------------------------------|---------------------|-----------|---------|---------|
| C22 Lighting, Devices & Heating | | | | | |
| 1 | Light fixtures | 5,466 m2 | 100.00 | 546,600 | |
| 2 | Exit & emergency lighting | 1 sum | 55,100.00 | 55,100 | |
| 3 | Lighting controls | 5,466 m2 | 15.00 | 82,000 | |
| 4 | Power outlets, devices & connections | 5,466 m2 | 35.00 | 191,300 | |
| 5 | Connections to mechanical equipment | 60 no. | 1,000.00 | 60,000 | |
| 6 | Electric heating, not included | | nil. | | |
| 7 | Under water lighting, not included | | nil. | | |
| C22 Lighting, Devices & Heating | | TOTAL : \$ 5,466 m2 | 171.06 | 935,000 | |

| C2 ELECTRICAL | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|--------------|----------------|
| C23 Systems & Ancillaries | | | | |
| 1 FA system, addressable 2 stage c/w battery charger, standby batteries, connection to DACT & monitored by local ULC approved monitoring company, 5466m2 @ \$25 | 1 sum | 135,000.00 | 135,000 | |
| 2 Combined telephone & PA system | 1 sum | 50,000.00 | 50,000 | |
| 3 Communication system (voice/data) | 1 sum | 70,000.00 | 70,000 | |
| 4 Door access controls system | 1 sum | 40,000.00 | 40,000 | |
| 5 CCTV system | 1 sum | 75,000.00 | 75,000 | |
| 6 Intrusion alarm system | 1 sum | 45,000.00 | 45,000 | |
| 7 CableTV system | 1 sum | 40,000.00 | 40,000 | |
| 8 Clock system, allow | 1 sum | 5,000.00 | 5,000 | |
| 9 Staff alarm system, allow | 1 sum | 5,000.00 | 5,000 | |
| 10 Sound system, allow | 1 sum | 40,000.00 | 40,000 | |
| 11 Misc. systems | 1 sum | 30,000.00 | 30,000 | |
| 12 Lightning protection system, not included | | nil. | | |
| C23 Systems & Ancillaries | TOTAL : \$ | 5,466 m2 | 97.88 | 535,000 |

| D1 SITE WORK | | Quantity | Unit rate | Amount | Remarks |
|-----------------------------|---|---------------------|-----------|---------|---------|
| D11 Site Development | | | | | |
| 1 | Allowance for clearing, grubbing, cut and fill, as required | 6,700 m2 | 35.00 | 234,500 | |
| 2 | Asphalt paving | 4,300 m2 | 85.00 | 365,500 | |
| 3 | Demarkation to above | | allow | 12,000 | |
| 4 | Allowance for concrete deck at entrance | 60 m2 | 240.00 | 14,400 | |
| 5 | Allowance restoration, soft landscaping | 2,300 m2 | 30.00 | 69,000 | |
| 6 | Allowance for restoration at new service connections | | allow | 30,000 | |
| D11 Site Development | | TOTAL : \$ 6,700 m2 | 108.27 | 725,400 | |

| D1 SITE WORK | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|-------------------|----------------|
| D12 Mechanical Site Services | | | | |
| 1 Water supply (fire & domestic) | 1 sum | 250,000.00 | 250,000 | |
| - Allow for water supply from city water main c/w U/G piping, valves, valve chambers, connections etc. | 1 sum | 250,000.00 | 250,000 | |
| 2 Sanitary drainage disposal | 1 sum | 150,000.00 | 150,000 | |
| - Allow for new manholes, underground piping, connection to existing mains etc. | 1 sum | 150,000.00 | 150,000 | |
| 3 Storm drainage disposal | 1 sum | 200,000.00 | 200,000 | |
| - Relocate manhole and culvert at north end of the site | 1 allow | 80,000.00 | 80,000 | |
| - Allow for new manholes, catchbasins, underground piping & connections | 1 sum | 120,000.00 | 120,000 | |
| 4 Fuel oil storage for building heating - included in C12 Plumbing & Drainage | | incl. | | |
| 5 District heating supply to new aquatic centre (heating load 3249kW) - allow for 150mm dia. U/G HWS/HWR pre-insulated piping, valves, connection to existing biomass district heating system etc.- \$800,000 separate budget | | nil | | |
| D12 Mechanical Site Services | TOTAL : \$ | 1 Sum | 600,000.00 | 600,000 |

| D1 SITE WORK | Quantity | Unit rate | Amount | Remarks |
|--|------------|-----------|------------|---------|
| D13 Electrical Site Services | | | | |
| 1 Incoming O/H primary power c/w Utility TX, pad, grounding, rock excavation etc | 1 sum | 55,000.00 | 55,000 | |
| 2 Incoming U/G secondary power | 1 sum | 25,000.00 | 25,000 | |
| 3 Incoming telecom services (CableTV, Internet, Tel) | 1 sum | 20,000.00 | 20,000 | |
| 4 Site lighting | 1 sum | 20,000.00 | 20,000 | |
| D13 Electrical Site Services | TOTAL : \$ | 1 Sum | 120,000.00 | 120,000 |

**YELLOWKNIFE AQUATIC CENTRE
POOL OPTIONS
YELLOWKNIFE, NORTHWEST TERRITORIES**

Report Date : October 2020

**Appendix
C - Detailed Elemental Estimate - 6 Lane 25m Pool**

| Project | Yellowknife Aquatic Centre | | | | | Report date | 29 Oct 2020 | |
|---|----------------------------|----------------|--------------|------------------|---------------|-------------|-------------|-------|
| Location | 25m Pool, 6 Lane | | | | | Page No. | 1 | |
| Owner | Yellowknife, NWT | | | | | Bldg Type | 550 | |
| Consultant | City of Yellowknife | | | | | C.T. Index | 0.0 | |
| | Taylor Architecture Group | | | | | GFA | 4,554 m2 | |
| ELEMENTAL COST SUMMARY | | | | | | | | |
| Element | Ratio to GFA | Elemental Cost | | Elemental Amount | | Rate per m2 | | % |
| | | Quantity | Unit rate | Sub-Total | Total | Sub-Total | Total | |
| A SHELL | | 4,554 m2 | | | 10,526,600 | | 2,311.51 | 31.1 |
| A1 SUBSTRUCTURE | | | | | 1,880,600 | | 412.96 | 5.6 |
| A11 Foundations | 0.760 | 3,471 m2 | 274.00 | 951,700 | | 208.98 | | |
| A12 Basement Excavation | 0.760 | 3,471 m2 | 216.00 | 748,300 | | 164.32 | | |
| A13 Special Conditions | 0.000 | 1 Sum | 180,600.00 | 180,600 | | 39.66 | | |
| A2 STRUCTURE | | | | | 4,631,100 | | 1,016.93 | 13.7 |
| A21 Lowest Floor Construction | 0.760 | 3,471 m2 | 435.00 | 1,509,100 | | 331.38 | | |
| A22 Upper Floor Construction | 0.240 | 1,083 m2 | 710.00 | 768,800 | | 168.82 | | |
| A23 Roof Construction | 0.760 | 3,471 m2 | 678.00 | 2,353,200 | | 516.73 | | |
| A3 EXTERIOR ENCLOSURE | | | | | 4,014,900 | | 881.62 | 11.9 |
| A31 Walls Below Grade | | | | | 0 | 0.00 | | |
| A32 Walls Above Grade | 0.420 | 1,930 m2 | 686.00 | 1,323,100 | | 290.54 | | |
| A33 Windows & Entrances | 0.120 | 534 m2 | 2,474.00 | 1,321,300 | | 290.14 | | |
| A34 Roof Coverings | 0.760 | 3,471 m2 | 390.00 | 1,353,700 | | 297.26 | | |
| A35 Projections | 0.000 | 1 Sum | 16,800.00 | 16,800 | | 3.69 | | |
| B INTERIORS | | 4,554 m2 | | | 4,760,700 | | 1,045.39 | 14.1 |
| B1 PARTITIONS & DOORS | | | | | 1,047,700 | | 230.06 | 3.1 |
| B11 Partitions | 0.650 | 2,948 m2 | 301.00 | 886,300 | | 194.62 | | |
| B12 Doors | 0.010 | 45 No | 3,587.00 | 161,400 | | 35.44 | | |
| B2 FINISHES | | | | | 1,922,500 | | 422.16 | 5.7 |
| B21 Floor Finishes | 1.000 | 4,554 m2 | 163.00 | 742,000 | | 162.93 | | |
| B22 Ceiling Finishes | 1.000 | 4,554 m2 | 141.00 | 640,600 | | 140.67 | | |
| B23 Wall Finishes | 1.770 | 8,054 m2 | 67.00 | 539,900 | | 118.56 | | |
| B3 FITTINGS & EQUIPMENT | | | | | 1,790,500 | | 393.17 | 5.3 |
| B31 Fittings & Fixtures | 1.000 | 4,554 m2 | 102.00 | 464,000 | | 101.89 | | |
| B32 Equipment | 1.000 | 4,554 m2 | 23.00 | 106,500 | | 23.39 | | |
| B33 Pool Equipment | 0.000 | 1 Sum | 1,100,000.00 | 1,100,000 | | 241.55 | | |
| B34 Elevator | 0.000 | 1 No | 120,000.00 | 120,000 | | 26.35 | | |
| C SERVICES | | 4,554 m2 | | | 8,264,900 | | 1,814.87 | 24.4 |
| C1 MECHANICAL | | | | | 6,148,900 | | 1,350.22 | 18.2 |
| C11 Pool Plumbing & Drainage | 1.000 | 4,554 m2 | 383.00 | 1,745,000 | | 383.18 | | |
| C12 Plumbing & Drainage | 1.000 | 4,554 m2 | 189.00 | 861,400 | | 189.15 | | |
| C13 Fire Protection | 1.000 | 4,554 m2 | 68.00 | 311,900 | | 68.49 | | |
| C14 HVAC | 1.000 | 4,554 m2 | 608.00 | 2,770,600 | | 608.39 | | |
| C15 Controls | 1.000 | 4,554 m2 | 101.00 | 460,000 | | 101.01 | | |
| C2 ELECTRICAL | | | | | 2,116,000 | | 464.65 | 6.3 |
| C21 Service & Distribution | 1.000 | 4,554 m2 | 187.00 | 850,000 | | 186.65 | | |
| C22 Lighting, Devices & Heating | 1.000 | 4,554 m2 | 173.00 | 788,000 | | 173.03 | | |
| C23 Systems & Ancillaries | 1.000 | 4,554 m2 | 105.00 | 478,000 | | 104.96 | | |
| NET BUILDING COST - EXCLUDING SITE | | | | | \$ 23,552,200 | | 5,171.76 | 69.6 |
| D SITE & ANCILLARY WORK | | 4,554 m2 | | | 1,445,400 | | 317.39 | 4.3 |
| D1 SITE WORK | | | | | 1,445,400 | | 317.39 | 4.3 |
| D11 Site Development | 1.470 | 6,700 m2 | 108.00 | 725,400 | | 159.29 | | |
| D12 Mechanical Site Services | 0.000 | 1 Sum | 600,000.00 | 600,000 | | 131.75 | | |
| D13 Electrical Site Services | 0.000 | 1 Sum | 120,000.00 | 120,000 | | 26.35 | | |
| D2 ANCILLARY WORK | | | | | 0 | 0 | 0.00 | 0.0 |
| D21 Demolitions | | | | | | 0 | 0.00 | |
| NET BUILDING COST - INCLUDING SITE | | | | | \$ 24,997,600 | | 5,489.15 | 73.9 |
| Z1 GENERAL REQUIREMENTS & FEE | | | | | 8,824,100 | | 1,937.66 | 26.1 |
| Z11 General Requirements | | 23.0 % | | 5,749,400 | | 1,262.49 | | |
| Z12 Fee | | 10.0 % | | 3,074,700 | | 675.16 | | |
| TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES | | | | | \$ 33,821,700 | | 7,426.81 | 100.0 |
| Z2 ALLOWANCES | | | | | 9,930,000 | | 2,180.50 | |
| Z21 Design & Pricing Allowance | | 12.0 % | | 4,058,600 | | 891.22 | | |
| Z22 Escalation Allowance | | 10.0 % | | 3,788,000 | | 831.80 | | |
| Z23 Construction Allowance | | 5.0 % | | 2,083,400 | | 457.49 | | |
| TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES | | | | | \$ 43,751,700 | | 9,607.31 | |
| - VALUE ADDED TAX (GST/HST) | | | | | 0 | | 0.00 | |
| Value Added Tax (GST/HST) | | 0.0 % | | 0 | | 0.00 | | |
| TOTAL CONSTRUCTION ESTIMATE | | | | | \$ 43,751,700 | \$ | 9,607.31 | |

| A1 SUBSTRUCTURE | | Quantity | Unit rate | Amount | Remarks |
|------------------------|--|----------------------|----------------------------|---------------|----------------|
| A11 Foundations | | | | | |
| 1 | Allowance for clearing, grubbing | 3,471 m ² | 8.00 | 27,800 | |
| 2 | Reinforced concrete perimeter strip footing, 250 x 800mm | 254 m | 215.00 | 54,600 | |
| 3 | Reinforced concrete interior strip footing, 250 x 800mm, allow | 58 m | 215.00 | 12,500 | |
| 4 | Reinforced concrete perimeter pad footing, 250 x 1000 x 1000mm | 33 no. | 420.00 | 13,900 | |
| 5 | Reinforced concrete interior pad footing, 250 x 1000 x 1000mm | 39 no. | 420.00 | 16,400 | |
| 6 | Reinforced concrete frost walls, 200mm thick, see also walls below grade | 589 m ² | 610.00 | 359,300 | |
| 7 | Reinforced concrete interior walls, 200mm thick at service room and crawlspace | 131 m ² | 610.00 | 79,900 | |
| 8 | Reinforced concrete pilasters, 500 x 500mm | 33 no. | 1,400.00 | 46,200 | |
| 9 | Reinforced concrete piers, 500 x 500mm | 35 no. | 1,540.00 | 53,900 | |
| 10 | Allowance for 200mm rigid insulation, frost protection to perimeter footings | 460 m ² | 180.00 | 82,800 | |
| 11 | Allowance for waterproofing and parging to o/s face of foundation walls | 589 m ² | 85.00 | 50,100 | |
| 12 | Allowance for 100mm rigid insulation to i/s face of frost walls | 589 m ² | 100.00 | 58,900 | |
| 13 | Reinforced concrete elevator pad c/w pit walls, etc., | 1 no. | 10,000.00 | 10,000 | |
| 14 | Allowance for drainage system | 3,471 m ² | 24.60 | 85,400 | |
| | - Allowance for sump pits | 4 no. | 5,000.00 | 20,000 | |
| | - Allowance for perimeter drainage | 254 m | 45.00 | 11,400 | |
| | - Allowance for interior drainage system | 1,200 m | 45.00 | 54,000 | |
| A11 Foundations | | TOTAL : \$ | 3,471 m² | 274.19 | 951,700 |

| A1 SUBSTRUCTURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| A12 Basement Excavation | | | | |
| 1 Allowance for soil excavation to expose bedrock, working spaces, excess material removed from site | 5,600 m3 | 45.00 | 252,000 | |
| 2 Allowance for rock excavation as required for pool depth, services, etc., used as fill | 1,360 m3 | 150.00 | 204,000 | |
| 3 Backfill with Engineered fill below main floor | 1,850 m3 | 85.00 | 157,300 | |
| 4 Backfill with excavated material to o/s of foundations | 3,000 m3 | 45.00 | 135,000 | |
| A12 Basement Excavation | TOTAL : \$ | 3,471 m2 | 215.59 | 748,300 |

| A1 SUBSTRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|------------|-----------|------------|---------|
| A13 Special Conditions | | | | |
| 1 Allowance for removal of loose rock, boulders | | allow | 8,000 | |
| 2 Allowance for dewatering foundations | | allow | 12,000 | |
| 3 Allowance for rock anchors to footings | 404 no. | 150.00 | 60,600 | |
| - Strip footings, 1200mm c/c | 260 no. | 150.00 | 39,000 | |
| - Pad footings, 2 per pad | 144 no. | 150.00 | 21,600 | |
| 4 Allowance for selective blasting and rock removal | | allow | 100,000 | |
| A13 Special Conditions | TOTAL : \$ | 1 Sum | 180,600.00 | 180,600 |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|----------|-----------|------------------|---------|
| A21 Lowest Floor Construction | | | | |
| 1 Reinforced concrete slab on grade, allow 150mm thick c/w 10M @ 200mm c/c | 2,644 m2 | 215.00 | 568,500 | |
| 2 Allowance for slab thickening at masonry partitions, trench drains, etc., | | allow | 30,000 | |
| 3 Lap pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 395 m2 | 150.00 | 59,300 | |
| 4 Extra over to above for ramp | 20 m2 | 200.00 | 4,000 | |
| 5 Reinforced concrete walls to above, 300mm thick, average | 85 m2 | 730.00 | 62,100 | |
| 6 Leisure pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 369 m2 | 150.00 | 55,400 | |
| 7 Extra over to above for ramp | 64 m2 | 150.00 | 9,600 | |
| 8 Reinforced concrete walls to above, 300mm thick, average | 218 m2 | 730.00 | 159,100 | |
| 9 Extra over to above for curves, features, etc., | 72 m2 | 100.00 | 7,200 | |
| 10 Allowance for features | | allow | 10,000 | |
| 11 Therapy pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 63 m2 | 150.00 | 9,500 | |
| 12 Extra over to above for ramp and stairs | 16 m2 | 400.00 | 6,400 | |
| 13 Reinforced concrete walls to above, 300mm thick, average | 66 m2 | 730.00 | 48,200 | |
| 14 Extra over to above for curves, features, etc., | 60 m2 | 100.00 | 6,000 | |
| Carried Forward : | | | 1,035,300 | |

| A2 STRUCTURE | | Quantity | Unit rate | Amount | Remarks |
|---|---|-------------------|--------------------------|------------------|------------------|
| A21 Lowest Floor Construction (Continued) | | | Brought Forward : | 1,035,300 | |
| 15 | Extra over for waterproofing compound to pool areas | 1 sum | 18,000.00 | 18,000 | |
| | - Allowance for compound added to concrete mix | 1 sum | 12,000.00 | 12,000 | |
| | - Allowance for filling pool to activate compound, including removal | 1 sum | 6,000.00 | 6,000 | |
| 16 | Allowance for 10 mil vapour barrier, 100mm h/d rigid insulation, compacted granular | 3,471 m2 | 115.00 | 399,200 | |
| 17 | Allowance for 10 mil vapour barrier, 100mm h/d rigid insulation to pool walls | 369 m2 | 110.00 | 40,600 | |
| 18 | Steel stair down to service room level | 2 flight | 8,000.00 | 16,000 | |
| A21 Lowest Floor Construction | | TOTAL : \$ | 3,471 m2 | 434.77 | 1,509,100 |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|----------------|
| A22 Upper Floor Construction | | | | |
| 1 Concrete topping on metal deck c/w welded wire mesh | 903 m2 | 180.00 | 162,500 | |
| 2 Concrete topping on metal deck c/w welded wire mesh, tiered construction to spectator seating | 180 m2 | 240.00 | 43,200 | |
| 3 Structural support to above | | | | |
| - OWSJ, beams, columns | 1,083 m2 | 486.70 | 527,100 | |
| - Miscellaneous metals, connections, consumables | 59,565 kg | 8.00 | 476,500 | |
| | 5,957 kg | 8.50 | 50,600 | |
| 4 Concrete filled metal pan stairs c/w painted steel pipe handrails, public access | 2 flight | 12,000.00 | 24,000 | |
| 5 Concrete filled metal pan stairs c/w painted steel pipe handrails to upper service space | 1 flight | 12,000.00 | 12,000 | |
| A22 Upper Floor Construction | TOTAL : \$ | 1,083 m2 | 709.88 | 768,800 |

**Yellowknife Aquatic Centre
25m Pool, 6 Lane
Yellowknife, NWT**

Report date : October 2020

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| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|------------------|
| A23 Roof Construction | | | | |
| 1 38mm acoustical metal deck, galvanized to Natatorium | 1,904 m2 | 52.00 | 99,000 | |
| 2 Structural support to above, galvanized | | | | |
| - OWSJ, beams, columns | 1,904 m2 | 746.30 | 1,420,900 | |
| - Miscellaneous metals, connections, consumables | 142,800 kg | 9.00 | 1,285,200 | |
| - Miscellaneous metals, connections, consumables | 14,280 kg | 9.50 | 135,700 | |
| 3 38mm metal deck, other areas | 1,567 m2 | 45.00 | 70,500 | |
| 4 Structural support to above | | | | |
| - OWSJ, beams, columns | 1,567 m2 | 486.80 | 762,800 | |
| - Miscellaneous metals, connections, consumables | 86,185 kg | 8.00 | 689,500 | |
| - Miscellaneous metals, connections, consumables | 8,619 kg | 8.50 | 73,300 | |
| 5 Roof overhang, measured with projections | | nil | | |
| A23 Roof Construction | TOTAL : \$ | 3,471 m2 | 677.96 | 2,353,200 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|--|----------------------|----------------------------|---------------|------------------|
| A32 Walls Above Grade | | | | |
| 1 EW1, 22 gauge corrugated metal on 17mm furring, weather barrier, 50+100mm rigid insulation, Z-girts, self adhesive a/v barrier c/w primer, 13mm sheathing, 152mm wind bearings studs, 16mm type X gypsum bd. | 1,351 m ² | 625.00 | 844,400 | |
| 2 EW2, premium cladding system, 17mm furring, weather barrier, 50+100mm rigid insulation, Z-girts, self adhesive a/v barrier c/w primer, 13mm sheathing, 152mm wind bearings studs, 16mm type X gypsum bd. | 579 m ² | 710.00 | 411,100 | |
| 3 Allowance for sealants, foamed-in-place insulation, exterior painting, etc., | 1,930 m ² | 35.00 | 67,600 | |
| A32 Walls Above Grade | TOTAL : \$ | 1,930 m² | 685.54 | 1,323,100 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|---------------|-----------------|------------------|
| A33 Windows & Entrances | | | | |
| 1 Triple glazed windows and curtain wall in fibreglass framing | 508 m2 | 2,500.00 | 1,270,000 | |
| 2 Insulated hollow metal doors c/w frames, standard hardware | 4 no. | 3,000.00 | 12,000 | |
| 3 Glazed aluminum doors c/w frames, standard hardware | 4 no. | 4,200.00 | 16,800 | |
| 4 Overhead door to service room, manually operated | 1 no. | 11,000.00 | 11,000 | |
| 5 Allowance for hardware upgrades | 8 no. | 1,000.00 | 8,000 | |
| 6 Push button barrier free door operators | 1 no. | 3,500.00 | 3,500 | |
| 7 Louvres, by mechanical | | nil | | |
| A33 Windows & Entrances | TOTAL : \$ | 534 m2 | 2,474.34 | 1,321,300 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|---|---------------------|-----------|-----------|---------|
| A34 Roof Coverings | | | | |
| 1 4mm MBM cap, 3mm MBM base, 3mm board mech. fastened, sloped insulation, 250mm rigid insulation, air barrier, 13mm primed deck boards | 3,471 m2 | 390.00 | 1,353,700 | |
| 2 Roof overhang, measured with projections | | nil | | |
| A34 Roof Coverings | TOTAL : \$ 3,471 m2 | 390.00 | 1,353,700 | |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|------------------|---------------|
| A35 Projections | | | | |
| 1 Allowance for galvanized exit stair c/w guard, handrails, foundations, at service entry | 1 flight | 10,000.00 | 10,000 | |
| 2 Dock bumpers at service o/h doors | 1 set | 2,000.00 | 2,000 | |
| 3 Allowance for concrete fill steel bollards | 8 no. | 600.00 | 4,800 | |
| A35 Projections | TOTAL : \$ | 1 Sum | 16,800.00 | 16,800 |

| B1 PARTITIONS & DOORS | | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|------------------|----------------|----------------|
| B11 Partitions | | | | | |
| 1 Typical partition, 16mm type X gypsum board both sides | | 1,660 m2 | 210.00 | 348,600 | |
| 2 Typical partition, service areas | | 958 m2 | 270.00 | 258,700 | |
| 3 Elevator shaft walls | | 81 m2 | 330.00 | 26,700 | |
| 4 Glazed partition to lobby, etc., | | 249 m2 | 800.00 | 199,200 | |
| 5 Allowance for firestopping, solid blocking, acoustical sealants, etc., | | 2,948 m2 | 18.00 | 53,100 | |
| 6 Operable partitions, not indicated | | | nil | | |
| B11 Partitions | TOTAL : \$ | 2,948 m2 | 300.64 | 886,300 | |

| B1 PARTITIONS & DOORS | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|-----------------|----------------|
| B12 Doors | | | | |
| 1 Hollow metal doors c/w frames, standard hardware | 28 no. | 2,400.00 | 67,200 | |
| 2 Glazed aluminum doors c/w frames, standard hardware | 6 no. | 3,300.00 | 19,800 | |
| 3 Solid core wood doors c/w frames, standard hardware | 8 no. | 2,300.00 | 18,400 | |
| 4 Hollow metal doors to crawl space c/w frames, standard hardware | 3 no. | 2,500.00 | 7,500 | |
| 5 Push button barrier free door operators | 1 no. | 3,500.00 | 3,500 | |
| 6 Allowance for hardware upgrades | 45 no. | 1,000.00 | 45,000 | |
| B12 Doors | TOTAL : \$ | 45 No | 3,586.67 | 161,400 |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|----------------|
| B21 Floor Finishes | | | | |
| 1 Ceramic tile | 977 m2 | 225.00 | 219,800 | |
| 2 Allowance for special tiles, markings to above | | allow | 30,000 | |
| 3 Pools, ceramic tile c/w membrane | 827 m2 | 455.70 | 376,900 | |
| - Pool bottom | 827 m2 | 225.00 | 186,100 | |
| - Pool walls | 369 m2 | 225.00 | 83,000 | |
| - Edge tile c/w gutter | 217 m | 460.00 | 99,800 | |
| - Allowance for stair, lane, etc., special tile, warning strips, etc. | | allow | 8,000 | |
| 4 Sheet flooring | 395 m2 | 110.00 | 43,500 | |
| 5 Rubber tile flooring | 130 m2 | 120.00 | 15,600 | |
| 6 Sealer/hardener to exposed concrete | 1,276 m2 | 40.00 | 51,000 | |
| 7 Epoxy flooring c/w cove base | 47 m2 | 110.00 | 5,200 | |
| B21 Floor Finishes | TOTAL : \$ | 4,554 m2 | 162.93 | 742,000 |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|----------------|
| B22 Ceiling Finishes | | | | |
| 1 Paint to exposed structure | 1,323 m2 | 50.00 | 66,200 | |
| 2 Finish to Natatorium | 750 m2 | 250.00 | 187,500 | |
| 3 Suspended gypsum board c/w paint finish | 1,200 m2 | 135.00 | 162,000 | |
| 4 Suspended acoustic tile system | 1,281 m2 | 60.00 | 76,900 | |
| 5 Extra over to above for painted gypsum board bulkheads | 800 m2 | 160.00 | 128,000 | |
| 6 Allowance for features, clouds, acoustical baffles, etc., | | allow | 20,000 | |
| B22 Ceiling Finishes | TOTAL : \$ | 4,554 m2 | 140.67 | 640,600 |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|--------------|----------------|
| B23 Wall Finishes | | | | |
| 1 Exposed cedar to steam room | 75 m2 | 135.00 | 10,100 | |
| 2 Allowance for epoxy paint | 600 m2 | 75.00 | 45,000 | |
| 3 Ceramic tile to washrooms, changerooms, etc., | 486 m2 | 190.00 | 92,300 | |
| 4 Wall covering to Natatorium, c/w 300mm high ceramic base | 1,255 m2 | 85.00 | 106,700 | |
| 5 Paint | 5,646 m2 | 40.00 | 225,800 | |
| 6 Intumescent paint to exposed structure to Natatorium, change rooms, etc., | | allow | 40,000 | |
| 7 Allowance for other finishes, upgrades, etc., | | allow | 20,000 | |
| B23 Wall Finishes | TOTAL : \$ | 8,054 m2 | 67.04 | 539,900 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|----------------|
| B31 Fittings & Fixtures | | | | |
| 1 Washroom accessories, allowance | 1 sum | 30,000.00 | 30,000 | |
| 2 Washroom and change room partitions, solid phenolic | 1 sum | 58,000.00 | 58,000 | |
| 3 Millwork | 1 sum | 160,000.00 | 160,000 | |
| 4 Manually operated blinds, exterior | 508 m2 | 100.00 | 50,800 | |
| 5 Lockers | 1 sum | 53,000.00 | 53,000 | |
| 6 Interior signage and wayfinding | 1 sum | 40,000.00 | 40,000 | |
| 7 Exterior signage | 1 sum | 50,000.00 | 50,000 | |
| 8 Janitor accessories | 1 sum | 2,200.00 | 2,200 | |
| 9 Corner guards, protection, etc., | 1 sum | 20,000.00 | 20,000 | |
| B31 Fittings & Fixtures | TOTAL : \$ | 4,554 m2 | 101.89 | 464,000 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|--------------|----------------|
| B32 Equipment | | | | |
| 1 Wet sauna equipment | 1 sum | 15,000.00 | 15,000 | |
| 2 Turnstile, security system | 1 sum | 17,000.00 | 17,000 | |
| 3 Security grille to canteen | 1 sum | 4,000.00 | 4,000 | |
| 4 Mechanical access doors | 1 sum | 7,000.00 | 7,000 | |
| 5 Spectator seating | 180 m2 | 352.80 | 63,500 | |
| - Guard, including wheel chair areas | 41 m | 1,200.00 | 49,200 | |
| - Bench seating | 130 m | 110.00 | 14,300 | |
| 6 Other equipment and loose furniture, not included | | nil | | |
| 7 Gym and fitness equipment, not included | | nil | | |
| B32 Equipment | TOTAL : \$ | 4,554 m2 | 23.39 | 106,500 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|--------------|---------------------|------------------|
| B33 Pool Equipment | | | | |
| 1 Therapy pool | 1 sum | 230,000.00 | 230,000 | |
| 2 Lap pool, 25m | 1 sum | 120,000.00 | 120,000 | |
| 3 Leisure pool | 1 sum | 600,000.00 | 600,000 | |
| 4 Pool equipment miscellaneous, mobilization, commissioning, shop drawings, testing, etc., | 1 sum | 150,000.00 | 150,000 | |
| B33 Pool Equipment | TOTAL : \$ | 1 Sum | 1,100,000.00 | 1,100,000 |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|-----------------|------------------|---------------|----------------|
| B34 Elevator 1 Two stop front loading elevator | 1 no. | 120,000.00 | 120,000 | |
| B34 Elevator | TOTAL : \$ | 1 No | 120,000.00 | 120,000 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|----------|------------|-----------|---------|
| C11 Pool Plumbing & Drainage | | | | |
| 1 25m lane lap pool water supply & filtration system | 1 sum | 410,000.00 | 410,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 380,000.00 | 380,000 | |
| - Allow for pool water system controls | 1 sum | 20,000.00 | 20,000 | |
| 2 Leisure pool water supply & filtration system | 1 sum | 635,000.00 | 635,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 600,000.00 | 600,000 | |
| - Allow for pool water system controls | 1 sum | 25,000.00 | 25,000 | |
| 3 Therapy pool water supply & filtration system | 1 sum | 230,000.00 | 230,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 200,000.00 | 200,000 | |
| - Allow for pool water system controls | 1 sum | 20,000.00 | 20,000 | |
| 4 Pool drainage and backwash system | 1 sum | 230,000.00 | 230,000 | |
| - Under ground pool drainage and back wash piping, deck drains, skimmers, pumps etc. (all 3 pools) | 1 sum | 230,000.00 | 230,000 | |
| 5 Pool chemical treatment - Calcium hyochlorite feed system | 1 sum | 55,000.00 | 55,000 | |
| 6 Pool chemical treatment - Sodium bisulphate feed system | 1 sum | 30,000.00 | 30,000 | |
| 7 Pool chemical supply, 1 year | 1 sum | 75,000.00 | 75,000 | |
| 8 Pool chemical treatment - CO2 injection system, not included | | nil | | |
| Carried Forward : | | | 1,665,000 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|---------------------|-------------------|-----------|---------|
| C11 Pool Plumbing & Drainage (Continued) | | Brought Forward : | 1,665,000 | |
| 9 Pool plumbing & drainage miscellaneous such as mobilization, start-up, cleaning, drawings , manuals, tagging, identification, testing, verification etc. | 1 sum | 80,000.00 | 80,000 | |
| C11 Pool Plumbing & Drainage | TOTAL : \$ 4,554 m2 | 383.18 | 1,745,000 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| C12 Plumbing & Drainage | | | | |
| 1 Plumbing fixtures, ultra low flow & low flush | 53 no. | 1,724.50 | 91,400 | |
| - Water closet | 23 no. | 2,200.00 | 50,600 | |
| - Lavatory c/w faucet | 12 no. | 1,600.00 | 19,200 | |
| - Shower head & balancing valve | 18 no. | 1,200.00 | 21,600 | |
| 2 Domestic water (hot & cold) | 1 sum | 200,000.00 | 200,000 | |
| - Water entry assembly | 1 sum | 10,000.00 | 10,000 | |
| - DCW, DHWS & DHWR piping, pumps, insulation, fixture connections etc. | 1 sum | 140,000.00 | 140,000 | |
| - DHW pre heating using HX from backwashing or draining pools | 1 sum | 20,000.00 | 20,000 | |
| - DHW water heaters | 1 sum | 30,000.00 | 30,000 | |
| 3 Sanitary drainage | 1 sum | 240,000.00 | 240,000 | |
| - Above & under ground SAN drainage and vent piping, floor drains, cleanouts, sump pumps etc. | 1 sum | 240,000.00 | 240,000 | |
| 4 Grey water harvesting from pool change rooms fixtures | 1 sum | 80,000.00 | 80,000 | |
| - Allow for filters, UV treatment, tanks, pumps, piping, valves, connections etc. | 1 sum | 80,000.00 | 80,000 | |
| 5 Storm drainage | 1 sum | 100,000.00 | 100,000 | |
| - Allow for roof drains, RWLs, insulation, U/G drainage piping, cleanouts etc. | 1 sum | 100,000.00 | 100,000 | |
| 6 Fuel oil supply for back up heating boilers | 1 sum | 120,000.00 | 120,000 | |
| - Allow for 9600G outdoor oil tank, piping, valves, filters, pumps, day tanks & connections to boilers | 1 sum | 120,000.00 | 120,000 | |
| 7 Plumbing & drainage miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification, testing, verification etc. | 1 sum | 30,000.00 | 30,000 | |
| C12 Plumbing & Drainage | TOTAL : \$ | 4,554 m2 | 189.15 | 861,400 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|--------------|----------------|
| C13 Fire Protection | | | | |
| 1 Incoming FW supply c/w backflow preventer fed directly from City water main | 1 sum | 15,000.00 | 15,000 | |
| 2 FW main header, zone valves, drain connections etc. | 1 sum | 12,000.00 | 12,000 | |
| 3 Fire department connection c/w dip check valve & piping | 1 sum | 10,000.00 | 10,000 | |
| 4 Fire water/sprinkler main piping | 1 sum | 40,000.00 | 40,000 | |
| 5 Sprinkler system c/w piping & heads | 4,554 m2 | 45.00 | 204,900 | |
| 6 Allow for fire extinguishers | 1 sum | 10,000.00 | 10,000 | |
| 7 Fire protection miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification, testing, verification etc. | 1 sum | 20,000.00 | 20,000 | |
| 8 Note:- Fire pump not included | | nil | | |
| C13 Fire Protection | TOTAL : \$ | 4,554 m2 | 68.49 | 311,900 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|---|----------|------------|-----------|---------|
| C14 HVAC | | | | |
| 1 Building heating | 1 sum | 867,600.00 | 867,600 | |
| - Note:- Primary heating source from existing biomass district heating system, expected load 2079kW | | incl. | | |
| - Oil burning boiler back up system c/w two 1250kW boilers | 1 sum | 230,000.00 | 230,000 | |
| - Allow for plate & frame heat exchanger, pumps, piping, valves, insulation, terminals & connection | 4,554 m2 | 140.00 | 637,600 | |
| 2 Pool water heating | 1 sum | 96,000.00 | 96,000 | |
| - Dedicated heat exchanger for 25m competition pool, 0.3 deg.C./hr, allow | 1 no. | 26,000.00 | 26,000 | |
| - Dedicated heat exchanger for leisure pool, 1.1 deg.C./hr, allow | 1 no. | 15,000.00 | 15,000 | |
| - Dedicated heat exchanger for therapy pool, 2.8 deg.C./hr, allow | 1 no. | 25,000.00 | 25,000 | |
| - Allow for piping and connections to base building heating system | 1 sum | 30,000.00 | 30,000 | |
| 3 Dedicated cooling for server room | 1 sum | 12,000.00 | 12,000 | |
| - Split air conditioner c/w outdoor condenser | 1 sum | 12,000.00 | 12,000 | |
| 4 Natatorium (pool area & all associated decks) ventilation | 1 sum | 980,000.00 | 980,000 | |
| - Air handling unit AHU-1(OA) 30,500 l/s c/w heat recovery, SF, EF, 318 kW HC & 71kW DX cooling | 1 no. | 680,000.00 | 680,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 300,000.00 | 300,000 | |
| 5 Administration, multipurpose rooms and canteen ventilation | 1 sum | 300,000.00 | 300,000 | |
| - Air handling unit AHU-2(ERV) c/w heat recovery, HW heting & DX cooling, 3600 l/s | 1 no. | 140,000.00 | 140,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 160,000.00 | 160,000 | |
| 6 2nd floor office ventilation | 1 sum | 100,000.00 | 100,000 | |
| - Air handling unit AHU-3 c/w HW heting & DX cooling, 1600 l/s | 1 no. | 40,000.00 | 40,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 60,000.00 | 60,000 | |
| Carried Forward : | | | 2,355,600 | |

| C1 MECHANICAL | | Quantity | Unit rate | Amount | Remarks |
|-----------------------------|--|----------------------------|--------------------------|------------------|---------|
| C14 HVAC (Continued) | | | Brought Forward : | 2,355,600 | |
| 7 | Canteen dedicated exhaust system - Allow for exhaust fan, ductwork, hoods, louvers, fire wrap etc. | 1 sum | 40,000.00 | 40,000 | |
| | | 1 sum | 40,000.00 | 40,000 | |
| 8 | Change rooms and washrooms exhaust - Allow for EA ductwork, grilles, tie into main pool area heat recovery systems | 1 sum | 120,000.00 | 120,000 | |
| | | 1 sum | 120,000.00 | 120,000 | |
| 9 | Miscellaneous exhaust and ventilation - Allow for chlorine room exhaust and ventilation - Allow for service spaces exhaust and ventilation | 1 sum | 75,000.00 | 75,000 | |
| | | 1 sum | 15,000.00 | 15,000 | |
| | | 1 sum | 60,000.00 | 60,000 | |
| 10 | HVAC miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification etc. | 1 sum | 40,000.00 | 40,000 | |
| 11 | Testing, adjusting, balancing and commissioning | 1 sum | 140,000.00 | 140,000 | |
| C14 HVAC | | TOTAL : \$ 4,554 m2 | 608.39 | 2,770,600 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--------------------------|---------------------|------------|---------|---------|
| C15 Controls | | | | |
| 1 Allow for DDC controls | 1 sum | 460,000.00 | 460,000 | |
| C15 Controls | TOTAL : \$ 4,554 m2 | 101.01 | 460,000 | |

| C2 ELECTRICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| C21 Service & Distribution | | | | |
| 1 Service & distribution, 800A 347/600V 3Ph 4w | 1 sum | 400,000.00 | 400,000 | |
| 2 Standby diesel generator, 500kW 347/600V 3Ph inside building c/w 800A ATS, load bank etc | 1 sum | 400,000.00 | 400,000 | |
| 3 Electrical Misc. | 1 sum | 50,000.00 | 50,000 | |
| - Permits, fees & inspection | 1 sum | 8,000.00 | 8,000 | |
| - Drawings & manuals | 1 sum | 10,000.00 | 10,000 | |
| - Sealing & fire-stopping | 1 sum | 2,000.00 | 2,000 | |
| - Mobilization | 1 sum | 30,000.00 | 30,000 | |
| C21 Service & Distribution | TOTAL : \$ | 4,554 m2 | 186.65 | 850,000 |

| C2 ELECTRICAL | | Quantity | Unit rate | Amount | Remarks |
|---------------------------------|--------------------------------------|---------------------|-----------|---------|---------|
| C22 Lighting, Devices & Heating | | | | | |
| 1 | Light fixtures | 4,554 m2 | 100.00 | 455,400 | |
| 2 | Exit & emergency lighting | 1 sum | 49,900.00 | 49,900 | |
| 3 | Lighting controls | 4,554 m2 | 15.00 | 68,300 | |
| 4 | Power outlets, devices & connections | 4,554 m2 | 35.00 | 159,400 | |
| 5 | Connections to mechanical equipment | 55 no. | 1,000.00 | 55,000 | |
| 6 | Electric heating, not included | | nil. | | |
| 7 | Under water lighting, not included | | nil. | | |
| C22 Lighting, Devices & Heating | | TOTAL : \$ 4,554 m2 | 173.03 | 788,000 | |

| C2 ELECTRICAL | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|----------------|
| C23 Systems & Ancillaries | | | | |
| 1 FA system, addressable 2 stage c/w battery charger, standby batteries, connection to DACT & monitored by local ULC approved monitoring company, 4554m2 @ \$25 | 1 sum | 114,000.00 | 114,000 | |
| 2 Combined telephone & PA system | 1 sum | 45,000.00 | 45,000 | |
| 3 Communication system (voice/data) | 1 sum | 65,000.00 | 65,000 | |
| 4 Door access controls system | 1 sum | 36,000.00 | 36,000 | |
| 5 CCTV system | 1 sum | 70,000.00 | 70,000 | |
| 6 Intrusion alarm system | 1 sum | 40,000.00 | 40,000 | |
| 7 CableTV system | 1 sum | 36,000.00 | 36,000 | |
| 8 Clock system, allow | 1 sum | 5,000.00 | 5,000 | |
| 9 Staff alarm system, allow | 1 sum | 5,000.00 | 5,000 | |
| 10 Sound system, allow | 1 sum | 36,000.00 | 36,000 | |
| 11 Misc. systems | 1 sum | 26,000.00 | 26,000 | |
| 12 Lightning protection system, not included | | nil. | | |
| C23 Systems & Ancillaries | TOTAL : \$ | 4,554 m2 | 104.96 | 478,000 |

| D1 SITE WORK | | Quantity | Unit rate | Amount | Remarks |
|-----------------------------|---|---------------------|-----------|---------|---------|
| D11 Site Development | | | | | |
| 1 | Allowance for clearing, grubbing, cut and fill, as required | 6,700 m2 | 35.00 | 234,500 | |
| 2 | Asphalt paving | 4,300 m2 | 85.00 | 365,500 | |
| 3 | Demarkation to above | | allow | 12,000 | |
| 4 | Allowance for concrete deck at entrance | 60 m2 | 240.00 | 14,400 | |
| 5 | Allowance restoration, soft landscaping | 2,300 m2 | 30.00 | 69,000 | |
| 6 | Allowance for restoration at new service connections | | allow | 30,000 | |
| D11 Site Development | | TOTAL : \$ 6,700 m2 | 108.27 | 725,400 | |

| D1 SITE WORK | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|--------------|-------------------|----------------|
| D12 Mechanical Site Services | | | | |
| 1 Water supply (fire & domestic) | 1 sum | 250,000.00 | 250,000 | |
| - Allow for water supply from city water main c/w U/G piping, valves, valve chambers, connections etc. | 1 sum | 250,000.00 | 250,000 | |
| 2 Sanitary drainage disposal | 1 sum | 150,000.00 | 150,000 | |
| - Allow for new manholes, underground piping, connection to existing mains etc. | 1 sum | 150,000.00 | 150,000 | |
| 3 Storm drainage disposal | 1 sum | 200,000.00 | 200,000 | |
| - Relocate manhole and culvert at north end of the site | 1 allow | 80,000.00 | 80,000 | |
| - Allow for new manholes, catchbasins, underground piping & connections | 1 sum | 120,000.00 | 120,000 | |
| 4 Fuel oil storage for building heating - included in C12 Plumbing & Drainage | | incl. | | |
| 5 District heating supply to new aquatic centre (heating load 2079kW) - allow for 150mm dia. U/G pre-insulated HWS/HWR piping, valves, connection to existing biomass district heating system etc. - \$800,000 separate budget | | nil | | |
| D12 Mechanical Site Services | TOTAL : \$ | 1 Sum | 600,000.00 | 600,000 |

| D1 SITE WORK | Quantity | Unit rate | Amount | Remarks |
|--|------------|-----------|------------|---------|
| D13 Electrical Site Services | | | | |
| 1 Incoming O/H primary power c/w Utility TX, pad, grounding, rock excavation etc | 1 sum | 55,000.00 | 55,000 | |
| 2 Incoming U/G secondary power | 1 sum | 25,000.00 | 25,000 | |
| 3 Incoming telecom services (CableTV, Internet, Tel) | 1 sum | 20,000.00 | 20,000 | |
| 4 Site lighting | 1 sum | 20,000.00 | 20,000 | |
| D13 Electrical Site Services | TOTAL : \$ | 1 Sum | 120,000.00 | 120,000 |

**Appendix
D - Detailed Elemental Estimate - 6 Lane 50m Pool**

| Project | Yellowknife Aquatic Centre | | | | | Report date | 29 Oct 2020 | |
|---|--------------------------------------|----------------|--------------|------------------|----------------------|--------------------|-------------|-------|
| Location | 50m Pool, 6 Lane Yellowknife, NWT | | | | | Page No. | 1 | |
| Owner | City of Yellowknife | | | | | Bldg Type | 550 | |
| Consultant | Taylor Architecture Group | | | | | C.T. Index | 0.0 | |
| | ELEMENTAL COST SUMMARY | | | | | GFA | 5,192 m2 | |
| Element | Ratio to GFA | Elemental Cost | | Elemental Amount | | Rate per m2 | | % |
| | | Quantity | Unit rate | Sub-Total | Total | Sub-Total | Total | |
| A SHELL | | 5,192 m2 | | | 11,910,700 | | 2,294.05 | 29.7 |
| A1 SUBSTRUCTURE | | | | | 2,122,900 | | 408.88 | 5.3 |
| A11 Foundations | 0.810 | 4,196 m2 | 265.00 | 1,111,100 | | 214.00 | | |
| A12 Basement Excavation | 0.810 | 4,196 m2 | 196.00 | 823,800 | | 158.67 | | |
| A13 Special Conditions | 0.000 | 1 Sum | 188,000.00 | 188,000 | | 36.21 | | |
| A2 STRUCTURE | | | | | 5,396,100 | | 1,039.31 | 13.5 |
| A21 Lowest Floor Construction | 0.810 | 4,196 m2 | 421.00 | 1,768,500 | | 340.62 | | |
| A22 Upper Floor Construction | 0.190 | 996 m2 | 714.00 | 710,900 | | 136.92 | | |
| A23 Roof Construction | 0.810 | 4,196 m2 | 695.00 | 2,916,700 | | 561.77 | | |
| A3 EXTERIOR ENCLOSURE | | | | | 4,391,700 | | 845.86 | 11.0 |
| A31 Walls Below Grade | | | | 0 | | 0.00 | | |
| A32 Walls Above Grade | 0.390 | 2,009 m2 | 686.00 | 1,377,200 | | 265.25 | | |
| A33 Windows & Entrances | 0.110 | 550 m2 | 2,475.00 | 1,361,300 | | 262.19 | | |
| A34 Roof Coverings | 0.810 | 4,196 m2 | 390.00 | 1,636,400 | | 315.18 | | |
| A35 Projections | 0.000 | 1 Sum | 16,800.00 | 16,800 | | 3.24 | | |
| B INTERIORS | | 5,192 m2 | | | 6,472,000 | | 1,246.53 | 16.2 |
| B1 PARTITIONS & DOORS | | | | | 1,672,700 | | 322.17 | 4.2 |
| B11 Partitions | 0.710 | 3,682 m2 | 412.00 | 1,516,100 | | 292.01 | | |
| B12 Doors | 0.010 | 42 No | 3,729.00 | 156,600 | | 30.16 | | |
| B2 FINISHES | | | | | 2,831,200 | | 545.30 | 7.1 |
| B21 Floor Finishes | 1.000 | 5,192 m2 | 234.00 | 1,216,200 | | 234.24 | | |
| B22 Ceiling Finishes | 1.000 | 5,192 m2 | 192.00 | 995,300 | | 191.70 | | |
| B23 Wall Finishes | 1.870 | 9,713 m2 | 64.00 | 619,700 | | 119.36 | | |
| B3 FITTINGS & EQUIPMENT | | | | | 1,968,100 | | 379.06 | 4.9 |
| B31 Fittings & Fixtures | 1.000 | 5,192 m2 | 100.00 | 517,400 | | 99.65 | | |
| B32 Equipment | 1.000 | 5,192 m2 | 21.00 | 110,700 | | 21.32 | | |
| B33 Pool Equipment | 0.000 | 1 Sum | 1,220,000.00 | 1,220,000 | | 234.98 | | |
| B34 Elevator | 0.000 | 1 No | 120,000.00 | 120,000 | | 23.11 | | |
| C SERVICES | | 5,192 m2 | | | 9,793,900 | | 1,886.34 | 24.4 |
| C1 MECHANICAL | | | | | 7,448,900 | | 1,434.69 | 18.6 |
| C11 Pool Plumbing & Drainage | 1.000 | 5,192 m2 | 428.00 | 2,223,000 | | 428.16 | | |
| C12 Plumbing & drainage | 1.000 | 5,192 m2 | 175.00 | 907,400 | | 174.77 | | |
| C13 Fire Protection | 1.000 | 5,192 m2 | 69.00 | 359,600 | | 69.26 | | |
| C14 HVAC | 1.000 | 5,192 m2 | 666.00 | 3,458,900 | | 666.20 | | |
| C15 Controls | 1.000 | 5,192 m2 | 96.00 | 500,000 | | 96.30 | | |
| C2 ELECTRICAL | | | | | 2,345,000 | | 451.66 | 5.9 |
| C21 Service & Distribution | 1.000 | 5,192 m2 | 178.00 | 925,000 | | 178.16 | | |
| C22 Lighting, Devices & Heating | 1.000 | 5,192 m2 | 172.00 | 893,000 | | 172.00 | | |
| C23 Systems & Ancillaries | 1.000 | 5,192 m2 | 102.00 | 527,000 | | 101.50 | | |
| NET BUILDING COST - EXCLUDING SITE | | | | | \$ 28,176,600 | | 5,426.93 | 70.3 |
| D SITE & ANCILLARY WORK | | 5,192 m2 | | | 1,445,400 | | 278.39 | 3.6 |
| D1 SITE WORK | | | | | 1,445,400 | | 278.39 | 3.6 |
| D11 Site Development | 1.290 | 6,700 m2 | 108.00 | 725,400 | | 139.71 | | |
| D12 Mechanical Site Services | 0.000 | 1 Sum | 600,000.00 | 600,000 | | 115.56 | | |
| D13 Electrical Site Services | 0.000 | 1 Sum | 120,000.00 | 120,000 | | 23.11 | | |
| D2 ANCILLARY WORK | | | | 0 | 0 | | 0.00 | 0.0 |
| D21 Demolitions | | | | | | 0.00 | | |
| NET BUILDING COST - INCLUDING SITE | | | | | \$ 29,622,000 | | 5,705.32 | 73.9 |
| Z1 GENERAL REQUIREMENTS & FEE | | | | | 10,456,600 | | 2,013.98 | 26.1 |
| Z11 General Requirements | | 23.0 % | | 6,813,100 | | 1,312.23 | | |
| Z12 Fee | | 10.0 % | | 3,643,500 | | 701.75 | | |
| TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES | | | | | \$ 40,078,600 | | 7,719.30 | 100.0 |
| Z2 ALLOWANCES | | | | | 11,767,000 | | 2,266.37 | |
| Z21 Design & Pricing Allowance | | 12.0 % | | 4,809,400 | | 926.31 | | |
| Z22 Escalation Allowance | | 10.0 % | | 4,488,800 | | 864.56 | | |
| Z23 Construction Allowance | | 5.0 % | | 2,468,800 | | 475.50 | | |
| TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES | | | | | \$ 51,845,600 | | 9,985.67 | |
| - VALUE ADDED TAX (GST/HST) | | | | | 0 | | 0.00 | |
| Value Added Tax (GST/HST) | | 0.0 % | | 0 | | 0.00 | | |
| TOTAL CONSTRUCTION ESTIMATE | | | | | \$ 51,845,600 | \$ 9,985.67 | | |

| A1 SUBSTRUCTURE | | Quantity | Unit rate | Amount | Remarks |
|------------------------|--|----------------------|----------------------------|---------------|------------------|
| A11 Foundations | | | | | |
| 1 | Allowance for clearing, grubbing | 4,196 m ² | 35.00 | 146,900 | |
| 2 | Reinforced concrete perimeter strip footing, 250 x 800mm | 262 m | 215.00 | 56,300 | |
| 3 | Reinforced concrete interior strip footing, 250 x 800mm, allow | 82 m | 215.00 | 17,600 | |
| 4 | Reinforced concrete perimeter pad footing, 250 x 1000 x 1000mm | 36 no. | 420.00 | 15,100 | |
| 5 | Reinforced concrete interior pad footing, 250 x 1000 x 1000mm | 48 no. | 420.00 | 20,200 | |
| 6 | Reinforced concrete frost walls, 200mm thick, see also walls below grade | 601 m ² | 610.00 | 366,600 | |
| 7 | Reinforced concrete interior walls, 200mm thick at service room and crawlspace | 131 m ² | 610.00 | 79,900 | |
| 8 | Reinforced concrete pilasters, 500 x 500mm | 36 no. | 1,400.00 | 50,400 | |
| 9 | Reinforced concrete piers, 500 x 500mm | 42 no. | 1,540.00 | 64,700 | |
| 10 | Allowance for 200mm rigid insulation, frost protection to perimeter footings | 480 m ² | 180.00 | 86,400 | |
| 11 | Allowance for waterproofing and parging to o/s face of foundation walls | 601 m ² | 85.00 | 51,100 | |
| 12 | Allowance for 100mm rigid insulation to i/s face of frost walls | 601 m ² | 100.00 | 60,100 | |
| 13 | Reinforced concrete elevator pad c/w pit walls, etc., | 1 no. | 10,000.00 | 10,000 | |
| 14 | Allowance for drainage system | 4,196 m ² | 20.40 | 85,800 | |
| | - Allowance for sump pits | 4 no. | 5,000.00 | 20,000 | |
| | - Allowance for perimeter drainage | 262 m | 45.00 | 11,800 | |
| | - Allowance for interior drainage system | 1,200 m | 45.00 | 54,000 | |
| A11 Foundations | | TOTAL : \$ | 4,196 m² | 264.80 | 1,111,100 |

| A1 SUBSTRUCTURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| A12 Basement Excavation | | | | |
| 1 Allowance for soil excavation to expose bedrock, working spaces, excess material removed from site | 5,640 m3 | 45.00 | 253,800 | |
| 2 Allowance for rock excavation as required for pool depth, services, etc., used as fill | 1,650 m3 | 150.00 | 247,500 | |
| 3 Backfill with Engineered fill below main floor | 2,100 m3 | 85.00 | 178,500 | |
| 4 Backfill with excavated material to o/s of foundations | 3,200 m3 | 45.00 | 144,000 | |
| A12 Basement Excavation | TOTAL : \$ | 4,196 m2 | 196.33 | 823,800 |

| A1 SUBSTRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|------------|-----------|------------|---------|
| A13 Special Conditions | | | | |
| 1 Allowance for removal of loose rock, boulders | | allow | 8,000 | |
| 2 Allowance for dewatering foundations | | allow | 12,000 | |
| 3 Allowance for rock anchors to footings | 453 no. | 150.10 | 68,000 | |
| - Strip footings, 1200mm c/c | 285 no. | 150.00 | 42,800 | |
| - Pad footings, 2 per pad | 168 no. | 150.00 | 25,200 | |
| 4 Allowance for selective blasting and rock removal | | allow | 100,000 | |
| A13 Special Conditions | TOTAL : \$ | 1 Sum | 188,000.00 | 188,000 |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|----------------------|-----------|------------------|---------|
| A21 Lowest Floor Construction | | | | |
| 1 Reinforced concrete slab on grade, allow 150mm thick c/w 10M @ 200mm c/c | 2,925 m ² | 215.00 | 628,900 | |
| 2 Allowance for slab thickening at masonry partitions, trench drains, etc., | | allow | 30,000 | |
| 3 Lap pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 839 m ² | 150.00 | 125,900 | |
| 4 Extra over to above for ramp | 20 m ² | 200.00 | 4,000 | |
| 5 Reinforced concrete walls to above, 300mm thick, average | 134 m ² | 730.00 | 97,800 | |
| 6 Leisure pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 369 m ² | 150.00 | 55,400 | |
| 7 Extra over to above for ramp | 64 m ² | 150.00 | 9,600 | |
| 8 Reinforced concrete walls to above, 300mm thick, average | 218 m ² | 730.00 | 159,100 | |
| 9 Extra over to above for curves, features, etc., | 72 m ² | 100.00 | 7,200 | |
| 10 Allowance for features | | allow | 10,000 | |
| 11 Therapy pool bottom reinforced concrete slab on grade, allow 125mm thick c/w 10M @ 300mm c/c | 63 m ² | 150.00 | 9,500 | |
| 12 Extra over to above for ramp and stairs | 16 m ² | 400.00 | 6,400 | |
| 13 Reinforced concrete walls to above, 300mm thick, average | 66 m ² | 730.00 | 48,200 | |
| 14 Extra over to above for curves, features, etc., | 60 m ² | 100.00 | 6,000 | |
| Carried Forward : | | | 1,198,000 | |

| A2 STRUCTURE | | Quantity | Unit rate | Amount | Remarks |
|---|---|----------------------|----------------------------|------------------|------------------|
| A21 Lowest Floor Construction (Continued) | | | Brought Forward : | 1,198,000 | |
| 15 | Extra over for waterproofing compound to pool areas | 1 sum | 26,000.00 | 26,000 | |
| | - Allowance for compound added to concrete mix | 1 sum | 17,000.00 | 17,000 | |
| | - Allowance for filling pool to activate compound, including removal | 1 sum | 9,000.00 | 9,000 | |
| 16 | Allowance for 10 mil vapour barrier, 100mm h/d rigid insulation, compacted granular | 4,196 m ² | 115.00 | 482,500 | |
| 17 | Allowance for 10 mil vapour barrier, 100mm h/d rigid insulation to pool walls | 418 m ² | 110.00 | 46,000 | |
| 18 | Steel stair down to service room level | 2 flight | 8,000.00 | 16,000 | |
| A21 Lowest Floor Construction | | TOTAL : \$ | 4,196 m² | 421.47 | 1,768,500 |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------|---------|---------|
| A22 Upper Floor Construction | | | | |
| 1 Concrete topping on metal deck c/w welded wire mesh | 816 m2 | 180.00 | 146,900 | |
| 2 Concrete topping on metal deck c/w welded wire mesh, tiered construction to spectator seating | 180 m2 | 240.00 | 43,200 | |
| 3 Structural support to above | | | | |
| - OWSJ, beams, columns | 996 m2 | 486.70 | 484,800 | |
| - Miscellaneous metals, connections, consumables | 54,780 kg | 8.00 | 438,200 | |
| | 5,478 kg | 8.50 | 46,600 | |
| 4 Concrete filled metal pan stairs c/w painted steel pipe handrails, public access | 2 flight | 12,000.00 | 24,000 | |
| 5 Concrete filled metal pan stairs c/w painted steel pipe handrails to upper service space | 1 flight | 12,000.00 | 12,000 | |
| A22 Upper Floor Construction | TOTAL : \$ 996 m2 | 713.76 | 710,900 | |

| A2 STRUCTURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|------------------|
| A23 Roof Construction | | | | |
| 1 38mm acoustical metal deck, galvanized to Natatorium | 2,572 m2 | 52.00 | 133,700 | |
| 2 Structural support to above, galvanized | | | | |
| - OWSJ, beams, columns | 2,572 m2 | 746.30 | 1,919,400 | |
| - Miscellaneous metals, connections, consumables | 192,900 kg | 9.00 | 1,736,100 | |
| - Miscellaneous metals, connections, consumables | 19,290 kg | 9.50 | 183,300 | |
| 3 38mm metal deck, other areas | 1,624 m2 | 45.00 | 73,100 | |
| 4 Structural support to above | | | | |
| - OWSJ, beams, columns | 1,624 m2 | 486.80 | 790,500 | |
| - Miscellaneous metals, connections, consumables | 89,320 kg | 8.00 | 714,600 | |
| - Miscellaneous metals, connections, consumables | 8,932 kg | 8.50 | 75,900 | |
| 5 Roof overhang, measured with projections | | nil | | |
| A23 Roof Construction | TOTAL : \$ | 4,196 m2 | 695.11 | 2,916,700 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|--|---------------------------------|-----------|-----------|---------|
| A32 Walls Above Grade | | | | |
| 1 EW1, 22 gauge corrugated metal on 17mm furring, weather barrier, 50+100mm rigid insulation, Z-girts, self adhesive a/v barrier c/w primer, 13mm sheathing, 152mm wind bearings studs, 16mm type X gypsum bd. | 1,406 m ² | 625.00 | 878,800 | |
| 2 EW2, premium cladding system, 17mm furring, weather barrier, 50+100mm rigid insulation, Z-girts, self adhesive a/v barrier c/w primer, 13mm sheathing, 152mm wind bearings studs, 16mm type X gypsum bd. | 603 m ² | 710.00 | 428,100 | |
| 3 Allowance for sealants, foamed-in-place insulation, exterior painting, etc., | 2,009 m ² | 35.00 | 70,300 | |
| A32 Walls Above Grade | TOTAL : \$ 2,009 m ² | 685.52 | 1,377,200 | |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|---------------|-----------------|------------------|
| A33 Windows & Entrances | | | | |
| 1 Triple glazed windows and curtain wall in fibreglass framing | 524 m2 | 2,500.00 | 1,310,000 | |
| 2 Insulated hollow metal doors c/w frames, standard hardware | 4 no. | 3,000.00 | 12,000 | |
| 3 Glazed aluminum doors c/w frames, standard hardware | 4 no. | 4,200.00 | 16,800 | |
| 4 Overhead door to service room, manually operated | 1 no. | 11,000.00 | 11,000 | |
| 5 Allowance for hardware upgrades | 8 no. | 1,000.00 | 8,000 | |
| 6 Push button barrier free door operators | 1 no. | 3,500.00 | 3,500 | |
| 7 Louvres, by mechanical | | nil | | |
| A33 Windows & Entrances | TOTAL : \$ | 550 m2 | 2,475.09 | 1,361,300 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|------------------|
| A34 Roof Coverings | | | | |
| 1 4mm MBM cap, 3mm MBM base, 3mm board mech. fastened, sloped insulation, 250mm rigid insulation, air barrier, 13mm primed deck boards | 4,196 m2 | 390.00 | 1,636,400 | |
| 2 Roof overhang, measured with projections | | nil | | |
| A34 Roof Coverings | TOTAL : \$ | 4,196 m2 | 389.99 | 1,636,400 |

| A3 EXTERIOR ENCLOSURE | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|------------------|---------------|
| A35 Projections | | | | |
| 1 Allowance for galvanized exit stair c/w guard, handrails, foundations, at service entry | 1 flight | 10,000.00 | 10,000 | |
| 2 Dock bumpers at service o/h doors | 1 set | 2,000.00 | 2,000 | |
| 3 Allowance for concrete fill steel bollards | 8 no. | 600.00 | 4,800 | |
| A35 Projections | TOTAL : \$ | 1 Sum | 16,800.00 | 16,800 |

| B1 PARTITIONS & DOORS | | Quantity | Unit rate | Amount | Remarks |
|-----------------------|--|-------------------|-----------------|---------------|------------------|
| B11 Partitions | | | | | |
| 1 | Typical partition, 16mm type X gypsum board both sides | 1,001 m2 | 210.00 | 210,200 | |
| 2 | Typical partition, service areas | 1,636 m2 | 270.00 | 441,700 | |
| 3 | Elevator shaft walls | 81 m2 | 330.00 | 26,700 | |
| 4 | Glazed partition to lobby, etc., | 964 m2 | 800.00 | 771,200 | |
| 5 | Allowance for firestopping, solid blocking, acoustical sealants, etc., | 3,682 m2 | 18.00 | 66,300 | |
| 6 | Operable partitions, not indicated | | nil | | |
| B11 Partitions | | TOTAL : \$ | 3,682 m2 | 411.76 | 1,516,100 |

| B1 PARTITIONS & DOORS | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|--------------|-----------------|----------------|
| B12 Doors | | | | |
| 1 Hollow metal doors c/w frames, standard hardware | 19 no. | 2,400.00 | 45,600 | |
| 2 Glazed aluminum doors c/w frames, standard hardware | 12 no. | 3,300.00 | 39,600 | |
| 3 Solid core wood doors c/w frames, standard hardware | 8 no. | 2,300.00 | 18,400 | |
| 4 Hollow metal doors to crawl space c/w frames, standard hardware | 3 no. | 2,500.00 | 7,500 | |
| 5 Push button barrier free door operators | 1 no. | 3,500.00 | 3,500 | |
| 6 Allowance for hardware upgrades | 42 no. | 1,000.00 | 42,000 | |
| B12 Doors | TOTAL : \$ | 42 No | 3,728.57 | 156,600 |

| B2 FINISHES | | Quantity | Unit rate | Amount | Remarks |
|---------------------------|---|----------------------------|---------------|------------------|---------|
| B21 Floor Finishes | | | | | |
| 1 | Ceramic tile | 2,430 m2 | 225.00 | 546,800 | |
| 2 | Allowance for special tiles, markings to above | | allow | 30,000 | |
| 3 | Pools, ceramic tile c/w membrane | 1,271 m2 | 401.70 | 510,500 | |
| | - Pool bottom | 1,271 m2 | 225.00 | 286,000 | |
| | - Pool walls | 418 m2 | 225.00 | 94,100 | |
| | - Edge tile c/w gutter | 266 m | 460.00 | 122,400 | |
| | - Allowance for stair, lane, etc., special tile, warning strips, etc. | | allow | 8,000 | |
| 4 | Sheet flooring | 755 m2 | 110.00 | 83,100 | |
| 5 | Rubber tile flooring | 140 m2 | 120.00 | 16,800 | |
| 6 | Sealer/hardener to exposed concrete | 596 m2 | 40.00 | 23,800 | |
| 7 | Epoxy flooring c/w cove base | 47 m2 | 110.00 | 5,200 | |
| B21 Floor Finishes | | TOTAL : \$ 5,192 m2 | 234.24 | 1,216,200 | |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|----------------|
| B22 Ceiling Finishes | | | | |
| 1 Paint to exposed structure | 1,180 m2 | 50.00 | 59,000 | |
| 2 Finish to Natatorium | 2,572 m2 | 250.00 | 643,000 | |
| 3 Suspended gypsum board c/w paint finish | 700 m2 | 135.00 | 94,500 | |
| 4 Suspended acoustic tile system | 680 m2 | 60.00 | 40,800 | |
| 5 Extra over to above for painted gypsum board bulkheads | 800 m2 | 160.00 | 128,000 | |
| 6 Allowance for features, clouds, acoustical baffles, etc., | | allow | 30,000 | |
| B22 Ceiling Finishes | TOTAL : \$ | 5,192 m2 | 191.70 | 995,300 |

| B2 FINISHES | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|--------------|----------------|
| B23 Wall Finishes | | | | |
| 1 Exposed cedar to steam room | 75 m2 | 135.00 | 10,100 | |
| 2 Allowance for epoxy paint | 600 m2 | 75.00 | 45,000 | |
| 3 Ceramic tile to washrooms, changerooms, etc., | 500 m2 | 190.00 | 95,000 | |
| 4 Wall covering to Natatorium, c/w 300mm high ceramic base | 1,291 m2 | 85.00 | 109,700 | |
| 5 Paint | 7,247 m2 | 40.00 | 289,900 | |
| 6 Intumescent paint to exposed structure to Natatorium, change rooms, etc., | | allow | 50,000 | |
| 7 Allowance for other finishes, upgrades, etc., | | allow | 20,000 | |
| B23 Wall Finishes | TOTAL : \$ | 9,713 m2 | 63.80 | 619,700 |

| B3 FITTINGS & EQUIPMENT | | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|------------------|----------------|----------------|
| B31 Fittings & Fixtures | | | | | |
| 1 Washroom accessories, allowance | | 1 sum | 38,000.00 | 38,000 | |
| 2 Washroom and change room partitions, solid phenolic | | 1 sum | 65,000.00 | 65,000 | |
| 3 Millwork | | 1 sum | 185,000.00 | 185,000 | |
| 4 Manually operated blinds, exterior | 542 m2 | | 100.00 | 54,200 | |
| 5 Lockers | | 1 sum | 58,000.00 | 58,000 | |
| 6 Interior signage and wayfinding | | 1 sum | 45,000.00 | 45,000 | |
| 7 Exterior signage | | 1 sum | 50,000.00 | 50,000 | |
| 8 Janitor accessories | | 1 sum | 2,200.00 | 2,200 | |
| 9 Corner guards, protection, etc., | | 1 sum | 20,000.00 | 20,000 | |
| B31 Fittings & Fixtures | TOTAL : \$ | 5,192 m2 | 99.65 | 517,400 | |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|--------------------|----------------------------|--------------|----------------|
| B32 Equipment | | | | |
| 1 Wet sauna equipment | 1 sum | 15,000.00 | 15,000 | |
| 2 Turnstile, security system | 1 sum | 17,000.00 | 17,000 | |
| 3 Security grille to canteen | 1 sum | 4,000.00 | 4,000 | |
| 4 Mechanical access doors | 1 sum | 7,000.00 | 7,000 | |
| 5 Spectator area | 180 m ² | 376.10 | 67,700 | |
| - Guard, including wheelchair areas | 42 m | 1,200.00 | 50,400 | |
| - Bench seating | 157 m | 110.00 | 17,300 | |
| 6 Other equipment and loose furniture, not included | | nil | | |
| 7 Gym and fitness equipment, not included | | nil | | |
| B32 Equipment | TOTAL : \$ | 5,192 m² | 21.32 | 110,700 |

| B3 FITTINGS & EQUIPMENT | | Quantity | Unit rate | Amount | Remarks |
|------------------------------------|--|-----------------|---------------------|------------------|----------------|
| B33 Pool Equipment | | | | | |
| 1 | Therapy pool | 1 sum | 230,000.00 | 230,000 | |
| 2 | Lap pool, 50m | 1 sum | 210,000.00 | 210,000 | |
| 3 | Leisure pool | 1 sum | 600,000.00 | 600,000 | |
| 4 | Pool equipment miscellaneous, mobilization, commissioning, shop drawings, testing, etc., | 1 sum | 180,000.00 | 180,000 | |
| B33 Pool Equipment | TOTAL : \$ | 1 Sum | 1,220,000.00 | 1,220,000 | |

| B3 FITTINGS & EQUIPMENT | Quantity | Unit rate | Amount | Remarks |
|---|-----------------|------------------|---------------|----------------|
| B34 Elevator 1 Two stop front loading elevator | 1 no. | 120,000.00 | 120,000 | |
| B34 Elevator | TOTAL : \$ | 1 No | 120,000.00 | 120,000 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|----------|------------|-----------|---------|
| C11 Pool Plumbing & Drainage | | | | |
| 1 50m lane lap pool water supply & filtration system | 1 sum | 710,000.00 | 710,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 680,000.00 | 680,000 | |
| - Allow for pool water system controls | 1 sum | 20,000.00 | 20,000 | |
| 2 Leisure pool water supply & filtration system | 1 sum | 635,000.00 | 635,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 600,000.00 | 600,000 | |
| - Allow for pool water system controls | 1 sum | 25,000.00 | 25,000 | |
| 3 Therapy pool water supply & filtration system | 1 sum | 230,000.00 | 230,000 | |
| - 65mm DCW make-up connection c/w BFP & water meter | 1 sum | 10,000.00 | 10,000 | |
| - Pool water recirculation pumps, tanks, piping, valves, filters, bubblers, nozzles etc. | 1 sum | 200,000.00 | 200,000 | |
| - Allow for pool water system controls | 1 sum | 20,000.00 | 20,000 | |
| 4 Pool drainage and backwash system | 1 sum | 360,000.00 | 360,000 | |
| - Under ground pool drainage and back wash piping, deck drains, skimmers, pumps etc. (all 3 pools) | 1 sum | 360,000.00 | 360,000 | |
| 5 Pool chemical treatment - Calcium hyochlorite feed system | 1 sum | 70,000.00 | 70,000 | |
| 6 Pool chemical treatment - Sodium bisulphate feed system | 1 sum | 38,000.00 | 38,000 | |
| 7 Pool chemical supply, 1 year | 1 sum | 100,000.00 | 100,000 | |
| 8 Pool chemical treatment - CO2 injection system, not included | | nil | | |
| Carried Forward : | | | 2,143,000 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|---------------------|-------------------|-----------|---------|
| C11 Pool Plumbing & Drainage (Continued) | | Brought Forward : | 2,143,000 | |
| 9 Pool plumbing & drainage miscellaneous such as mobilization, start-up, cleaning, drawings , manuals, tagging, identification, testing, verification etc. | 1 sum | 80,000.00 | 80,000 | |
| C11 Pool Plumbing & Drainage | TOTAL : \$ 5,192 m2 | 428.16 | 2,223,000 | |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| C12 Plumbing & drainage | | | | |
| 1 Plumbing fixtures, ultra low flow & low flush | 56 no. | 1,739.30 | 97,400 | |
| - Water closet | 25 no. | 2,200.00 | 55,000 | |
| - Lavatory c/w faucet | 13 no. | 1,600.00 | 20,800 | |
| - Shower head & balancong valve | 18 no. | 1,200.00 | 21,600 | |
| 2 Domestic water (hot & cold) | 1 sum | 200,000.00 | 200,000 | |
| - Water entry assembly | 1 sum | 10,000.00 | 10,000 | |
| - DCW, DHWS & DHWR piping, pumps, insulation, fixture connections etc. | 1 sum | 140,000.00 | 140,000 | |
| - DHW pre heating using HX from backwashing or draining pools | 1 sum | 20,000.00 | 20,000 | |
| - DHW water heaters | 1 sum | 30,000.00 | 30,000 | |
| 3 Sanitary drainage | 1 sum | 240,000.00 | 240,000 | |
| - Above & under ground SAN drainage and vent piping, floor drains, cleanouts, sump pumps etc. | 1 sum | 240,000.00 | 240,000 | |
| 4 Grey water harvesting from pool change rooms fixtures | 1 sum | 80,000.00 | 80,000 | |
| - Allow for filters, UV treatment, tanks, pumps, piping, valves, connections etc. | 1 sum | 80,000.00 | 80,000 | |
| 5 Storm drainage | 1 sum | 100,000.00 | 100,000 | |
| - Allow for roof drains, RWLs, insulation, U/G drainage piping, cleanouts etc. | 1 sum | 100,000.00 | 100,000 | |
| 6 Fuel oil supply for back up heating boilers | 1 sum | 160,000.00 | 160,000 | |
| - Allow for 13000G outdoor oil tank, piping, valves, filters, pumps, day tanks & connections to boilers | 1 sum | 160,000.00 | 160,000 | |
| 7 Plumbing & drainage miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification, testing, verification etc. | 1 sum | 30,000.00 | 30,000 | |
| C12 Plumbing & drainage | TOTAL : \$ | 5,192 m2 | 174.77 | 907,400 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|--------------|----------------|
| C13 Fire Protection | | | | |
| 1 Incoming FW supply c/w backflow preventer fed directly from City water main | 1 sum | 15,000.00 | 15,000 | |
| 2 FW main header, zone valves, drain connections etc. | 1 sum | 12,000.00 | 12,000 | |
| 3 Fire department connection c/w dip check valve & piping | 1 sum | 10,000.00 | 10,000 | |
| 4 Fire water/sprinkler main piping | 1 sum | 50,000.00 | 50,000 | |
| 5 Sprinkler system c/w piping & heads | 5,192 m2 | 45.00 | 233,600 | |
| 6 Allow for fire extinguishers | 1 sum | 14,000.00 | 14,000 | |
| 7 Fire protection miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification, testing, verification etc. | 1 sum | 25,000.00 | 25,000 | |
| 8 Note:- Fire pump - not included | | nil | | |
| C13 Fire Protection | TOTAL : \$ | 5,192 m2 | 69.26 | 359,600 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|---|----------|--------------|------------------|---------|
| C14 HVAC | | | | |
| 1 Building heating | 1 sum | 1,076,900.00 | 1,076,900 | |
| - Note:- Primary heating source from existing biomass district heating system, expected load 3249kW | | incl. | | |
| - Oil burning boiler back up system c/w two 1950kW boilers | 1 sum | 350,000.00 | 350,000 | |
| - Allow for plate & frame heat exchanger, pumps, piping, valves, insulation, terminals & connection | 5,192 m2 | 140.00 | 726,900 | |
| 2 Pool water heating | 1 sum | 115,000.00 | 115,000 | |
| - Dedicated heat exchanger for 50m competition pool, 0.3 deg.C./hr, allow | 1 no. | 45,000.00 | 45,000 | |
| - Dedicated heat exchanger for leisure pool, 1.1 deg.C./hr, allow | 1 no. | 15,000.00 | 15,000 | |
| - Dedicated heat exchanger for therapy pool, 2.8 deg.C./hr, allow | 1 no. | 25,000.00 | 25,000 | |
| - Allow for piping and connections to base building heating system | 1 sum | 30,000.00 | 30,000 | |
| 3 Dedicated cooling for server room | 1 sum | 12,000.00 | 12,000 | |
| - Split air conditioner c/w outdoor condenser | 1 sum | 12,000.00 | 12,000 | |
| 4 Natatorium (pool area & all associated decks) ventilation | 1 sum | 1,440,000.00 | 1,440,000 | |
| - Air handling unit AHU-1(OA) 47,500 l/s c/w heat recovery, SF, EF, 494 kW HC & 87.5kW DX cooling | 1 no. | 1,060,000.00 | 1,060,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 380,000.00 | 380,000 | |
| 5 Administration, multipurpose rooms and canteen ventilation | 1 sum | 300,000.00 | 300,000 | |
| - Air handling unit AHU-2(ERV) c/w heat recovery, HW heting & DX cooling, 3600 l/s | 1 no. | 140,000.00 | 140,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 160,000.00 | 160,000 | |
| 6 2nd floor office ventilation | 1 sum | 100,000.00 | 100,000 | |
| - Air handling unit AHU-3 c/w HW heting & DX cooling, 1600 l/s | 1 no. | 40,000.00 | 40,000 | |
| - Air distribution ductwork, dampers , grilles, louvers, insulation etc. | 1 sum | 60,000.00 | 60,000 | |
| Carried Forward : | | | 3,043,900 | |

| C1 MECHANICAL | | Quantity | Unit rate | Amount | Remarks |
|-----------------------------|--|-------------------|----------------------------|------------------|------------------|
| C14 HVAC (Continued) | | | Brought Forward : | 3,043,900 | |
| 7 | Canteen dedicated exhaust system - Allow for exhaust fan, ductwork, hoods, louvers, fire wrap etc. | 1 sum | 40,000.00 | 40,000 | |
| | | 1 sum | 40,000.00 | 40,000 | |
| 8 | Change rooms and washrooms exhaust - Allow for EA ductwork, grilles, tie into main pool area heat recovery systems | 1 sum | 120,000.00 | 120,000 | |
| | | 1 sum | 120,000.00 | 120,000 | |
| 9 | Miscellaneous exhaust and ventilation - Allow for chlorine room exhaust and ventilation - Allow for service spaces exhaust and ventilation | 1 sum | 75,000.00 | 75,000 | |
| | | 1 sum | 15,000.00 | 15,000 | |
| | | 1 sum | 60,000.00 | 60,000 | |
| 10 | HVAC miscellaneous such as mobilization, start-up, cleaning, drawings, manuals, tagging, identification etc. | 1 sum | 40,000.00 | 40,000 | |
| 11 | Testing, adjusting, balancing and commissioning | 1 sum | 140,000.00 | 140,000 | |
| C14 HVAC | | TOTAL : \$ | 5,192 m² | 666.20 | 3,458,900 |

| C1 MECHANICAL | Quantity | Unit rate | Amount | Remarks |
|--------------------------|---------------------|------------|---------|---------|
| C15 Controls | | | | |
| 1 Allow for DDC controls | 1 sum | 500,000.00 | 500,000 | |
| C15 Controls | TOTAL : \$ 5,192 m2 | 96.30 | 500,000 | |

| C2 ELECTRICAL | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|-----------------|---------------|----------------|
| C21 Service & Distribution | | | | |
| 1 Service & distribution, 800A 347/600V 3Ph 4w | 1 sum | 425,000.00 | 425,000 | |
| 2 Standby diesel generator, 550kW 347/600V 3Ph inside building c/w 800A ATS, load bank etc | 1 sum | 450,000.00 | 450,000 | |
| 3 Electrical Misc. | 1 sum | 50,000.00 | 50,000 | |
| - Permits, fees & inspection | 1 sum | 8,000.00 | 8,000 | |
| - Drawings & manuals | 1 sum | 10,000.00 | 10,000 | |
| - Sealing & fire-stopping | 1 sum | 2,000.00 | 2,000 | |
| - Mobilization | 1 sum | 30,000.00 | 30,000 | |
| C21 Service & Distribution | TOTAL : \$ | 5,192 m2 | 178.16 | 925,000 |

| C2 ELECTRICAL | | Quantity | Unit rate | Amount | Remarks |
|---------------------------------|--------------------------------------|---------------------|-----------|---------|---------|
| C22 Lighting, Devices & Heating | | | | | |
| 1 | Light fixtures | 5,192 m2 | 100.00 | 519,200 | |
| 2 | Exit & emergency lighting | 1 sum | 54,200.00 | 54,200 | |
| 3 | Lighting controls | 5,192 m2 | 15.00 | 77,900 | |
| 4 | Power outlets, devices & connections | 5,192 m2 | 35.00 | 181,700 | |
| 5 | Connections to mechanical equipment | 60 no. | 1,000.00 | 60,000 | |
| 6 | Electric heating, not included | | nil. | | |
| 7 | Under water lighting, not included | | nil. | | |
| C22 Lighting, Devices & Heating | | TOTAL : \$ 5,192 m2 | 172.00 | 893,000 | |

| C2 ELECTRICAL | Quantity | Unit rate | Amount | Remarks |
|---|-------------------|-----------------|---------------|----------------|
| C23 Systems & Ancillaries | | | | |
| 1 FA system, addressable 2 stage c/w battery charger, standby batteries, connection to DACT & monitored by local ULC approved monitoring company, 5192m2 @ \$25 | 1 sum | 130,000.00 | 130,000 | |
| 2 Combined telephone & PA system | 1 sum | 50,000.00 | 50,000 | |
| 3 Communication system (voice/data) | 1 sum | 68,000.00 | 68,000 | |
| 4 Door access controls system | 1 sum | 40,000.00 | 40,000 | |
| 5 CCTV system | 1 sum | 75,000.00 | 75,000 | |
| 6 Intrusion alarm system | 1 sum | 45,000.00 | 45,000 | |
| 7 CableTV system | 1 sum | 40,000.00 | 40,000 | |
| 8 Clock system, allow | 1 sum | 5,000.00 | 5,000 | |
| 9 Staff alarm system, allow | 1 sum | 5,000.00 | 5,000 | |
| 10 Sound system, allow | 1 sum | 40,000.00 | 40,000 | |
| 11 Misc. systems | 1 sum | 29,000.00 | 29,000 | |
| 12 Lightning protection system, not included | | nil. | | |
| C23 Systems & Ancillaries | TOTAL : \$ | 5,192 m2 | 101.50 | 527,000 |

| D1 SITE WORK | | Quantity | Unit rate | Amount | Remarks |
|----------------------|---|---------------------|-----------|---------|---------|
| D11 Site Development | | | | | |
| 1 | Allowance for clearing, grubbing, cut and fill, as required | 6,700 m2 | 35.00 | 234,500 | |
| 2 | Asphalt paving | 4,300 m2 | 85.00 | 365,500 | |
| 3 | Demarkation to above | | allow | 12,000 | |
| 4 | Allowance for concrete deck at entrance | 60 m2 | 240.00 | 14,400 | |
| 5 | Allowance restoration, soft landscaping | 2,300 m2 | 30.00 | 69,000 | |
| 6 | Allowance for restoration at new service connections | | allow | 30,000 | |
| D11 Site Development | | TOTAL : \$ 6,700 m2 | 108.27 | 725,400 | |

| D1 SITE WORK | Quantity | Unit rate | Amount | Remarks |
|--|-------------------|--------------|-------------------|----------------|
| D12 Mechanical Site Services | | | | |
| 1 Water supply (fire & domestic) | 1 sum | 250,000.00 | 250,000 | |
| - Allow for water supply from city water main c/w U/G piping, valves, valve chambers, connections etc. | 1 sum | 250,000.00 | 250,000 | |
| 2 Sanitary drainage disposal | 1 sum | 150,000.00 | 150,000 | |
| - Allow for new manholes, underground piping, connection to existing mains etc. | 1 sum | 150,000.00 | 150,000 | |
| 3 Storm drainage disposal | 1 sum | 200,000.00 | 200,000 | |
| - Relocate manhole and culvert at north end of the site | 1 allow | 80,000.00 | 80,000 | |
| - Allow for new manholes, catchbasins, underground piping & connections | 1 sum | 120,000.00 | 120,000 | |
| 4 Fuel oil storage for building heating - included in C12 Plumbing & Drainage | | incl. | | |
| 5 District heating supply to new aquatic centre (heating load 3249kW) - allow for 150mm dia. U/G pre-insulated HWS/HWR piping, valves, connection to existing biomass district heating system etc. - \$800,000 separate budget | | nil | | |
| D12 Mechanical Site Services | TOTAL : \$ | 1 Sum | 600,000.00 | 600,000 |

| D1 SITE WORK | Quantity | Unit rate | Amount | Remarks |
|--|------------|-----------|------------|---------|
| D13 Electrical Site Services | | | | |
| 1 Incoming O/H primary power c/w Utility TX, pad, grounding, rock excavation etc | 1 sum | 55,000.00 | 55,000 | |
| 2 Incoming U/G secondary power | 1 sum | 25,000.00 | 25,000 | |
| 3 Incoming telecom services (CableTV, Internet, Tel) | 1 sum | 20,000.00 | 20,000 | |
| 4 Site lighting | 1 sum | 20,000.00 | 20,000 | |
| D13 Electrical Site Services | TOTAL : \$ | 1 Sum | 120,000.00 | 120,000 |

**YELLOWKNIFE AQUATIC CENTRE
POOL OPTIONS
YELLOWKNIFE, NORTHWEST TERRITORIES**

Report Date : October 2020

**Appendix
E - Life Cycle Costs**

Life Cycle Cost Analysis Summary

Hanscomb

| | | | |
|-----------------------|------------------------------------|-------------------------|----------|
| Project: | Yellowknife Aquatic Centre | Job No: | O-5733 |
| Location: | Yellowknife, Northwest Territories | Date: | 29/10/20 |
| Owner: | City of Yellowknife | | |
| Consultant: | Taylor Architecture Group | | |
| Subject: | New Aquatic Centre | | |
| Discount Rate: | 4.0% | Period of Study: | 25 years |
| | | Base Year: | 2020 |

| | <i>Capital Costs</i> | <i>Operations & Maintenance Costs</i> | <i>Energy Costs</i> | <i>Cyclical Renewal Costs</i> | <i>Salvage Value</i> | <i>Total Cost (Present Value)</i> |
|-------------------|----------------------|---|---------------------|-------------------------------|----------------------|-----------------------------------|
| 1 25m 8 Lane Pool | \$44,599,900 | \$76,089,240 | \$12,149,970 | \$17,662,470 | (\$6,532,540) | \$143,969,040 |
| 2 50m 8 Lane Pool | \$53,524,000 | \$88,527,560 | \$14,136,170 | \$21,648,760 | (\$7,976,460) | \$169,860,030 |
| 3 25m 6 Lane Pool | \$43,751,700 | \$73,757,140 | \$11,777,550 | \$17,121,110 | (\$6,332,330) | \$140,075,170 |
| 4 50m 6 Lane Pool | \$51,845,600 | \$84,089,980 | \$13,427,550 | \$19,519,710 | (\$7,219,480) | \$161,663,360 |
| 5 | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - |

Study Notes:

This Life Cycle Cost Study considers all significant costs of ownership over the economic life of each option and expresses these costs in equivalent dollars using present value analysis.

Because ownership costs include not only construction costs but also operations, maintenance, energy and cyclic renewal costs, and because each option will present different costs which may in turn be incurred at different times during the life cycle study, the use of present value analysis is necessary to bring all of these diverse and time sensitive expenditures to a common basis for comparison and, in doing so, to account for the time value of money.

Understanding the time value of money begins with the recognition that money invested earns interest. For this reason, a sum of money invested today will earn interest and will therefore be worth more than the same sum at a later date. For example, \$100 invested for a year at 7% interest would be worth \$107 a year from now. Accordingly, \$100 today is worth more than \$100 a year from now. Using this principle, present value analysis 'discounts' future sums of money to present value and presents the results as 'equivalent dollars' for comparison.

Life Cycle Cost Option Analysis

Hanscomb

Project: Yellowknife Aquatic Centre
Location: Yellowknife, Northwest Territories
Owner: City of Yellowknife
Consultant: Taylor Architecture Group
Subject: New Aquatic Centre
Option: 1 25m 8 Lane Pool

Job No: O-5733
Date: 29/10/20

Discount Rate: 4.0% **Period of Study:** 25 years **Base Year:** 2020

Enter escalation rates below for each Cost Category

| Capital Costs | | | | | | PV Factor | Present Value |
|--|---------------|----------------------|-----------|----------------|-------|-----------|-------------------|
| Description | | Quantity | Unit Rate | Estimated Cost | Years | PWAF | Amount (\$) |
| A | 25m Lane Pool | 4,698 m ² | 9,493 | 44,599,900 | | | 44,599,900 |
| B | | | | - | | | - |
| C | | | | - | | | - |
| D | | | | - | | | - |
| E | | | | - | | | - |
| F | | | | - | | | - |
| G | | | | - | | | - |
| H | | | | - | | | - |
| Total Present Value - Capital Costs | | | | | | | 44,599,900 |

| Operations & Maintenance Costs | | | | | | PV Factor | Present Value |
|---|------------------------------|----------------------|-----------|-----------------------|-------|-----------|-------------------|
| Description | | Quantity | Unit Rate | Estimated Annual Cost | Years | PWAF | Amount (\$) |
| A | Staff | 4,698 m ² | 415.00 | 1,949,670 | 25 | 32.3275 | 63,027,960 |
| B | Communications | 4,698 m ² | 4.00 | 18,790 | 25 | 32.3275 | 607,430 |
| C | Custodial, basic maintenance | 4,698 m ² | 17.00 | 79,870 | 25 | 32.3275 | 2,582,000 |
| D | Security | 4,698 m ² | 2.00 | 9,400 | 25 | 32.3275 | 303,880 |
| E | Maintenance & repair | 4,698 m ² | 18.00 | 84,560 | 25 | 32.3275 | 2,733,610 |
| F | Water & Sewer | 4,698 m ² | 8.00 | 37,580 | 25 | 32.3275 | 1,214,870 |
| G | Building Envelope | 4,698 m ² | 20.00 | 93,960 | 25 | 32.3275 | 3,037,490 |
| H | Built in equipment repairs | 4,698 m ² | 17.00 | 79,870 | 25 | 32.3275 | 2,582,000 |
| Total Present Value - Operations & Maintenance Costs | | | | | | | 2,353,700 |
| | | | | | | | 76,089,240 |

Life Cycle Cost Option Analysis

Hanscomb

| | | | |
|--------------------|------------------------------------|----------------|----------|
| Project: | Yellowknife Aquatic Centre | Job No: | O-5733 |
| Location: | Yellowknife, Northwest Territories | Date: | 29/10/20 |
| Owner: | City of Yellowknife | | |
| Consultant: | Taylor Architecture Group | | |
| Subject: | New Aquatic Centre | | |
| Option: | 1 25m 8 Lane Pool | | |

Discount Rate: 4.0% **Period of Study:** 25 years **Base Year:** 2020

Enter escalation rates below for each Cost Category

| Energy Costs | | | | | | PV Factor | Present Value |
|---|------------|----------------------|-----------|----------------|-------|-----------|-------------------|
| Description | | Quantity | Unit Rate | Estimated Cost | Years | PWAF | Amount (\$) |
| A | Energy Use | 4,698 m ² | 80.00 | 375,840 | 25 | 32.3275 | 12,149,970 |
| B | | | | - | | | - |
| C | | | | - | | | - |
| D | | | | - | | | - |
| E | | | | - | | | - |
| F | | | | - | | | - |
| G | | | | - | | | - |
| H | | | | - | | | - |
| Total Present Value - Energy Costs | | | | | | | 12,149,970 |

| Cyclical Renewal Costs (Note: No Replacement in Final Year of Study Period) | | | | | | PV Factor | Present Value |
|--|---------------------|----------------------|-----------|----------------|-------|-----------|-------------------|
| Description | | Quantity | Unit Rate | Estimated Cost | Cycle | SPF | Amount (\$) |
| A | Exterior Renewals | 4,698 m ² | 273 | 1,283,730 | 10 | 2.6735 | 3,432,090 |
| B | Interior Renewals | 4,698 m ² | 496 | 2,327,860 | 8 | 4.1005 | 9,545,390 |
| C | Mechanical Renewals | 4,698 m ² | 624 | 2,931,550 | 15 | 1.3307 | 3,901,080 |
| D | Electrical Renewals | 4,698 m ² | 114 | 535,570 | 20 | 1.4637 | 783,910 |
| E | | | | - | | | - |
| F | | | | - | | | - |
| G | | | | - | | | - |
| H | | | | - | | | - |
| Total Present Value - Cyclical Renewal Costs (Note: No Replacement in Final Year of Study Period) | | | | | | | 17,662,470 |

Life Cycle Cost Option Analysis

Hanscomb

| | | | |
|--------------------|------------------------------------|----------------|----------|
| Project: | Yellowknife Aquatic Centre | Job No: | O-5733 |
| Location: | Yellowknife, Northwest Territories | Date: | 29/10/20 |
| Owner: | City of Yellowknife | | |
| Consultant: | Taylor Architecture Group | | |
| Subject: | New Aquatic Centre | | |
| Option: | 1 25m 8 Lane Pool | | |

Discount Rate: 4.0% **Period of Study:** 25 years **Base Year:** 2020

Enter escalation rates below for each Cost Category

Salvage Value (Note: No Replacement in Final Year of Study Period)

Escalation Rate: 6.0%

| Description | % Life Remaining | Quantity | Unit Rate | Estimated Credit | At Year | PV Factor | PV of Credit |
|-----------------------|------------------|----------------------|-----------|------------------|---------|-----------|--------------|
| | | | | | | SPF | Amount (\$) |
| A Exterior Renewals | 50.0% | 4,698 m ² | (273) | (641,860) | 25 | 1.6100 | (1,033,360) |
| B Interior Renewals | 87.5% | 4,698 m ² | (496) | (2,036,880) | 25 | 1.6100 | (3,279,280) |
| C Mechanical Renewals | 33.3% | 4,698 m ² | (624) | (977,180) | 25 | 1.6100 | (1,573,210) |
| D Electrical Renewals | 75.0% | 4,698 m ² | (114) | (401,680) | 25 | 1.6100 | (646,690) |
| E | | | | | - | | |
| F | | | | | - | | |
| G | | | | | - | | |
| H | | | | | - | | |

Total Present Value - Salvage Value (Note: No Replacement in Final Year of Study Period)

(6,532,540)

TOTAL PRESENT VALUE - OPTION 1 - 25m 8 Lane Pool

143,969,040

Life Cycle Cost Option Analysis

Hanscomb

Project: Yellowknife Aquatic Centre
Location: Yellowknife, Northwest Territories
Owner: City of Yellowknife
Consultant: Taylor Architecture Group
Subject: New Aquatic Centre
Option: 2 50m 8 Lane Pool

Job No: O-5733
Date: 29/10/20

Discount Rate: 4.0% **Period of Study:** 25 years **Base Year:** 2020

Enter escalation rates below for each Cost Category

Capital Costs

Escalation Rate: 6.0%

| Description | Quantity | Unit Rate | Estimated Cost | Years | PV | Present |
|--|----------------------|-----------|----------------|-------|--------|-------------------|
| | | | | | Factor | Value |
| A 50m Lane Pool | 5,466 m ² | 9,792 | 53,524,000 | | | 53,524,000 |
| B | | | | | | - |
| C | | | | | | - |
| D | | | | | | - |
| E | | | | | | - |
| F | | | | | | - |
| G | | | | | | - |
| H | | | | | | - |
| Total Present Value - Capital Costs | | | | | | 53,524,000 |

Operations & Maintenance Costs

Escalation Rate: 6.0%

| Description | Quantity | Unit Rate | Estimated Annual Cost | Years | PV | Present |
|---|----------------------|-----------|-----------------------|-------|---------|-------------------|
| | | | | | Factor | Value |
| A Staff | 5,466 m ² | 415.00 | 2,268,390 | 25 | 32.3275 | 73,331,380 |
| B Communications | 5,466 m ² | 4.00 | 21,860 | 25 | 32.3275 | 706,680 |
| C Custodial, basic maintenance | 5,466 m ² | 17.00 | 92,920 | 25 | 32.3275 | 3,003,870 |
| D Security | 5,466 m ² | 2.00 | 10,930 | 25 | 32.3275 | 353,340 |
| E Maintenance & repair | 5,466 m ² | 18.00 | 98,390 | 25 | 32.3275 | 3,180,700 |
| F Water & Sewer | 5,466 m ² | 8.00 | 43,730 | 25 | 32.3275 | 1,413,680 |
| G Building Envelope | 5,466 m ² | 20.00 | 109,320 | 25 | 32.3275 | 3,534,040 |
| H Built in equipment repairs | 5,466 m ² | 17.00 | 92,920 | 25 | 32.3275 | 3,003,870 |
| Total Present Value - Operations & Maintenance Costs | | | | | | 88,527,560 |

Life Cycle Cost Option Analysis

Hanscomb

Project: Yellowknife Aquatic Centre
Location: Yellowknife, Northwest Territories
Owner: City of Yellowknife
Consultant: Taylor Architecture Group
Subject: New Aquatic Centre
Option: 2 50m 8 Lane Pool

Job No: O-5733
Date: 29/10/20

| Energy Costs | | | | | | PV Factor | Present Value |
|------------------------------------|------------|----------------------|-----------|----------------|-------|------------|---------------|
| Description | | Quantity | Unit Rate | Estimated Cost | Years | PWAF | Amount (\$) |
| A | Energy Use | 5,466 m ² | 80.00 | 437,280 | 25 | 32.3275 | 14,136,170 |
| B | | | | - | | | - |
| C | | | | - | | | - |
| D | | | | - | | | - |
| E | | | | - | | | - |
| F | | | | - | | | - |
| G | | | | - | | | - |
| H | | | | - | | | - |
| Total Present Value - Energy Costs | | | | | | 14,136,170 | |

| Cyclical Renewal Costs (Note: No Replacement in Final Year of Study Period) | | | | | | PV Factor | Present Value |
|---|---------------------|----------------------|-----------|----------------|-------|------------|---------------|
| Description | | Quantity | Unit Rate | Estimated Cost | Cycle | SPF | Amount (\$) |
| A | Exterior Renewals | 5,466 m ² | 244 | 1,332,340 | 10 | 2.6735 | 3,562,050 |
| B | Interior Renewals | 5,466 m ² | 571 | 3,121,090 | 8 | 4.1005 | 12,798,030 |
| C | Mechanical Renewals | 5,466 m ² | 605 | 3,306,930 | 15 | 1.3307 | 4,400,610 |
| D | Electrical Renewals | 5,466 m ² | 111 | 606,730 | 20 | 1.4637 | 888,070 |
| E | | | | - | | | - |
| F | | | | - | | | - |
| G | | | | - | | | - |
| H | | | | - | | | - |
| Total Present Value - Cyclical Renewal Costs (Note: No Replacement in Final Year of Study Period) | | | | | | 21,648,760 | |

Life Cycle Cost Option Analysis

Hanscomb

Project: Yellowknife Aquatic Centre
Location: Yellowknife, Northwest Territories
Owner: City of Yellowknife
Consultant: Taylor Architecture Group
Subject: New Aquatic Centre
Option: 2 50m 8 Lane Pool

Job No: O-5733
Date: 29/10/20

Salvage Value (Note: No Replacement in Final Year of Study Period)

Escalation Rate: 6.0%

| Description | % Life Remaining | Quantity | Unit Rate | Estimated Credit | At Year | PV Factor | PV of Credit |
|--|------------------|----------------------|-----------|------------------|---------|-----------|--------------|
| | | | | | | SPF | Amount (\$) |
| A Exterior Renewals | 50.0% | 5,466 m ² | (244) | (666,170) | 25 | 1.6100 | (1,072,500) |
| B Interior Renewals | 87.5% | 5,466 m ² | (571) | (2,730,950) | 25 | 1.6100 | (4,396,700) |
| C Mechanical Renewals | 33.3% | 5,466 m ² | (605) | (1,102,310) | 25 | 1.6100 | (1,774,670) |
| D Electrical Renewals | 75.0% | 5,466 m ² | (111) | (455,040) | 25 | 1.6100 | (732,590) |
| E | | | | | - | | |
| F | | | | | - | | |
| G | | | | | - | | |
| H | | | | | - | | |
| Total Present Value - Salvage Value (Note: No Replacement in Final Year of Study Period) | | | | | | | (7,976,460) |
| TOTAL PRESENT VALUE - OPTION 2 - 50m 8 Lane Pool | | | | | | | 169,860,030 |

Life Cycle Cost Option Analysis

Hanscomb

| | | | |
|--------------------|------------------------------------|----------------|----------|
| Project: | Yellowknife Aquatic Centre | Job No: | O-5733 |
| Location: | Yellowknife, Northwest Territories | Date: | 29/10/20 |
| Owner: | City of Yellowknife | | |
| Consultant: | Taylor Architecture Group | | |
| Subject: | New Aquatic Centre | | |
| Option: | 3 25m 6 Lane Pool | | |

Discount Rate: 4.0% **Period of Study:** 25 years **Base Year:** 2020

Enter escalation rates below for each Cost Category

Capital Costs

Escalation Rate: 6.0%

| Description | Quantity | Unit Rate | Estimated Cost | Years | PV | Present |
|--|----------|-----------|----------------|-------|--------|-------------------|
| | | | | | Factor | Value |
| A 25m Lane Pool | 4,554 m2 | 9,607 | 43,751,700 | | | 43,751,700 |
| B | | | | - | | - |
| C | | | | - | | - |
| D | | | | - | | - |
| E | | | | - | | - |
| F | | | | - | | - |
| G | | | | - | | - |
| H | | | | - | | - |
| Total Present Value - Capital Costs | | | | | | 43,751,700 |

Operations & Maintenance Costs

Escalation Rate: 6.0%

| Description | Quantity | Unit Rate | Estimated Annual Cost | Years | PV | Present |
|---|----------|-----------|-----------------------|-------|---------|-------------------|
| | | | | | Factor | Value |
| A Staff | 4,554 m2 | 415.00 | 1,889,910 | 25 | 32.3275 | 61,096,060 |
| B Communications | 4,554 m2 | 4.00 | 18,220 | 25 | 32.3275 | 589,010 |
| C Custodial, basic maintenance | 4,554 m2 | 17.00 | 77,420 | 25 | 32.3275 | 2,502,800 |
| D Security | 4,554 m2 | 2.00 | 9,110 | 25 | 32.3275 | 294,500 |
| E Maintenance & repair | 4,554 m2 | 18.00 | 81,970 | 25 | 32.3275 | 2,649,890 |
| F Water & Sewer | 4,554 m2 | 8.00 | 36,430 | 25 | 32.3275 | 1,177,690 |
| G Building Envelope | 4,554 m2 | 20.00 | 91,080 | 25 | 32.3275 | 2,944,390 |
| H Built in equipment repairs | 4,554 m2 | 17.00 | 77,420 | 25 | 32.3275 | 2,502,800 |
| Total Present Value - Operations & Maintenance Costs | | | 2,281,560 | | | 73,757,140 |

Life Cycle Cost Option Analysis

Hanscomb

| | | | |
|-------------|------------------------------------|---------|----------|
| Project: | Yellowknife Aquatic Centre | Job No: | O-5733 |
| Location: | Yellowknife, Northwest Territories | Date: | 29/10/20 |
| Owner: | City of Yellowknife | | |
| Consultant: | Taylor Architecture Group | | |
| Subject: | New Aquatic Centre | | |
| Option: | 3 25m 6 Lane Pool | | |

| Energy Costs | | | | | | | PV Factor | Present Value |
|------------------------------------|------------|-------------|----------------------|-----------|----------------|-------|------------|---------------|
| | | Description | Quantity | Unit Rate | Estimated Cost | Years | PWAF | Amount (\$) |
| A | Energy Use | | 4,554 m ² | 80.00 | 364,320 | 25 | 32.3275 | 11,777,550 |
| B | | | | | - | | | - |
| C | | | | | - | | | - |
| D | | | | | - | | | - |
| E | | | | | - | | | - |
| F | | | | | - | | | - |
| G | | | | | - | | | - |
| H | | | | | - | | | - |
| Total Present Value - Energy Costs | | | | | | | 11,777,550 | |

| Cyclical Renewal Costs (Note: No Replacement in Final Year of Study Period) | | | | | | | PV Factor | Present Value |
|---|---------------------|-------------|----------------------|-----------|----------------|-------|------------|---------------|
| | | Description | Quantity | Unit Rate | Estimated Cost | Cycle | SPF | Amount (\$) |
| A | Exterior Renewals | | 4,554 m ² | 273 | 1,244,380 | 10 | 2.6735 | 3,326,880 |
| B | Interior Renewals | | 4,554 m ² | 496 | 2,256,510 | 8 | 4.1005 | 9,252,820 |
| C | Mechanical Renewals | | 4,554 m ² | 624 | 2,841,700 | 15 | 1.3307 | 3,781,520 |
| D | Electrical Renewals | | 4,554 m ² | 114 | 519,160 | 20 | 1.4637 | 759,890 |
| E | | | | | - | | | - |
| F | | | | | - | | | - |
| G | | | | | - | | | - |
| H | | | | | - | | | - |
| Total Present Value - Cyclical Renewal Costs (Note: No Replacement in Final Year of Study Period) | | | | | | | 17,121,110 | |

Life Cycle Cost Option Analysis

Hanscomb

| | | | |
|-------------|------------------------------------|---------|----------|
| Project: | Yellowknife Aquatic Centre | Job No: | O-5733 |
| Location: | Yellowknife, Northwest Territories | Date: | 29/10/20 |
| Owner: | City of Yellowknife | | |
| Consultant: | Taylor Architecture Group | | |
| Subject: | New Aquatic Centre | | |
| Option: | 3 25m 6 Lane Pool | | |

| Salvage Value (Note: No Replacement in Final Year of Study Period) | | | | | | | PV Factor | PV of Credit |
|--|---------------------|------------------|----------|-----------|------------------|---------|-----------|--------------|
| Description | | % Life Remaining | Quantity | Unit Rate | Estimated Credit | At Year | SPF | Amount (\$) |
| A | Exterior Renewals | 50.0% | 4,554 m2 | (273) | (622,190) | 25 | 1.6100 | (1,001,700) |
| B | Interior Renewals | 87.5% | 4,554 m2 | (496) | (1,974,440) | 25 | 1.6100 | (3,178,760) |
| C | Mechanical Renewals | 33.3% | 4,554 m2 | (624) | (947,230) | 25 | 1.6100 | (1,525,000) |
| D | Electrical Renewals | 75.0% | 4,554 m2 | (114) | (389,370) | 25 | 1.6100 | (626,870) |
| E | | | | | | - | | |
| F | | | | | | - | | |
| G | | | | | | - | | |
| H | | | | | | - | | |
| Total Present Value - Salvage Value (Note: No Replacement in Final Year of Study Period) | | | | | | | | (6,332,330) |
| TOTAL PRESENT VALUE - OPTION 3 - 25m 6 Lane Pool | | | | | | | | 140,075,170 |

Life Cycle Cost Option Analysis

Hanscomb

| | | | |
|--------------------|------------------------------------|----------------|----------|
| Project: | Yellowknife Aquatic Centre | Job No: | O-5733 |
| Location: | Yellowknife, Northwest Territories | Date: | 29/10/20 |
| Owner: | City of Yellowknife | | |
| Consultant: | Taylor Architecture Group | | |
| Subject: | New Aquatic Centre | | |
| Option: | 4 50m 6 Lane Pool | | |

Discount Rate: 4.0% **Period of Study:** 25 years **Base Year:** 2020

Enter escalation rates below for each Cost Category

Capital Costs

Escalation Rate: 6.0%

| Description | Quantity | Unit Rate | Estimated Cost | Years | PWAF | Present Value |
|--|----------|-----------|----------------|-------|------|-------------------|
| A 50m Lane Pool | 5,192 m2 | 9,986 | 51,845,600 | | | 51,845,600 |
| B | | | | - | | - |
| C | | | | - | | - |
| D | | | | - | | - |
| E | | | | - | | - |
| F | | | | - | | - |
| G | | | | - | | - |
| H | | | | - | | - |
| Total Present Value - Capital Costs | | | | | | 51,845,600 |

Operations & Maintenance Costs

Escalation Rate: 6.0%

| Description | Quantity | Unit Rate | Estimated Annual Cost | Years | PWAF | Present Value |
|---|----------|-----------|-----------------------|------------------|---------|-------------------|
| A Staff | 5,192 m2 | 415.00 | 2,154,680 | 25 | 32.3275 | 69,655,420 |
| B Communications | 5,192 m2 | 4.00 | 20,770 | 25 | 32.3275 | 671,440 |
| C Custodial, basic maintenance | 5,192 m2 | 17.00 | 88,260 | 25 | 32.3275 | 2,853,230 |
| D Security | 5,192 m2 | 2.00 | 10,380 | 25 | 32.3275 | 335,560 |
| E Maintenance & repair | 5,192 m2 | 18.00 | 93,460 | 25 | 32.3275 | 3,021,330 |
| F Water & Sewer | 5,192 m2 | 8.00 | 41,540 | 25 | 32.3275 | 1,342,880 |
| G Building Envelope | 5,192 m2 | 20.00 | 103,840 | 25 | 32.3275 | 3,356,890 |
| H Built in equipment repairs | 5,192 m2 | 17.00 | 88,260 | 25 | 32.3275 | 2,853,230 |
| Total Present Value - Operations & Maintenance Costs | | | | 2,601,190 | | 84,089,980 |

Life Cycle Cost Option Analysis

Hanscomb

Project: Yellowknife Aquatic Centre
Location: Yellowknife, Northwest Territories
Owner: City of Yellowknife
Consultant: Taylor Architecture Group
Subject: New Aquatic Centre
Option: 4 50m 6 Lane Pool

Job No: O-5733
Date: 29/10/20

| Energy Costs | | | | | | PV Factor | Present Value |
|------------------------------------|------------|----------------------|-----------|----------------|-------|------------|---------------|
| Description | | Quantity | Unit Rate | Estimated Cost | Years | PWAF | Amount (\$) |
| A | Energy Use | 5,192 m ² | 80.00 | 415,360 | 25 | 32.3275 | 13,427,550 |
| B | | | | - | | | - |
| C | | | | - | | | - |
| D | | | | - | | | - |
| E | | | | - | | | - |
| F | | | | - | | | - |
| G | | | | - | | | - |
| H | | | | - | | | - |
| Total Present Value - Energy Costs | | | | | | 13,427,550 | |

| Cyclical Renewal Costs (Note: No Replacement in Final Year of Study Period) | | | | | | PV Factor | Present Value |
|---|---------------------|----------------------|-----------|----------------|-------|------------|---------------|
| Description | | Quantity | Unit Rate | Estimated Cost | Cycle | SPF | Amount (\$) |
| A | Exterior Renewals | 5,192 m ² | 273 | 1,418,710 | 10 | 2.6735 | 3,792,960 |
| B | Interior Renewals | 5,192 m ² | 496 | 2,572,640 | 8 | 4.1005 | 10,549,110 |
| C | Mechanical Renewals | 5,192 m ² | 624 | 3,239,810 | 15 | 1.3307 | 4,311,290 |
| D | Electrical Renewals | 5,192 m ² | 114 | 591,890 | 20 | 1.4637 | 866,350 |
| E | | | | - | | | - |
| F | | | | - | | | - |
| G | | | | - | | | - |
| H | | | | - | | | - |
| Total Present Value - Cyclical Renewal Costs (Note: No Replacement in Final Year of Study Period) | | | | | | 19,519,710 | |

Life Cycle Cost Option Analysis

Hanscomb

| | | | |
|-------------|------------------------------------|---------|----------|
| Project: | Yellowknife Aquatic Centre | Job No: | O-5733 |
| Location: | Yellowknife, Northwest Territories | Date: | 29/10/20 |
| Owner: | City of Yellowknife | | |
| Consultant: | Taylor Architecture Group | | |
| Subject: | New Aquatic Centre | | |
| Option: | 4 50m 6 Lane Pool | | |

| Salvage Value (Note: No Replacement in Final Year of Study Period) | | | | | | | PV Factor | PV of Credit |
|--|---------------------|------------------|----------|-----------|------------------|-------------|-----------|--------------|
| Description | | % Life Remaining | Quantity | Unit Rate | Estimated Credit | At Year | SPF | Amount (\$) |
| A | Exterior Renewals | 50.0% | 5,192 | m2 | (273) | (709,360) | 25 | 1.6100 |
| B | Interior Renewals | 87.5% | 5,192 | m2 | (496) | (2,251,060) | 25 | 1.6100 |
| C | Mechanical Renewals | 33.3% | 5,192 | m2 | (624) | (1,079,940) | 25 | 1.6100 |
| D | Electrical Renewals | 75.0% | 5,192 | m2 | (114) | (443,920) | 25 | 1.6100 |
| E | | | | | | - | | |
| F | | | | | | - | | |
| G | | | | | | - | | |
| H | | | | | | - | | |
| Total Present Value - Salvage Value (Note: No Replacement in Final Year of Study Period) | | | | | | | | (7,219,480) |
| TOTAL PRESENT VALUE - OPTION 4 - 50m 6 Lane Pool | | | | | | | | 161,663,360 |

**Appendix AA
Documents and Drawings List**

**YELLOWKNIFE AQUATIC CENTRE
POOL OPTIONS
YELLOWKNIFE, NORTHWEST TERRITORIES**

Report Date : October 2020

DOCUMENTS AND DRAWING LIST

DOCUMENTS

| Number | Title | Dated | Received |
|--------|---|-------------|-------------|
| N/A | 19-022 YKAC_Concept Design Brief_Class D Estimate | Oct 7, 2020 | Oct 7, 2020 |

ARCHITECTURAL DRAWINGS

| Number | Title | Dated | Received |
|--------|----------------|-------|----------|
| N/A | Not Applicable | N/A | N/A |

STRUCTURAL DRAWINGS

| Number | Title | Dated | Received |
|--------|----------------|-------|----------|
| N/A | Not Applicable | N/A | N/A |

MECHANICAL DRAWINGS

| Number | Title | Dated | Received |
|--------|----------------|-------|----------|
| N/A | Not Applicable | N/A | N/A |

ELECTRICAL DRAWINGS

| Number | Title | Dated | Received |
|--------|----------------|-------|----------|
| N/A | Not Applicable | N/A | N/A |

CIVIL DRAWINGS

| Number | Title | Dated | Received |
|--------|-----------------|--------------|--------------|
| N/A | 80581-TOPO-SE04 | Sept 4, 2020 | Oct 13, 2020 |

LANDSCAPE DRAWINGS

| Number | Title | Dated | Received |
|--------|----------------|-------|----------|
| N/A | Not Applicable | N/A | N/A |

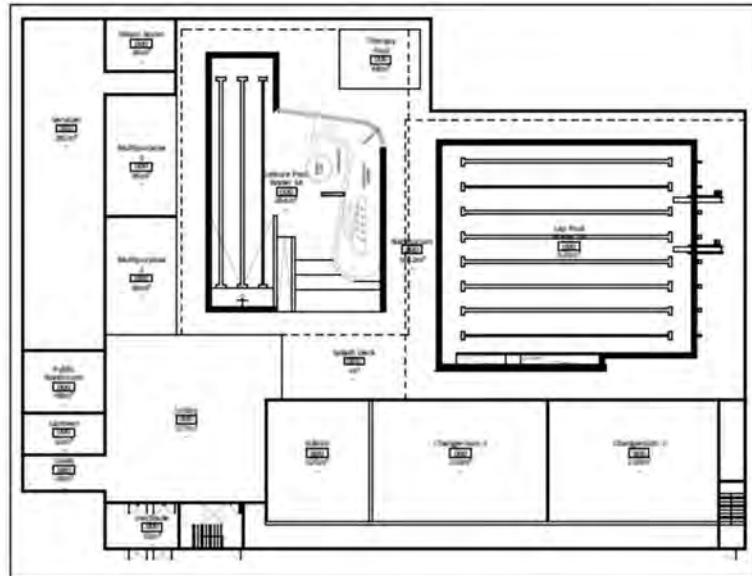
**YELLOWKNIFE AQUATIC CENTRE
POOL OPTIONS
YELLOWKNIFE, NORTHWEST TERRITORIES**

Report Date : October 2020

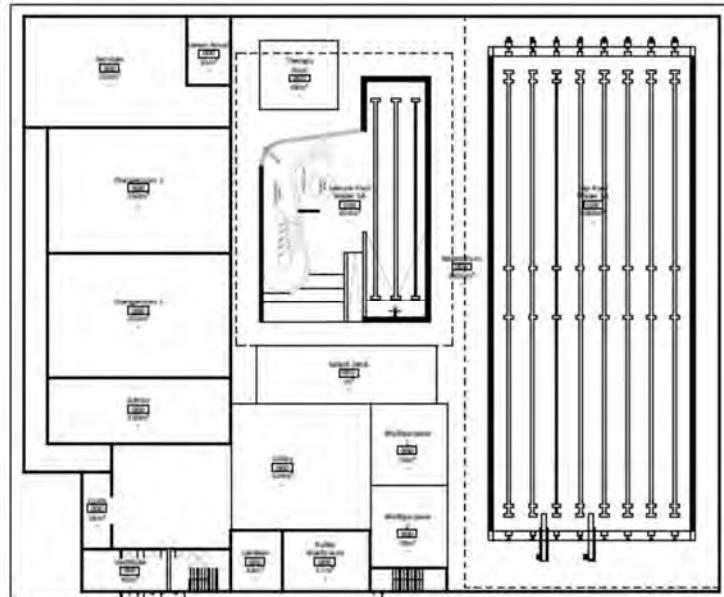
**Appendix AB
Representative Drawings**

**YELLOWKNIFE AQUATIC CENTRE
POOL OPTIONS
YELLOWKNIFE, NORTHWEST TERRITORIES**

Report Date : October 2020



Swimming Pool – 25m Option



Swimming Pool – 50m Option

Hanscomb: Celebrating More than 60 Years of Excellence in the Construction Industry

Hanscomb Limited, a leading independent organization of project control specialists, has been privileged to serve both Canadian and international clients on a wide variety of construction projects for over 60 years. By planning, monitoring and controlling cost in an unbiased independent professional manner, Hanscomb has become an internationally recognized leader in the coordinated management of capital projects.

Our growing team of trusted professionals and experts consists of quantity surveyors, cost consultants, project monitors, schedulers and value specialists, skilled in a remarkable variety of project sectors including but not limited to transportation, civil infrastructure, education, healthcare, residential, and commercial. Hanscomb takes pride in the multi-disciplinary character of the company and the ability of its people to bring together, in a team, the professional and practical skills of the very diverse field of quantity surveying.

Our nationwide network of offices and worldwide associates allows for the easy exchange of information, skills and resources ensuring we stay abreast of the latest in design, construction practices and trends. With offices located coast to coast, Hanscomb has the local experience and worldwide presence to keep your projects on track.

Cost Planning & Control

- Master plan costing
- Construction cost estimates
- Replacement cost estimates

Scheduling

Value Management

Financial Analysis

- Life cycle costing
- Operations and maintenance
- Cost / benefit analysis
- Feasibility studies

Applied Research

- Construction price indexing
- Risk and gap analysis
- Cost publications

Project Loan Monitoring

Project Management

Litigation Support

From east to west, our leadership team is here to serve you. We collaborate on many projects nationally and internationally and are available to assist you.

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