



Town of Aurora
Special Council Report

No. CMS20-019

Subject: Library Square – Tender Award and Update
Prepared by: Robin McDougall, Director of Community Services
Department: Community Services
Date: August 25, 2020

Recommendation

1. That Report No. CMS20-019 be received, and;
2. That the Tender 2020-55-CMS for the Construction of the Library Square Project be awarded to Chandos Construction Ltd. in the amount of \$41,009,865 which includes additional allocated funds of \$328,000 resulting in a total project budget of \$51,939,500.

Executive Summary

The Library Square project construction tender has closed and the bid price has come back within the limit established by Council. A few remaining design elements need to be shared with Council prior to awarding tender.

- Construction tender closed within the limit established by Council for the project
- During the development of the final construction specifications, the preferred metal material for the veil was changed to anodized aluminum from the previous recommendation of muntz bronze
- The water wall feature was originally designed as a flow through system, however, further assessment resulted in a circulation system being the preferred option
- Lightning protection system was considered but is not required
- Project timelines continue to progress with substantial completion expected September 2022

Background

The Library Square project has evolved through various stages of development including: community consultation, strategic and business planning, schematic design,

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detailed design, cost analysis, value engineering, construction documentation, and tendering.

In December 2019, staff presented the latest project budget as a result of the completion of the Class B cost estimate. At that time, Council approved a project budget of \$51,611,700 and authorized staff to further increase the budget and proceed to tendering the project provided the Class A cost estimate remained within a 5% increase. The project team completed the Class A cost estimate which remained within the approved amount, therefore, staff proceeded to tender the project.

The Tender closed on July 20, 2020, all three pre-approved bidders submitted compliant bids with the lowest tender price from Chandos Construction Ltd. at approximately \$328,000 above the \$51,611,700 but within the 5% agreeable increase in project budget.

During the final detailed design stage and tendering, a few remaining design elements need to be shared with Council but then it is time to move to the construction phase of the project by awarding the tender.

Analysis

Construction tender closed within the limit established by Council for the project

Pre-qualification for a general contractor was completed in January 2020. This resulted in three bidders being considered pre-qualified to bid on the construction tender. The construction tender was issued to all three bidders in May 2020 and closed on July 20, 2020. All three pre-approved bidders submitted a compliant bid, with the lowest tender price submitted by Chandos Construction Ltd. The lowest tender bid came in \$328,000 above the \$51,611,700. With Council's direction to tender provided the Class A cost estimate was within 5% of the budget, the \$328,000 is %0.6 above the \$51,611,700 which is well within the 5% limit set by Council.

Currently, the project has management contingency which could cover the \$328,000, however, project management principles would recommend allocating additional funds to the project budget and keep the contingencies whole going into the construction phase of the project.

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During the development of the final construction specifications, the preferred metal material for the veil was changed to anodized aluminum from the previous recommendation of muntz bronze

In October 2019 during the design development phase, the architects considered the material options for the veil. Based on the patinating quality, the historical context of the building being celebrated by aging gracefully and the material being consistent with the aesthetic and finishes throughout the interior of the building, Muntz Bronze was the recommended option. However, as the consultants progressed through the final detailed design, they had a metals specialist provide comment on the bronze metal and determined that it would cause galvanic corrosion of all adjacent metals which would risk the integrity of the building. This corrosion would happen as a result of materials that come in contact with the bronze or through ionized vapours and wind-driven rain transmitting across the building assembly. In order to mitigate the impacts, it would require increased costs in order to provide a protective coating on all adjacent materials or to isolate connections. Based on the increased cost and the risk of corrosion, muntz bronze was determined to no longer be an option.

The architects then returned to assess other metal/material options for the veil. Zinc was being considered based on its patinating properties, however, it was determined that the zinc material was too malleable and would require excessive structural reinforcement, raising the cost and compromising the building envelope and design intent. As a result, zinc was ruled out as an option.

Another metal that was considered by the architect was aluminum (Attachment #1). Although this metal does not patinate over time, it was confirmed to be lighter weight than zinc, therefore, no additional supports are required. ERA Architects (heritage consultant) consulted with the Ontario Heritage Trust (OHT) on this matter, and OHT confirmed they support the aluminum material. As a result of this analysis, the aluminum material for the veil was included as the preferred material in the tender package.

The water wall feature was originally designed as a flow through system, however, further assessment resulted in a circulation system being the preferred option

A water wall feature was approved by Council to be included in the design of the outdoor square in March 2019. The goal of this feature was to provide a peaceful enhancement similar to a running spring. This wall was designed to incorporate

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detailed/contoured concrete to provide a textured surface enhancing the sound of the water. The wall was also designed to be illuminated and would drain away through a trench drain.

Although the flow through system is the preferred system for the active water play feature (same system used in all Town spray pads), the water wall is an aesthetic feature and therefore, consultants recommended the circulation system for this feature in order to reduce the amount of water being drained away. Therefore, the water wall was redesigned as a circulation system (treating the water and re-using), ultimately conserving the water. The flow through system would have used approximately 19m³ litres of water per hour. Based on 8 hours of operation per day over a four month period, the cost of water would be approximate \$82,500 per year, while the circulation system once filled would recirculate the same water. Consequently, the operating costs for a flow through system would be significant over the lifetime of the water wall, which would continue to grown on an annual basis as the cost of water continues to grow over time. The circulation system would have annual maintenance costs but nominal compared to the cost of lost water from the flow through system and over the long term would be more cost effective while conserving water.

Currently, the tender includes the water wall feature, however, at a cost of \$175,000, this is an item that could be removed from the scope of work to reduce the additional funding requirement of \$328,000 to \$153,000. If the water wall is removed from the scope of the project, the wall would continue to include the detailed/contoured concrete to maintain it as a feature wall, but the water element would be eliminated.

Lightning protection system was considered but is not required

Following the final code review and confirmation with the Town's insurance provider, it has been determined that a lightning protection system is not required. This position has been established given the following considerations:

- The Church Street School is the tallest structure within the Library Square project, however, there are other structures nearby that are taller structures and if lightning were to strike, it would likely strike the taller structure before the Church Street School.
- Electrical consultants have confirmed that all equipment (electrical distribution, communication, AV, security systems) are protected from lightning, line surges, over-voltage, etc. through the building grounding system and surge protection devices.

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- Historically, statistics have shown that the facility has not had any lightning issues over the last 100+ years

However, if the preference is to include a lightning protection system as added precaution, it would protect the buildings themselves and would be interconnected with the building grounding system. Electrical Consultants note that the lightning protection system could be added to the Church Street School/Addition and the Bridge/Library Addition (\$115,000) or just the Church Street School/Addition (\$57,500).

The lightning protection system would extend over all the roof areas of both the existing Church Street School and the addition. Based on the design going over the roof of the school house, the Ontario Heritage Trust (OHT) would need to review and approve. If approved by OHT, the added scope of work and additional cost would need to be funded.

Project timelines continue to progress with substantial completion expected September 2022

Chandos Constructions Ltd. have confirmed that they are ready to mobilize shortly after the project is awarded. Upon review of their project schedule, they could mobilize in September 2020 and anticipate substantial completion by September 2022.

Advisory Committee Review

Staff and architects had previously attended both the Heritage Advisory Committee and the Accessibility Advisory Committee to obtain their feedback as the design was being developed.

Legal Considerations

Although the Procurement By-law gives the CAO the authority to award this contract since it is within a Council approved budget (and approved adjustments) for the project,

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at a Special Council Meeting on December 17, 2019 Council requested that staff report back to Council prior to the tender being awarded.

Financial Implications

As noted previously, the Town's lowest compliant bid for the construction of the Library Square community hub was \$328,000 higher than the established budget. In an effort to preserve this project's established contingencies, staff have recommended that the project's overall approved budget of \$51,611,700 be increased by an equivalent amount to \$51,939,500.

Report FIN20-019 also included in tonight's agenda will offer a more detailed breakdown of this recommended final budget, as well as a final funding strategy for Council's consideration and approval.

Financing of this project is a necessity. Report FIN20-001 which can be found in tonight's agenda recommends a final financing strategy for this project's proposed funding sources which will not be readily available over the course of the Square's construction and up to 20 years afterwards.

Communications Considerations

The Town of Aurora will use 'Inform' as the level of engagement for this project. There are five different levels of community engagement to consider, with each level providing the community more involvement in the decision making process. These levels are: Inform, Consult, Involve, Collaborate and Empower. Examples of each can be found in the Community Engagement Policy. These options are based on the International Association of Public Participation (IAP2) Spectrum and assist in establishing guidelines for clearly communicating with our public and managing community engagement. In order to inform, this report will be posted to the Town's website and the Library Square dedicated web page.

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Link to Strategic Plan

The development of Library Square supports the following Strategic Plan goals and key objectives:

Supporting an exceptional quality of life for all in its accomplishment in satisfying requirements in the following key objectives within these goal statements:

- **Invest in sustainable infrastructure**
- **Celebrating and promoting our culture**
- **Encourage an active and healthy lifestyle**
- **Strengthening the fabric of our community**

Alternative(s) to the Recommendation

1. Council may provide further direction.
2. That the Tender 2020-55-CMS for the Construction of the Library Square Project be awarded to Chandos Construction Ltd in the amount of \$40,834,865 which includes additional allocated funds of \$153,000 (excludes water wall feature) resulting in a total project budget of \$51,764,500.

Conclusions

Following an extensive consultation, planning and design process, the Library Square project has been tendered resulting in a bid price from Chandos Construction Ltd. within the 5% agreeable amount of the project budget. With a couple of final decisions regarding the water wall and lightning protection, it is recommended to proceed to construction.

Attachments

Attachment 1 - Memo - Preferred Veil Aluminum Material

Previous Reports

CMS19-007 – Library Square - Addition to Church Street School
CMS19-008 – Library Square – Outdoor Square

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CMS19-019 – Library Square Project - Next Steps

CMS19-026 – Library Square – Veil

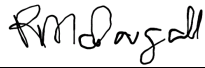
CMS19-031 – Library Square Project Update and Additional Funding

Pre-submission Review

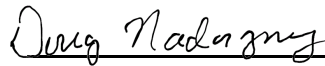
Reviewed by Agenda Management Team via email August 11, 2020

Departmental Approval

Approved for Agenda



Robin McDougall
Director
Community Services



Doug Nadorozny
Chief Administrative Officer

Attachment 1 - CMS20-010



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TO: Robin McDougall
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Aurora, ON
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CC: David Leinster - Planning Partnership
Leslie Camm - Colliers Project Leaders

RE: Aurora Church Street School House Addition -
Building Veil Development

MARCH 03, 2020

This Memo serves as a follow up to the selected veil material for the School House Addition.

Having continued to coordinate our drawings with a number of consultants, we have become aware of a degree of risk associated with the use of a Muntz Bronze material alongside the various metals that form the building envelope assembly. Specifically, the galvanized steel, aluminium and 'red' (untreated) structural steel within the building envelope would be subject to various degrees of galvanic corrosion, which could risk the integrity of the building assembly.

We followed up with one of the preeminent metal suppliers in North America, CBC Metals, noting each detail that may be subject to galvanic corrosion, and requesting feedback on how this matter could be addressed. The consultant pointed out that in addition to requiring gaskets at all joints and penetrations between dissimilar metals, we would also need to heed the effects of ionized vapours and wind-driven rain transmitting across the building assembly at weeps and flashing in the vented cavity of the rainscreen assemblies both behind the Veil and below. The list of details subject to revision included, but was not limited to:

- Stainless Steel Flashing
- Stainless Steel Parapets
- Stainless Steel Girts and Sub-girts
- Painted hat channels and strapping
- Double-coating all Galvanized Steel Studs in the Cantilever soffit with specified Tnemec coating
- Stainless Steel Fasteners
- Stainless Steel Light fixtures and fastening channels on the Veil and elsewhere on the building exterior
- Stainless Steel Gutters + Roof Drains
- Stainless Steel Rainwater leaders within the building
- Triple-coating all red Steel with specified Tnemec coating to prevent corrosion
- Anodizing *and* Power-Coating Aluminium Curtainwall Framing

With consideration to the added costs of introducing these elements into the building assembly, and the degree of risk associated with any of these elements failing from not having been installed properly (ex. site-cutting hat channels without treating the ends), which could result in failure of structural members holding up



the panels of Muntz, or those holding up the Concrete Panels, we have determined that proceeding with the inclusion of the Muntz material in the façade may not be in the Town's best interests.

We have considered other metals for the building Veil, including aluminium and zinc, which will not subject the building to any corrosive action. Following up with our structural consultant, it became clear that using zinc in the available panel sizes and properties would require excessive structural reinforcement that would compromise the building envelope and overall design intent. Meanwhile, aluminium panels were available expected sizes and were sufficiently strong and light as to not require any additional reinforcement. We therefore concluded that aluminium is the best-suited material for this application. The material is available in a select number of anodized (not painted) finishes, ranging from silver to black. Our recommendation is to carry a bronze finish. We have followed up with ERA on the matter of coordination with the Ontario Heritage Trust. ERA has consulted the Ontario Heritage Trust on this matter, and it has been communicated that the OHT supports this direction.

We believe that this solution will best serve the Town well into the future, so that the Cultural Centre continues to act as a brilliant beacon to Aurora's Cultural Precinct.

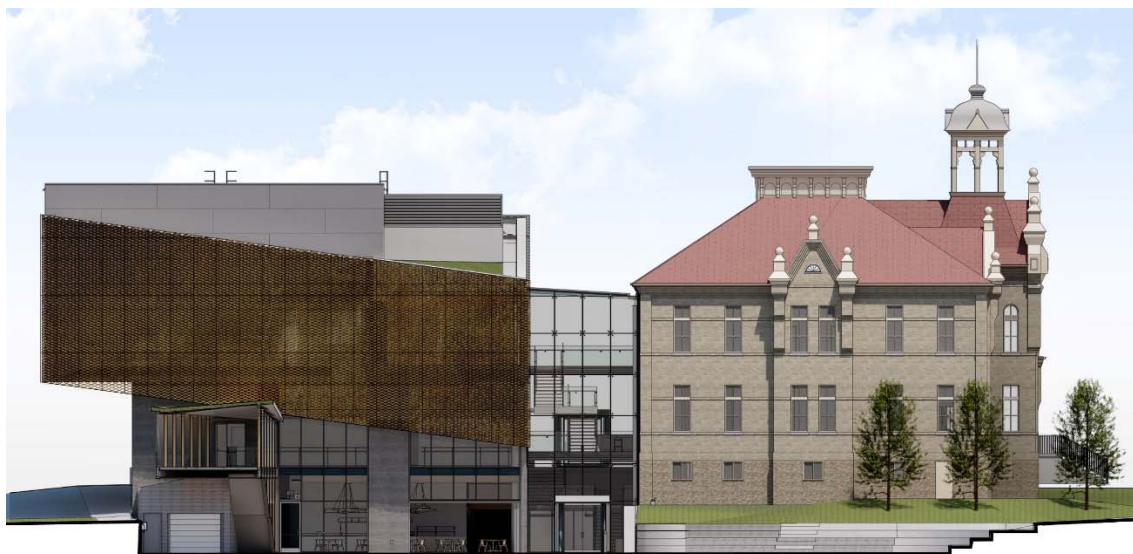


Figure 1 - West Elevation with Bronze Anodized Aluminium

Yours Sincerely,

Roland Rom Colthoff OAA, FRAIC, AAA, LEED AP
Director, RAW Design



