COMMITTEE OF THE WHOLE - FEBRUARY 22, 2011

NEW CITY HALL – FINAL REPORT

Recommendation

The Commissioner of Community Services, in consultation with the City Manager and the Commissioner of Finance/City Treasurer recommends:

1. That the previous $4M unfunded amount be funded as follows: $2.5 M Net Proceeds from Surplus Land Sales and $1.5 M from debt capacity as a result of lower interest rates; and,

2. That the budget for the new City Hall project be increased by $15.6 million with no impact on property taxation; and,

3. That additional funds available totaling $9.1M from the original funding sources as outlined in this report be approved; and,

4. That consistent with previous Council direction, $6.5 million of the AMO Gas Tax Grant be approved as a funding source; and,

5. A confidential memo from the Commissioner of Legal and Administrative Services, and the City Solicitor be received; and,

6. That the inclusion of the matter on a public Committee or Council agenda with respect to increasing the capital budget identified as New City Hall – Final Report is deemed sufficient notice pursuant to Section 2(1)(c) of By-law 394-2002.

Contribution to Sustainability

This report is consistent with the priorities previously set by Council in the Green Directions, Vaughan, Community Sustainability Environmental Master Plan, Goal 6, Objective 6.1:

- To fully support the implementation of Green Directions at all levels of City operations.

The City of Vaughan's new City Hall is an eco-friendly sustainable building designed to meet a GOLD Standard in Leadership in Energy and Environmental Design (LEED).

Economic Impact

The project budget increase in the amount of $15.6M for the additional work for the completion of the City Hall is funded from various funding sources with no impact on property taxation. The budget increase and funding is discussed in more detail later in this report.

Communications Plan

The new City Hall is quickly becoming an iconic symbol of the City of Vaughan as a fast-growing, progressive, and environmentally-responsible municipality. The award-winning design of the building has been widely praised. There has been considerable media coverage of the new City Hall, highlighting its environmental and sustainable attributes, as the following excerpts demonstrate:

> "Civic pride is at a new high in the City of Vaughan, where the brand new City Hall stands as a testament to design innovation and a commitment to enhancing the delivery of municipal services while respecting the environment."
> – *Today's Homes*

> "The City of Vaughan is taking a step forward in favour of the environment, and a big one at that. At a time when it is needed most, Vaughan has demonstrated leadership in innovation, environmental integrity and economic foresight."
> – *Vantage Magazine*

Public consultation began very early in the process. Meetings were held as follows:

- July 9, 2003 – First Open House
- July 17, 2003 – Second Open House
- July 23, 2003 – An evening Public Information Meeting
- October 27, 2003 – A second evening Public Information Meeting
- January 20 – 22, 2004 – A three-day Open House
- December 29, 2006 – Public Meeting to Award Contract (14 verbal deputations and 7 written submissions received.)

The project has been featured in the following publications and received very positive coverage:

- *Daily Commercial News*, A Reed Construction Data Canada publication – July 2010
- *Vaughan Citizen* (Video), "Sneak peek at Vaughan City Hall – August 2010
- *ReNew Canada Magazine*, The Infrastructure renewal magazine – Sept/Oct 2010
- *Award Magazine*, national architecture/construction/interior design magazine – October 2010
- *Sustainable Builder Magazine* – Fall 2010
- *Today's Home* – Fall 2010
- *Vantage*, GTMA's Foreign Direct Investment Magazine – Winter 2010
- *Snap Vaughan East* – Winter 2010
- *Whatever Magazine* – Spring 2011

The new City Hall has set a standard for architectural design and LEED construction. A number of other publications have expressed an interest in publishing stories in 2011 once the City Hall is open to the public:

- *Partners Magazine* (Italian Chamber of Commerce of Toronto) – Spring/Summer
- *Building Magazine* – Spring
- *Canadian Architect Magazine*
- *The Star* – architecture column (Chris Hume)
- *The Globe and Mail* – architecture column (Lisa Rochon)
- *Construction Canada Magazine*
- *Architecture Review*
- *Design Exchange Magazine*
- *Green Source Magazine*
- *Architecture & Detail Magazine*

In addition to media coverage, there has been an ongoing communications campaign to engage the community in what is the biggest and most complex building project ever undertaken by the City. The new City Hall is "public space" and all members of the public should be encouraged to make use of the facility. Activities have included:

- Public consultation meetings during the design phase.
- Grade school program with design competition.
- High school awareness program and hoarding painting contest.
- Public open house during the design phase.
- Maintaining a photo history of the building's construction.
- Creating and maintaining a special section on the City's website.

- Producing a 24-page brochure *Leading the Environmental Age*, in both print and electronic formats.
- Conducting media tours of the facility under construction.
- Holding a cornerstone ceremony and media event.
- Issuing regular News Releases.
- Posting project updates to Facebook and creating a Facebook photo gallery.
- Showcasing the new building at the 2010 Inaugural of Council.
- Including project updates in the *City Update* e-newsletter.

The importance of the project is underlined by the selection of the new City Hall's iconic clock tower as the key design component of the City of Vaughan's new logo, launched in 2010.

An employee education strategy has been developed as part of Green Directions Vaughan and the new City Hall is a core component of that strategy.

Currently, there are two videos in production – one providing a project overview and the second highlighting environmental features – which will be used for public presentations and expanding the City's website content. Other proposed activities include:

- Official opening event
- School tours
- Article on City Hall artwork program
- Article on new technologies in the City Hall
- Gold LEED certification event

Purpose

The purpose of this report is to provide Council with a final comprehensive report regarding the development, construction, project budget and funding for the New City Hall.

Background - Analysis and Options

The Need for a New City Hall

The original Vaughan Civic Centre building, located at 2141 Major Mackenzie Drive, was opened in 1982. Over the past 25-years the City's population has increased rapidly rising from 29,700 in 1981 to approximately 296,800 in 2010. This resulted in an increase in staff and services required to meet the needs of the new residents. By the early 1990's more space was required to accommodate the growing staff complement and the public as the existing building only had approximately 5000 square feet of public space.

To address the problem, additional office space was provided by a number of means. This included housing Civic Centre staff through: The use of temporary structures (portables) and the conversion to offices of a former works building and dwellings on the Civic Centre site; relocation to the Joint Operations Centre on Rutherford Road; and the acquisition of the former MNR site and buildings on Dufferin Street. As a result, the staff was dispersed to a number of buildings, sometimes under less than optimum conditions, resulting in inconvenience to both the public and employees and the loss of productivity. The reconsolidation of the Civic Centre employees at a primary site would address these problems.

The Design Competition

After an extensive evaluation process Council adopted a resolution directing that the Vaughan City Hall remain at the current Civic Centre location at 2141 Major Mackenzie Drive in Maple. The resolution provided that Staff immediately initiate the planning and design process for the new City Hall and report to the Committee of the Whole meeting on May 5, 2003.

The May 5 report identified a number of options for proceeding. On May 12, 2003, Council directed that the design for the Vaughan Civic Centre proceed on the basis of an Architectural Design Competition. The competition would include the new City Hall building, a Master Plan for the entire Civic Centre site and the municipal park. To be consistent with the requirements for the conduct of such competitions, the retention of the Ventin Group Architects was approved by Council to act as the City's Professional Advisor.

On June 23, 2003, Council authorized the issuance of a Request for Expression of Interest to the Architectural Profession, with the objective of short-listing from three to five design firms, which would receive a Request for Proposal. The Request for Expression of Interest was issued on June 26, 2003 and was advertised both locally and nationally. The closing date was June 24, 2003. A total of 76 Requests were picked up and 24 Expressions of Interest were submitted.

The "Expression of Interest Selection Committee" met during the month of August and selected four proponents to receive the Request for Proposal. The four proponents were: ZAS (Zawaski Armin Stevens Architects) and the Zeidler Partnership; Adamson Associates Architects; Hotson Bakker + Montgomery Sisam Associated Architects Inc.; and KPMB (Kuwabara Payne McKenna Blumberg) Architects.

On September 8, 2003, Council directed that the Request for Proposal be issued to the firms recommended by the Expression of Interest Selection Committee for the construction of a City Hall of approximately 239,000 square feet. In addition, Council confirmed the composition of the Competition Jury. It would be made up of the Mayor, the three Regional Councillors, the City Manager and three members of the Architectural Profession: Ms. Peggy Deamer, New York; Mr. Roger Du Toit, Toronto; and Mr. Barry Samson, Toronto. The Request for Proposal was issued on October 2, 2003 and closed December 10, 2003. All four firms submitted compliant proposals. In accordance with the competition rules, the submissions were anonymous.

Judging took place at the McMichael Gallery in Kleinburg on January 14 and 15, 2004. All members of the Competition Jury were present. The jury's individually scored the four firms and their recommendation of the winning design was unanimous.

Public Consultation during the Design Competition

Public consultation took place throughout the design competition. On June 23, 2003, Council directed that a public meeting be held to inform the public of the design process and to allow for input on its priorities. An evening public information meeting was held at the Vaughan Civic Centre on July 23, 2003. Notification of the meeting was provided by the following means: Property owners within 1000 m, all ratepayer organizations, the Vaughan Chamber of Commerce and residents of Maple Manor were notified by mail/letter. Newspaper notification was given by way of the City Page in *The Liberal*. Written input was requested by all residents.

Council directed that the comments received from the public be addressed in a report to the Committee of the Whole meeting on September 15, 2003. In response to the report and comments, Council adopted recommendations requiring that the submissions from the Ratepayers' Organizations be appended to the Request for Proposal issued to the Architects; and the Architects be advised that the public input is being provided for their consideration as a complement to the design criteria set out in the RFP.

On October 27, 2003, an additional Public Information Meeting was held in the evening at the City Playhouse in Thornhill. Notification of the meeting was advertised in the newspaper by way of the City Page in *The Liberal*. Residents of Maple Manor; all Ratepayers' Associations and Vaughan Chamber of Commerce were notified by mail. Representatives from the short listed Architectural firms were in attendance to hear the public comment and incorporate the comments in their respective design.

In advance of Council's consideration of the recommendation of the Competition Jury, a three day open house was held in the Council Chambers, from January 20, 2004 to January 22, 2004, to provide the public with an opportunity to view the proposals. Notification of the open house was given by newspaper by way of the City Page in *The Liberal.* Residents of Maple Manor, all Ratepayers' Associations, the Vaughan Chamber of Commerce and residents in the vicinity were notified by mail/letter. Notice of the February 3, 2004 Committee of the Whole meeting, where the jury recommendation would be considered, was also included in the notice for the open house.

Concept and Material Precedent of the Winning Design

The design chosen for the Vaughan Civic Centre was comprised of a campus of low-rise buildings that define a public terrain of open spaces, which was inspired by the clarity of the early planning principles that were applied to Ontario towns. In response to Vaughan's early agricultural heritage, the campus is organized according to a series of east-west linear bands that echo those of the early farmlands. The modest architectural palette for the precinct landscaping and building also takes its inspiration from the landscape of the region, using the natural materials and colours of the area.

The exterior cladding consists of terra-cotta panels and terracotta solar louvres, Ontario limestone panels at the Council Chamber and glass curtain walls with integral aluminum reveal panels. The palette, where possible, uses local and durable materials which minimize the requirement for long-term maintenance.

Interior spaces are finished with a similar natural palette of materials including: limestone and terrazzo floors; exposed architectural concrete; and key public spaces are clad in wood panels. Atria and full height glass walls allow for views through and out of the building, while also allowing natural light to stream in to the public spaces (increase of approx. 11,000sq.ft.) and work lofts. Work lofts are materially restrained with carpet tile on a raised floor system and glass partitions to allow for light penetration into the central areas of the floor plate. Gypsum board partitions are provided in areas requiring privacy and the ceilings are of exposed concrete.

What Committee members appreciated most about the building design is the amount of natural light and ventilation provided due to the LEED rating. They commented that natural light, accompanied by simple, clean and serviceable finishes created an air of bright, open, and practical simplicity.

The Project was initially intended to target LEED Silver status. However, In June 2005, Council in an effort to demonstrate community leadership in sustainable design and the responsible use of energy approved a LEED Gold upgrade. Among the design strategies implemented for the building is the use of a high performance building envelope, passive solar shading, access to day lighting for a high proportion of work areas, natural ventilation, operable windows and building waste heat and cooling recovery. Many of these measures will contribute to lower energy expenditures. A portion of the building roof areas are green roofs which is irrigated by recovered storm and ground water. The project also encouraged the use of alternative transportation with bicycle storage and change rooms being provided as well as facilities for alternative fuel vehicles.

Execution of Client-Architect Agreement

On February 3, 2004, a Special Committee of the Whole meeting was held to consider the recommendation of the Competition Jury. The Committee of the Whole recommended that the jury selection be ratified and directed staff to negotiate the architectural fees for the project with the winner of the design competition (KPMB). Subsequently, on February 9, 2004 Council ratified the recommendation of the Competition Jury and The Committee of the Whole thereby selecting the firm KPMB (Kuwabara Payne McKenna Blumberg) Architects as the project Architect.

The Professional Advisor in order to advance the negotiations reviewed a number of comparable projects. The advisor specifically looked at the range of rates that have been used to calculate the professional fees for a number of public sector projects. The comparable projects and range of rates are as follows:

Project	Fee
Welland Consolidated Courthouse - $10 million	9% of total construction cost
Lennox and Addington Admin. Centre - $5 million	12% of total construction cost
Kitchener City Hall - $65million	10% of total construction cost
College University Expansion Project	10% of total construction cost

The resulting negotiations are reflected in the content of the agreement. The fee for professional services was calculated on the basis of 6.9% of construction costs. In addition, $350,000.00 was required for reimbursable expenses.

The professional services encompassed by the 6.9% fee include structural, mechanical, electrical and civil engineering, urban design, landscape architecture, transportation, fire protection, code analysis, and interior design. It excluded the selection, procurement, or installation of furniture, furnishings and related equipment. In addition, any additional specialty services such as LEED commissioning, Audio Visual, Acoustics and food services could be retained at the discretion of the City on an as-needed basis.

The agreement provided for an initial payment of $70,000.00 upon execution. The payment constitutes the remaining portion of the $100,000.00 awarded to KPMB for winning the Civic Centre Design Competition.

On May 10, 2004, Council authorized the Mayor and City Clerk to execute the client-Architect agreement (Document 6) between the City of Vaughan and Kuwabara Payne McKenna Blumberg (KPMB) Architect for the professional Services relating to the first phase (City Hall) of the Vaughan Civic Centre projects.

Approval to Proceed with the Project

On November 8, 2004 a report was submitted to Council at the completion of the Schematic Design Phase. Direction was received to proceed to the Design Development Phase. Design Development was completed in June of 2005. A report was submitted to Council on June 27, 2005. Council directed that the Civic Centre project proceed to the Construction Document phase of the design process and that the design be upgraded from LEED Silver to LEED Gold. In addition, the project budget was set at $89,228,343 (excluding temporary space accommodations). This total included construction costs estimate of $71,382,675, and soft costs at 25% of original construction costs estimate, amounting to $17,845,668 (2004$). Soft costs includes such items as architectural and professional fees, specialty consultants, furniture and fittings, equipment, cabling and information technology equipment. It was noted in the report that soft costs usually run at 20%-35% of construction, and the 25% was a conservative estimate. It was also noted that the construction budget was estimated as the design was not complete, and the impact of LEED gold and associated costs were not fully defined at this stage.

In addition, Staff was authorized to initiate the prequalification process for the purpose of establishing the General Contractors that would be eligible to receive the tender for the construction of the New City Hall. The preliminary schedule included in the report indicated that the construction tender would be awarded in December 2005.

Programming of Increased Public Space

Staff were authorized to retain consulting services to identify the potential uses of the additional 11,000 square feet of public space. (e.g. Council Chambers, Multi-Purpose Media Room, Meeting Rooms, Public Square). This was a significant increase over the 5000 square feet in the old city hall. Consultation took place with potential users,(including the public) to determine what services and design features would be required to optimize the use of the over 16,000 square feet public facilities in the design of the new building. The programmed space also formed part of the review. Most of the public interaction will be on the first and second levels. The preliminary design of these areas indicated a need for more floor area to enhance the functionality of this space, while retaining the original design concept. As a result the 1.3 X grossing factor was increased to 1.38 and additional space (774 sq m., 8331 sq. ft.) was added for public waiting/assembly areas and uses such as kiosks/commuter terminals.

Retention of the Fairness Monitor

Also on June 27, 2005 Council directed that a "Fairness Monitor" be appointed from the legal community, to oversee the process of prequalifying General Contractors and the eventual award of tender for the construction of the new City Hall. Detailed Terms of Reference would be prepared by the City Solicitor in consultation with external legal counsel. The Honourable Peter Cory Q.C. was appointed as the Fairness Monitor. Justice Cory was a member of the Supreme Court of Canada from 1989 to 1999.

The Prequalification Process

On June 27, 2005 Council approved the composition of an Evaluation Committee to assess the prequalification submissions. The Committee was also supported by the Purchasing Services Department and external and internal legal counsel.

The Professional Advisor, the Project Architect and legal counsel worked with the Purchasing Service Department and external legal council to develop the Prequalification Document. It identified the standards and qualifications under which the prospective contractors would be evaluated.

Prior to the issuance of the Prequalification Document, it was reviewed and approved by the City's external legal counsel and the Fairness Monitor.

The Prequalification for the General Contractors was issued on March 3, 2006 and closed on March 30, 2006 (RFPQ06-015). It was publicly advertised in the DCN (Daily Commercial News), ETN (Electronic Tendering network) and the OPBA (Ontario Public Buyers Association).

The Prequalification Criteria DID NOT CHANGE after the documents were issued. The City process was very successful in attracting submissions from twelve experienced and reputable firms.

The Evaluation Committee, chaired by Peter Berton, the Professional Advisor met to review and evaluate the compliant bids. Upon completing the evaluation process five General Contractors were prequalified by the Committee. They included:

- Eastern Construction Company Limited, Toronto, Ontario;
- Ellis Don Corporation, Mississauga, Ontario;
- Maystar General Contractors Inc., Vaughan, Ontario;
- PCL Constructors Canada, Inc., Mississauga, Ontario;
- Vanbots Construction Corporation, Markham, Ontario.

Concurrently, a prequalification process for Sub-Contractors was completed. The Request for the Prequalification for Sub-Contractors was issued on April 18, 2006 and closed on May 11, 2006 (RFPQ06-071). There were seventy-three (73) submissions received for the following nine (9) Sub-Contractors:

- Electrical;
- Mechanical;
- Architectural Metal;
- Millwork;
- Dewatering;
- Concrete and Formwork;
- Curtain Wall;
- Roofing;
- Masonry.

The submissions were evaluated by a team of consultants (Electrical, mechanical, etc.) supervised by the Architect KPMB and reviewed by the Evaluation Committee and the Fairness Monitor. Submissions were evaluated on a completed Canadian Construction Document Committee (CCDC 11) together with related documentation that demonstrated project management, safety and bonding capabilities.

The Tendering Process

The tender package for the New City Hall was issued to the five (5) pre-qualified General Contractors on June, 16, 2006 with a site visit scheduled on July 4, 2006. At the site visit, it was indicated by the General Contractors that they would require additional time, beyond July 26, 2006, to close the City Hall bid as there were other large projects where they were also involved in the bidding process. In fact PCL indicated that if there was not an extension, they could not participate. The City granted a three week extension to all bidders and revised the closing date.

The Project Architect - KPMB, and the City's Professional Advisor received another request from three General Contractors (who eventually submitted bids) indicating that there was a need for more time to obtain pricing from specific sub-trades. All three General Contractors listed below submitted written requests asking to extend the closing time by several weeks. The City's Architect and Professional Advisor reviewed the circumstances and recommended that a five week extension be granted to allow for the maximum number of qualified bidders to submit. The request was reviewed by the Fairness Monitor who agreed with the granting of the extension.

The bids were closed on Friday, November 24, 2006, and three bids were submitted and were publicly opened on the same day. The Fairness Monitor was present during the entire process of closing and the public opening of the bids.

The following bids were received:

Contractor	Total Tendered Price
Maystar General Contractors Inc. Concord, Ontario	$84,300,000.00
Vanbots Construction Corporation Markham, Ontario	$90,000,000.00
Eastern Construction Company Limited Toronto, Ontario	$108,000,000.00

The bids were opened at the office of the City of Vaughan Purchasing Services Department in the presence of the Honourable Peter Cory, Fairness Monitor, Goran Milosevic, Architect – KPMB and Peter Berton, the City's Professional Advisor. The tender documents submitted at closing time were in full compliance with the tender submission requirements and without qualifications.

Bid Evaluation – KPMB Architects

KPMB analyzed the cost estimate prepared by the City's independent cost consultant, Curran McCabe Ravindran Ross dated November 13, 2006 based on tender drawings. KPMB utilized this estimate and related cost including value engineering decisions implemented prior to tendering, and determined that a value of $86,300,000.00 represented the target revised estimate for the Construction Cost for Phase 1 (City Hall) of the new Civic Centre. The first cost estimate was prepared by KPMG LLP, on behalf of the City in 2002 to provide budget estimates for Council's consideration during the City Hall discussions. The estimate was done prior to retention of the Architect or selection of design and was based on October 2002$ and tender levels.

The principle factors which affected this project increase at the time of award are general material cost escalation over the course of the last year and specifically concrete and curtainwall trades and increases in energy and metal costs which have affected roofing and asphalt materials. The building increased from 239,000 square feet to approx. 291,000 square feet based on the final operation review performed by the City's program consultant. The construction industry also experienced a tremendous boom in the years 2005, 2006 and 2007, and as such, there have been significant increases in mechanical and electrical trade costs due to volume of work available.

Based on the above-noted cost review and updated project cost analysis it was found that the bid submission of $84,300,000.00 tendered by Maystar General Contractors Inc. represented fair value to the City.

By accepting the low bid, the project budget was increased accordingly to $107,000,000.00. The amount included $84,300,000 for the construction of the new City Hall. (Included in the $84,300,000 was a cash allowance of $2.8 million for works to be designed and completed during construction

Cash Allowance

At the outset of a typical construction project, there are cash allowances carried in the tender for works where the final design of a certain scope is not yet feasible or determined at the time of tender. For example, at the City Hall, further coordination was required with staff to determine the extent and configuration of the millwork package (Council Chambers, service counters, cabinets, kitchens, shelving, etc.) For example, based on information available early on in the project, the Architect made a recommendation for an amount to carry for the millwork package which is included in the tender price. Cash allowance include supply and installation and do NOT include mark-ups.

Expenditures from cash allowance stipulated sum is directed by the Architect (consultant) in writing. (Section 01210, Part 1, subsection 1.1 to 1.8). The Architect delivers the design and specifications to the contractor and directs the contractor to obtain bids, at no increase to the contract price. The Architect and the appropriate consultant reviews the bids received and recommended the lowest qualified bidder. The amount, with no markups or installation costs are included in the original tender price, so the contractor simply draws against the allowance in his monthly progress draws. The unexpended amounts of cash allowance is deducted from the contract price at completion of work.

Below is a list of the cash allowance items included in the City Hall Tender.

List of Cash Allowances items

The following items are included in the Contract under Cash Allowance:

1. Supply and install Civic Square tree.
2. Supply and install boulder at Chapel Garden.

3. Supply and install clock at tower.
4. Supply and install millwork and stone countertops, including casework hardware, complete with associated finishing hardware required, indicated, or scheduled, as identified on Schedule SC 11.00 Series.
5. Supply and install audience seating at Council Chambers.
6. Supply and install sound system/bells for tower.
7. Supply and install under floor sound masking system.
8. Supply and installation of interior window film and regulatory site signage.
9. Supply only of light fixtures.

Summary of Cash Allowance included in the Tender

	Allowance	**Remaining**
Civic Square Tree	$5,000.00	$5,000.00*
Landscape Boulder	$3,000.00	$3,000.00*
Clock at Tower	$15,000.00	$0.00
Regulatory Signage & interior Window treatment	$600,000.00	$400,000.00*
Council Chamber Seating	$100,000.00	$7,601.90
Tower sound/ Bells	$15,000.00	$15,000.00*
Sound masking System	$100,000.00	$0.00
Millwork	$1,500,000.00	$150,000.00
Supply of light fixtures	$500,000.00	$0.00
Total	**$2,838,000.00**	**$580,601.90**

- To be completed

Soft Cost

A typical project budget consists of two components---hard costs and soft costs. Hard costs are typically the amount of the construction of the building only, or the tendered amount which is in the construction contract with the General Contractor. Soft costs are all other project costs and typically include such things as architectural fees, furniture, legal and survey, signage and wayfinding, project management fees, moving expenses and advertising. In this budgeted amount, the soft costs also included the costs to conduct a design competition, retention of the fairness monitor, demolition of buildings prior to award and LEEDS commissioning.

Typically, depending on the type of project, soft costs run between 20 and 35 percent. Most government agencies carry a range between 30 and 35 percent because of the amount of professional and consulting fees that are typically associated with government projects. In the case of the Vaughan City Hall, and notwithstanding the above additional inclusions, a budget of 25 percent of the construction costs was originally carried for the project. The construction budget was increased at the time of tender award, however due to oversight in the final budget calculations, the soft costs were not adjusted upward accordingly. Therefore, the soft cost budget is currently approximately 21 percent of the tender price for construction. The result was that the soft cost was under budgeted by approximately $3.6 million. In addition, the City's 3 percent administration cost was also under budgeted by approximately $400,000 for a total of $4 million under budgeted amount.

Summary of Soft Costs in the Project Budget

Soft Costs	**Actual/Committed/ Forecasted Amounts**
Design Competition	$ 155,767
Site Costs(Pre-Contract Award)	$ 421,713
Prime Consultant (as per Document 6)	$ 7,121,444
Sub- Consultant (not listed in Document 6, Article 6)	$ 2,082,218
Furniture(Tender #10-150)	$ 3,529,518
Equipment(Data, AV Equipment, Security)	$ 5,188,521
Miscellaneous	$ 78,618
Impact HST @ 1.76% Effective July 1st 2010	$ 321,602
Total soft costs committed	$ 18,899,401

Construction Cost Summary for Change Orders

The chart below illustrates the categories where most of the changes in scope of work occurred. The rationale for some of the major scope changes within each category and the associated costs are summarized below. The Architect and his design team in consultation with the Architect Consultants determined changes necessary to best meet the functional and operational requirements of the building. The required additional work was requested by the Architect through the issuance of one of the following: contemplated change order (CCO), Site Instruction (SI), or a Change Directive (CD).

Operational and programmatic changes were identified by the City to ensure functionality and efficiencies. Over the course of the building construction user requirements were evolving and were also incorporated into the project. These changes were discussed with the Architect, and once it was determined that it could be done without any major impacts to the project, the Architect initiated the change. The costs associated with the required changes were received as quotes. The quotes were reviewed in accordance to the Canadian Construction Document Committee(CCDC2), section 0800, and by the process described later in this report under the heading “Thorough Review of Payments”. Once the quotes were approved they were converted into Change Orders (CO). A change order is a written amendment to the contract prepared by the Architect.

Site Conditions	$3,300,000.00
Owner Upgrades	$1,625,000.00
Architectural Revisions	$1,285,000.00
Structural revisions	$836,000.00
Mechanical revisions	$3,060,000.00
Electrical revisions	$388,000.00
Regulatory Authorities	$1,225,000.00
Total	**$11,719,000.00***

* The contract a stipulated price contract. The additional costs identified in this report are associated with scope changes and the related costs, and are not as a result of any delays.

1. Site Conditions

A. Contaminated Soils:

The site for the New City Hall was formerly a York Region and Vaughan public works yard. It had a salt dome and asphalt storage and fuel storage for road repair in the 1960s which left sodium, fuel and asphalt contamination on the site. The City of Vaughan had a public works service garage with a full tank and oil storage tank. The existing subsurface soil conditions created additional costs related to contaminated soils on the site.

A geotechnical (soils) report was prepared in 2004 on which the consultants based their design. As part of the geotechnical investigation more than 50 bore holes were carried out over the site. That investigation identified some contaminated soils under the original City fuelling station as well as pockets of contamination in various areas. These soils were remediated prior to construction under as separate scope of work.

However, during construction it was discovered that other contaminants existed in the following categories:

- Fuel residue
- Asphalt residue
- High sodium content

The City public works building had an oil tank indoors, which was underneath the garage and was not accessible at the time of soils testing. The hydraulic lifts also inside the building had ruptured at some point and leaked, which was discovered during the excavation. Both of these discoveries revealed further contamination requiring costly removal and disposal. There were also existing buried site services that required removal that were not evident in the soils reports.

In summary, the extent of contamination was far greater than originally expected and this cleanup incurred additional costs.

B. Water Table:

It was establish during the design phase that Maple has a very high water table. A hydrogeological report (water table report) was conducted in conjunction with the soils report in April 2006, to determine the direction and volume of flow of the water table. The report design parameters stated that the site indeed required dewatering during excavation. The report outlined the flow rate that was used to determine the pumping capacity needed during excavation. However, at the time of excavation it was determined that water flow was measured at almost double the flow stated in the report. This increase volume and flow required an increase to pumping capacity (number and size of pumps and drainage systems) and created the need for the design of permanent dewatering system, as well as additional weeping and drainage and lowering the elevation of dewatering systems.

As a result of the dewatering during excavation and wet subsurface conditions, additional mud slabs were poured as dry structural substrate as required by the structural engineers; as well as lower footing elevations for the building and elevator footings. The volume of water and flow was far greater than anticipated by the design engineers and had to be re-engineered.

C. West Approach and Plaza Entry to the Building:

The site, moving from west to east, slopes upward by more than one storey between the existing Civic Centre and the GO tracks to the East boundary of the property. The proposed elevation of the smaller public plaza is located approximately one storey above the existing parking area to the south of the existing Civic Centre. This is visually apparent at this time if one views the new building from the west.

When the Contract Documents were developed by the consultants in 2006, it was unclear as to when the subsequent phases of the main Public Square, Library and Office expansion would be constructed. It was anticipated that by the time the City Hall building was complete that subsequent phases would be underway and the main entry could be developed. Over the past year it became clear that these phases would not be on stream to coincide with the opening of the City Hall, and will not be construction until later. In fact, currently the schedule for the second phase is not yet determined. Therefore, new stairs and barrier free access ramps along with the related landscaping was required to make the change in grade and to allow barrier free access to west side main entrance to the building. In addition, revision had to be made to connect the east and west entries to Major Mackenzie Drive so that they were fully compliant with all the Regional road standards. The sidewalk from the west entry to the east entry road was not included in the tender drawings. The entrances and connections had to be re-designed by the Architect.

D. Below Grade Connections:

There were additional costs associated with the sewer connection which could not be done with an open trench so special drilling equipment was required. There were a number of below grade conditions which were encountered when dealing with water and sewer service connections to the main lines along with piping connections to the below grade cistern and oil storage tanks.

2. Owner Upgrades

A. Departmental Changes:

Prior to the Design Competition of 2004, the City programming consultant to developed a detailed building program setting out the size requirements for each position and department, as well as internal relationships. This document was issued to each competition and was the basis for the design. Subsequent to the competition further revisions and updates were carried out to the program and revisions were made to the design.

Since that time ongoing changes were required to the plans during construction to accommodate staff changes and additions in several departments and improve operational efficiencies.

These changes involved relocation of partitioning systems, electrical mechanical changes, and removal and relocation of glazing. Fortunately, because of the flexibility of partitioning and flooring systems, many of these changes did not involve the usual extensive demolition and disposal of material. The changes were relatively simple to implement and provided operational efficiencies.

B. Dry Sprinkler System in Computer Room:

City staff in consultation with the consultants agreed that this upgrade would be in the best interest of the City in the long term. This addition would protect the computer room against water damage to the computer systems by delaying the activation of the sprinkler systems for these areas in case of an alarm.

C. Barrier Free Upgrades:

The building was designed and permitted under the current Ontario Building Code. During the Construction of the Project, new code requirements came into force, and workshops to develop the next Code edition were already underway. The Project Team, in consultation with the Vaughan Accessibility Committee agreed to provide known upgrades to the Barrier Free design requirements of the building to ensure the City is incorporating the standards that will be introduced in the very near future.

The turning radius space requirements in the main public washrooms were increased in order to meet barrier free code requirements which will soon be introduced in the code requirements.

This required the relocation of walls to accommodate the larger wheelchair turning radius requirements. In addition, all washrooms have been outfitted with automatic door operators.

The original design called for door operators only to public washrooms. A design upgrade was made during construction to provide door operators on all washroom doors throughout the building to encourage universality and to comply with future standards which exceed the current building code.

D. Heat Tracing Upgrades:

The building features air shafts in each wing which introduce fresh air to the building at shoulder seasons to save on energy costs (described further under mechanical systems below). These shafts require sprinklers, and in consultation with the consultants, it was determined that best practice would be to heat trace these sprinkler pipes in the event of extreme weather or failure of dampers to close, avoiding costly frozen pipes.

E. Addition of the Day Care Centre:

Council, at the June 17, 2003 CW (working session) approved the provision of an employee daycare centre. One of the main reasons was attracting and retaining quality employees. The provision of an on site daycare would play an important role in identifying The City of Vaughan as a preferred place to work. Council at that meeting reduced the size from 7500 square feet, to 5000 square feet. This was done to minimize the impact of the budget, and staff was directed to review the impact on the budget.

The original design included space for the provision of a daycare centre for the employees. However, prior to tender, the outfitting and requirements of the daycare was removed from the base bid, and put in as a provisional item. This value engineering was done to achieve the budget targets set out for the project. This option existed since at the current time, there was no operator, and it was decided that fit out could be done a later date depending on the final bid received or additional funding. During construction, the City Hall Committee, in consultation with SMT believed there would be a benefit to have the day care facility outfitted. The Project Team felt that it could be accommodated within the approved project budget. The scope was revised, the design reviewed and updated and the provision of a daycare was added to the contract. .

F. Conversion of a meeting Room to a Chapel:

The original building program did not include a chapel in the building. However, recent trends at other City Halls indicates a growing demand for such non-denominational facilities. It was introduced by the Mayor and approved by the City Hall Committee, that the addition of such a facility would create a potential revenue source, as well as a service to the citizens of Vaughan. One meeting room at the Council Chamber level (which is perhaps less institutional in ambience than the rest of the building) was converted so that its appointments were somewhat less typical and more appropriate for activities or weddings. This room is still available as a public meeting room as it does not have fixed seating.

G. Technology in the New City Hall:

The technology strategy for the new City Hall is envisioned to serve two purposes. First is the requirement to have technology complement the new building's architectural and functional design. Second, is to establish a foundation for deployment of emerging technologies in the future. Also, in keeping with the City's principles of accessibility and transparency, the technology in the new City Hall will be used to enable public access to information and the decision-making process of Council.

For example, “hot spots” have been established in all public areas of the building and surrounding outdoors area to enable access to the Internet and City of Vaughan on-line information and resources. Information monitors have been located in strategic areas of the building to provide useful and timely information to the public about current events, initiatives and general public information, as well as live video casting of Council meetings. The technical infrastructure has been installed to support “self-serve” kiosks to enable effective and efficient delivery of services to the public as they become available.

The most significant deployment of technology has been in Council chambers and committee rooms. Leading edge audio/visual system has been specified and is currently in final stages of configuration. Technologies that are being installed include automated speaker queuing, electronic voting, electronic document management (agenda presentment), video/audio recording and web casting, and multimedia presentation capabilities from multiple sources. It is the goal to make the City of Vaughan Council chambers and committee rooms as functionally efficient as possible with the use of leading technologies.

Another significant technological improvement in the new City Hall is the central telephone system. The new system will replace the City’s current system which was originally acquired in the 1992 and upgraded in 1997. The new central telephone system will ensure the City is well positioned to leverage telephony technologies to realize internal operational efficiencies and to support effective delivery and improved level of service to Vaughan citizens.

Being a very large, open and accessible building, sophisticated surveillance and secured areas access control system has been deployed in the new City Hall. The system ensures that the balance between open access, security of public assets and personal safety is maintained.

A comprehensive report detailing planned technologies for the new City Hall was submitted to Council in May of 2008.

At the inception of the new City Hall project, best effort was made to anticipate practical future deployment of emerging technologies and to estimate the associated costs. In consultation with the City’s independent consultant, it was decided to include the technology components within the soft costs budget for design, configuration and implementation of the new City technology. The final budget could not be determined until the room criteria and equipment was selected later in the process (confirmed by City’s consultant in July 2005). Therefore it was excluded from the base bid to provide the City with flexibility in selection, and reduced costs. This included voice and data internal network, new central telephone system, new building security surveillance and access control system, and building audio/video infrastructure for multimedia distribution and presentment. During the new City Hall construction period staff and City’s consultant continued to research and review emerging technologies. On going discussions with staff and external consultants continued, in keeping to the vision for deployment of new and emerging technologies to ensure that the City’s ever growing requirements for use of technology would be adequately addressed in the new building. As a result, a more comprehensive audio/video system to support Council chambers, committee rooms and building multimedia content distribution and presentment was specified and implemented.

3. Architectural

The City Hall is a complex building at every level. This building was the result of a design competition aimed at achieving design excellence and sustainability. The complexity of such an advanced, sustainable, prototypical building creates many variables and challenges not previously encountered on other projects. The design vision to create a landmark City Hall forming part of a world caliber Civic Centre complex results in a building that became very challenging to build. In addition to the architectural and urban design features, the project has also undertaken the mandate to set a leading example of environmental sustainability and efficient operation through the use of innovative architectural, structural, mechanical and electrical

measures. The application of many of these systems were prototypical in their implementation and required significant coordination effort to execute the systems.

The City Hall is a custom prototypical building, built with a purpose to meet the needs of the end users unlike a conventional commercial building. Adjustments were made continuously throughout the building construction to accommodate evolving departmental functional requirements or other necessary technical revisions. Completing this work during the construction phase has eliminated the need to make changes after the building has been occupied. This will facilitate a smooth transition at move-in time and a minimal disruption to public service.

A. Exterior Envelope:

- **High performance glazing** with heat reflective coatings and ceramic frit shading coatings with triple glazing at selective locations. The glazing varied at each building elevation as required to suit the environmental requirements of each building elevation.

- **Unitized curtain wall system**. This is a factory built system fabricated in large sections and field assembled. This is an advanced system of fabrication and installation which delivers a system with high quality control because it is shop fabricated. The field tolerances are very tight and require precision in installation. At high vertical spans such as atrium glazing locations the curtain wall integrates the building steel structure. This created a major challenge for contractor and Project Team.

- **Manually operable window** units are located throughout the perimeter of the curtain wall at both exterior and interior locations. Thermostats with indicator lights identify when the exterior climatic conditions are suitable for the exterior windows to be opened.

- **Terracotta louvre sunshade** system is located at the major south and west elevations to control solar heat gain and glare. This is an innovative approach of the use of terracotta panels not used previously in Ontario.

- **Terracotta rain screen wall** system has been used and has been visually integrated with the terracotta louvres. The installation of the two systems required precise installation techniques and procedures. The terracotta is a durable local material in keeping with the sustainable ambitions of the building.

- **Green roof** applications are situated at areas visible from within the building. The green roofs provide added insulation value to the building and help reduce heat island effect. The installation of the system requires more care and coordination with mechanical rooftop irrigation requirements and associated roof penetrations. At non-visible areas highly reflective roof surfaces have been used.

B. Interior:

- **Narrow floor plates**, higher than normal ceilings, and full-height glazing allow for deep light penetration to all building occupants and visitors providing the benefits of natural daylight over artificial light for longer periods during the day.

- **Atria** located centrally at each of the three wings between floor plates allow for light penetration to the centre of the building as well as centralized air circulation. Light can reach internal office and work spaces which otherwise would not have been exposed to natural daylight.

- **Demountable glass partition** systems have been used throughout the building. In addition to promoting light penetration into inner office areas these partition can be disassembled and reassembled assisting in faster churn rates when occupant required changes to layouts are required.

- **Automated sunscreen** shading systems at the atria are controlled by the building management system. The shades operate as required to meet the cooling requirements of the building as the sun's location changes automatically providing shading where required.
- **Interior glazed curtain** wall has been used at the interior atria walls to facilitate daylight and views within the building. Manually operable windows are also used at these locations to allow occupants access to atria for air circulation.

- **Raised access flooring** system has been utilized throughout the entire building a requirement resulting from the LEED Gold accreditation requirements. The access floor requires a very different construction sequencing approach and is more complex to coordinate than a convention floor and ceiling plenum system.

C. Changes to work:

1) Exterior Cladding:

▪ There were a number of refinements required to the terracotta cladding system and scope was added to improve the function and performance of the system. Insulation thickness was increased.

2) Finishes of exposed mechanical components:

▪ Exposed mechanical equipment such as radiant heating panels and sprinkler head caps located in major public spaces had been specified to standard manufacturer's colours. When the standard colours were reviewed it was found to be very limited and not a good match to other adjacent materials. An appropriate custom colour was then selected so that these panels and caps would be a better match to other adjacent finishes.

3) Roof Mechanical Equipment Louvre Screen:

▪ It was determined during construction that three rooftop cooling units would function more efficiently than the two originally required. This would also offer the added benefit of redundancy. It was necessary to extend the rooftop screen which conceals the rooftop mechanical equipment from the Civic Square below. At several locations modifications were required to the support steel for roof top mechanical equipment to ensure proper installation and ease of service in the future.

4) Raised Floor Bridging and Mechanical System Coordination:

▪ Low velocity air supply systems requires less energy to operate but larger duct work. Following the review of the mock-up of the compartment unit mechanical rooms it was determined that larger ducts was required to optimize the mechanical system specified. The larger ducts required additional bridging under the raised floor system as they were wider than a standard floor panel specified.

▪ At numerous locations where equipment was located under permanent floor installations, it was important to provide permanent access to these units for future maintenance. Custom floor access panels were designed and constructed to provide easy access at terrazzo and wood floor areas to service the equipment below the floor.

5) Revisions to the door hardware schedule were required on the glazed screens and hollow metal doors to implement the electronic security requirements.

4. Structural

The building structure is innovative and has been developed specifically for the City Hall both in a pure structural sense but also an integral part of other systems including interior finishes, mechanical, and electrical strategies. Much of the concrete structure in the building remains exposed and adds a character of strength and simplicity to the building, but also requires great care and skill in the forming operations and in the placement of the concrete.

- **A highly light reflecting mix** of self consolidating concrete was developed. Major areas of architectural structural concrete are exposed to view. The concrete was developed to be smooth and highly reflective. At these areas, up lighting was used which reflects off of the concrete ceilings resulting in a more glare free work environment.

- **Exposed concrete** at the work loft ceilings takes the place of ceiling finishes in those areas, eliminating the needs for suspended t-bar or painted gypsum wallboard.

- **Custom column capital** shapes were developed in preference to rectilinear 'drop panels' which are typical at conventional concrete column structure not unlike what you would see in a parking garage. Traditionally concrete structure is covered with suspended ceilings. The profiled column capitals lighten the presence of the columns and provide greater visibility within the work lofts.

- **Concrete perimeter columns were eliminated** at end bays. The goal was to eliminate columns in order to improve views and open up the work space floor area. This was achieved by integrating steels columns within the curtain wall mullion system, rendering structural support invisible at these locations. This required precise coordination.

- Large curtain wall (glass walls) areas at atrium areas and at the Council Chamber require structural steel support as the spans are so high. In order to reduce the obstruction of views the steel was integrated into the curtain wall system. This required precise coordination of the steel and glass work particularly at the two and three storey high areas of glazing.

- The cantilevered exposed concrete seating dish of the Council Chamber is a powerful visual element that also minimizes structural support requirements at both the Multi Purpose Room and the Chamber by cantilevering the concrete structure from the level below. This approach allowed for less interrupted circulation within the Multi Purpose Room and at the rear area of the Chamber by eliminating the need for structural columns.

- The only work areas with ceilings are the uppermost floors. At these locations ceilings were necessary to conceal rain water leaders, irrigation piping and exhaust fan ductwork all of which had to penetrate the upper roof structure.

A. Changes to work:

1) Below grade revisions to the structure:

▪ As a result of poor soil condition, removal of more soils than was anticipated and subsurface water conditions there were revisions required to the structure to accommodate these various unanticipated conditions.

2) Connection to future Civic Centre expansion space:

▪ It is intended that the north wing of the building have a below grade connection to the Phase II development of the Civic Centre. During construction a below grade connection provisions was discussed since the future phases would be built much later than anticipated. It was determined that in order to minimize future demolition of the above grade walkway the below grade extension would need to be extended. This was done and it will facilitate future work without causing disruptions to this facility.

3) Council Chamber Concrete:

▪ The cantilevered concrete audience support structure is a very complex. It's an engineering marvel and the centerpiece of the Project. It achieves many benefits of visibility and circulation to the building operations and is a powerful visual element. During the shop drawing phase the engineers determined that modifications to reinforcing and placement of concrete were necessary as an improved factor of safety.

4) Structural Steel Modifications:

▪ At the penthouse level there were many complex conditions along the roof to wall connections. There were more conditions and variables than was reasonably anticipate on all the design details. Specification were revised and clarifications were issued to modify the steel to accommodate the various conditions. This facilitated the proper installation of both roof and wall systems.

5) Landscape Walls:

▪ At the exterior landscaped areas the free standing walls at some areas were not fully detailed in the tender documents as the final elevation were unknown. This work needed to be properly executed and there were additional costs associated with this work.

5. <u>Mechanical Section</u>

The City Hall has a sophisticated mechanical systems that is uniquely integrated with the LEED Gold compliance requirements. The system is beyond the standard requirements for commercial buildings, it is designed for a building with the energy and efficiency aspirations of a building aspiring for LEED Gold certification.

Conventional buildings would generally be configured around a central mechanical room with ductwork distributed from this location through ceilings and air supply delivered at ceiling diffusers. In the case of the new City Hall, a more sophisticated and energy efficient system is used. Multiple mechanical rooms each housing one compartment unit, one per level for each of the three atria. This allows a more refined response to the requirements of each level and utilizes the Atria spaces as the mixing chamber for air return and fresh air introduction into the building. All of the air is delivered through the ductwork within the raised floor system and is supplied through diffusers at the floor level. This so-called displacement heating and ventilation system supplies conditioned air at floor level at low velocity. The air is in turn heated by the presence of occupants and equipment and drawn upward and back into the atria spaces. This distribution system is more complex than that of a conventional building because it deals with distribution from multiple smaller mechanical units. This provides more refined control while consuming less energy to distribute the air.

- **A modular central heating and cooling plant** which optimizes the ability to fine tune the climatic requirements at each of the various areas of the building. Compartment ventilation units are located at each floor of each atrium. A larger HVAC unit in the penthouse provides cooling to the three atria during the hottest summer periods.

- **The atria** in each building function as the mixing chambers for the building ventilation systems. During temperate conditions air conditioning units will be off, with outside air being brought into the atria directly through intake louvers at each atrium. This allows for free cooling at shoulder seasons rather than using air conditioning. This fresh air is then distributed to each floor through the fans at each of the compartment units. This system allows for a higher than normal percentage of fresh air to be supplied to the building occupants.

- **Operable windows** at the perimeter of the building can be opened by building occupants to provide fresh air during favorable exterior weather conditions. The thermostats within the building indicate when exterior conditions are appropriate for the windows to open. For less temperate conditions, exhaust fans will assist with the natural ventilation.

- **Displacement ventilation systems** provide more comfort and distribute air through the under floor plenum and supply air through floor level grilles and which then return through the atria.

- **Floor diffusers** located throughout the work areas can be adjusted by the building occupants to suit their individual specific comfort requirements. These are easily relocated if furniture layouts change.

- **Sprinkler mains and branch lines** are located in raised floor plenums so that only the sprinkler heads are exposed in the architectural concrete ceilings. This innovative installation required extensive coordination with other services and systems.

- **The use of exterior terracotta louvres** for shading, ceramic shading frit patterns on the glazing system and automated motorized blinds in the atria reduces heat gain, allowing smaller sized mechanical units and reducing energy consumption.

- **Heat recovery systems** are used to harvest heat energy from recirculating air and thereby reduce operating costs.

- **Automated shading systems** at the high atria automatically deploy when the automated building management system senses the requirement for solar shading.

- **Operable windows** at the high atria automatically open to facilitate natural building ventilation and assist in venting hot air.

- **Air handling units** required for high level ventilation of the atria also double as smoke control fans for the emergency smoke control system. This avoids the need for separate fans dedicated to the smoke control system.

- **No potable water** is used for irrigation, reducing the burden on municipal supplies. The building is constructed in an area where the water table is high and the site is under a state of constant dewatering. The ground water is suitable for irrigation and as such is harvested and diverted to a cistern tank. The rate of ground water flow in combination with the capacity of the cistern covers all the irrigation needs of the green roofs and on site plant material.

The building is complex in its use and deployment of mechanical systems and in many ways is a prototype. There were numerous conditions which required adjustment during construction to optimize the performance of various systems.

A. Changes to work:

1) Compartment units and duct distribution:

▪ An on site mockup of a typical mechanical room containing the compartment units, ductwork and plenum enclosure was constructed. The design team determined that there was a more efficient way to layout the ducts and plemum than specified in the original design. The configuration was revised in order to achieve the better performance and installation. As there are 13 of these mechanical rooms distributed throughout the building this change affected all of them.

2) Fancoil servicing/access and condensate system:

- Fancoil heating units are distributed along the building perimeter walls under the raised floor. During construction it was determined that greater access for servicing was required. Larger access panels were provided in the permanent terrazzo and wood areas of raised floor.
- Controls to these units were also repositioned to one side of the unit for ease of regular maintenance so that service staff would only have to remove one floor panel.
- In order to simplify access to these units continuous linear floor grilles were revised to intermittent linear floor grilles. In addition small pumps and drain lines were added to ensure efficient drainage.
- There are approximately 211 of these units throughout the building.

3) Main mechanical room layout:

- During the coordination and interference drawing phase of the construction it was determined that a more serviceable layout of the main penthouse mechanical room was necessary. It was determined that one way to achieve the optimal layout of the main equipment was to reconfigure the main pipe runs and the placement of the units. There were also some structural modifications required. This resulted in series of spaces which were more serviceable from a long term maintenance perspective.

4) Sprinklers:

- The complexity of the distribution of the sprinklers in the raised floor required numerous adjustments in order to coordinate pipe positions relative to ductwork and conduit. Unlike ceilings which can be dropped if there is an interference issue the raised floors need to remain level. Because the floor cannot be raised more complex solutions to interference problems are often required.
- Sprinkler at the Multi Purpose Room beneath the Council Chamber were exposed. It was determined that concealed heads would be more appropriate and the necessary revisions were made accommodate this.

5) Photocopy Room Exhaust Ducts:

- There are photocopy rooms in each department. These rooms required ductwork to exhaust heat and any fumes from the photocopiers. The design duct routing ran through the stair shaft and would have to be exposed in the open area of the atrium. During review of the shop drawings, it became evident that an alternate route was required to keep the ductwork concealed. As a result, access to rooftop exhaust fan locations had to be revised to the lower roof areas.

6) Kitchen Exhaust Duct and Mechanical Piping:

- The kitchen equipment for the Café was ordered during construction. It was necessary to then coordinate the requirements for the new equipment with the existing mechanical and electrical infrastructure. Changes were required tot accommodate the requirements of the kitchen equipment. The exhaust ductwork had very strict fire requirements and there was very little space available for the ductwork resulting in some revisions to the existing layout to make the ductwork fit properly.

7) Radiant Heating Ceiling Panels at Council Chamber:

- At the west two storey glazed wall of the council chamber there are ceiling mounted radiant heating panels. They are located together with the dual shade motorized blind system as well as the structural support system for the large two story glazing panels. There was significant work required to revise the radiant panels support system as well as the plumbing in a way that both the motorized blinds and radiant panels could be

easily serviced. This was required for future maintenance. In addition to this work, underfloor heating units were added to ensure adequate heating provisions at the large glazed are at the back of the Council Chamber.

6. Electrical Section

The building electrical system integrally part of the LEED Gold strategy and is integrated with building's mechanical systems. Particular care was required in placement of all lighting, switches and thermostats as many of these devices are located on exposed concrete. Therefore, at the time of the construction of the concrete work great care was needed in positioning these devices. There is significant flexibility to accommodate occupant required changes of power and data systems because of the raised floor system.

- **Daylight sensors** control the lighting system at all perimeter work areas. The sensors detect ambient daylight and dim or shut off unnecessary building lighting automatically when not required.

- **A fully programmable lighting control system** allows the City to fine-tune lighting usage, controls and nightly shut down sequences. Night shut down procedures are contemplated to minimize electrical usage in off-hours.

- **Motion detectors** in offices and meeting rooms which turn off the lights when there are no occupants are present.

- **Indirect lighting** has been used at all work loft areas utilizing highly efficient T-5 fluorescent lamps. Fixtures providing a 70% up 30% down split have been utilized to minimize glare.

- **Modular moveable power centers** located throughout the raised floor system are easily moveable to accommodate changing user requirements provide complete flexibility.

- **A metering system** to monitor and track energy usage and efficiency will provide Building Operations staff with the necessary data to monitor building performance.

- **Uninterrupted Power Supply** (UPS), a dedicated system, is located in critical server rooms and will ensure protection of servers during power failures.

- **Emergency generator** provides emergency power to all critical operational and life safety services within the building.

A. Changes to work:

1) Telecommunications conduit:

▪ In order to accommodate the requirements for satellite broadcasting capabilities of radio and television stations from the Council Chamber a hard conduit pathway was added connecting the council chamber media positions to an external panel feed in the parking lot for satellite trucks.

2) Hot water heaters at kitchenettes:

▪ Water heaters were substituted with lower voltage units at the kitchenettes. Lower voltage units would be easier and safer for City staff to service. The electrical feeds needed to be modified to accommodate this. There are 17 locations.

3) Mechanical Room at Level 100:

▪ In the original design the mechanical and electrical rooms were combined. During construction, it became evident that that the rooms had to be two separate spaces due to the design parameters of the mechanical units. The mechanical rooms was relocated to a space immediately adjacent to the electrical room.

4) Heat tracing and Lighting Revisions:

▪ Within the Civic square there are in ground fixtures. The fixture specified was changed during construction to a more durable fixture for this application. The revised fixture will also be more serviceable than the original fixture which will lead to an extended life. Within the main Atrium along the stone feature wall an overhead display fixture was determined to be more flexible for the changing exhibits that the original fixture specified. This will allow more flexibility to accommodate changing exhibits along the wall space. Power for the heat tracing cables were also required for the changes outlined above for sprinklers.

7. Regulatory Authorities

The City Hall is considered a 4 storey building with primary uses of assembly, office and parking. It is a fully sprinkle building with a standpipe service. The principle distinguishing feature from a Code perspective is that the facility has interconnected floor spaces. There are three atria, one in each of the north, east and south wings of the building. An important safety feature and a Code requirement is the provision of a smoke control system. This provided some challenges for the City Hall has been implemented. Any smoke generated within the building resulting from a fire is exhausted from the building if it enters the atria. The exhaust fans prevent the smoke from entering any of the other floors above as it travels vertically through the atrium space.

The building is a fully accessible facility. Measures have been undertaken to enhance accessibility beyond the current Code requirements. All washrooms have been provided with motorized door operators and all are fully accessible. Washrooms at the ground level exceed the size requirements for accessible washrooms anticipating future changes to the Code. All departmental counters have been provided with accessible service provisions.

Review of the permit submission by the authorities was extremely thorough and recommendations have all been incorporated. Ongoing field review from building and fire authorities has been extremely rigorous. There are many unusual spatial configurations which are difficult to foresee on the drawings which have been identified by the authorities. The design has been revised to accommodate these observations.

A. Changes to work:

1) PRV Valves:

▪ Specialized ‘pressure reducing valves’ form part of the building’s fire pump system. As there is some interpretation regarding the specific requirements for these the final requirements are often an Authority decision that does vary from jurisdiction to jurisdiction. The Vaughan Fire Authorities required that two of these control valves be put in place. An additional valve was added to comply.

2) Smoke Detectors, Pull Stations, Exit Signs:

▪ Final review of exit signs and pulls stations has been ongoing over the closing months of the project. It is not always possible to foresee the full three dimensional visibility of these within the spaces during the design phase of the project. The Authorities have requested that at areas where visibility of exit signs has been restricted by columns or other obstructions that signs be added to ensure complete clarity and visibility for building occupants. These comments have been incorporated into the project design and signs

have been added. At a few minor locations there has been a request to add pull stations. These have been incorporated as well.

- With the building constructed the full complexity of the atrium spaces is now completely clear. There have been some areas where smoke detectors have been identified as required to ensure full and complete coverage of all Atrium perimeter conditions. As with the exit signs it is not always possible to indentify all of the perimeter and edge conditions requiring coverage. The additional detectors ensure enhanced safety by providing the fully required coverage. The additional detectors have been incorporated.

3) Heat Tracing Monitoring:

- The sprinkler system within the parking garage is fully heat traced as the parking garage is not heated. Expending energy to heat the parking garage is not considered LEED compliant. In addition to the heat tracing, and as an added measure of safety, the fire authorities have requested that the tracing be monitored. This will ensure that if there is a failure of the heating system and alarm will register at the building control panel. The trouble source can be tracked and repaired thereby ensuring that there will not be any freezing and failure of the sprinkler system in the parking garage.

4) Fire Assemblies and Ratings:

- Following the permit review numerous areas were identified as requiring rated assemblies. In addition there have been areas identified as being not fully compliance at complex conditions following reviewed in the field. All assemblies have been revised in order to comply with the Code and ensure the required level of safety for the building occupants.

5) Fire Dampers:

- Additional Fire dampers have been identified by the inspectors as being required at numerous locations. These have been added and are now incorporated into the building's mechanical system.
- Additional code requirements have been identified by the authorities at the underground cistern, diesel oil storage tank, diesel fuel distribution within the building and the diesel generator. These have all been implemented and are safety requirements.

Project Administration

The client and Architect agreement between the City and the Architect outlines in details the Architect (KPMB) responsibilities regarding project administration, schedules and cost controls.

In addition, the City retained a Project Manager, who worked closely with the Architects and the City's Professional Advisor, Peter Berton (Ventin Group Architects). The Project Manager worked closely with the Architect to review and monitored all aspect of the project during the design stages, and was supported by the Professional Advisor. The Project Manager and Professional Advisor also supported the Architect, his on site representatives and consultants in maintaining quality control and ensuring that the site work is being performed according to specifications. The Project Manager, resigned in late 2005, however there was a six month transition period (July 2006) to allow his replacement, the City's Architectural Technologist to be brought up to date with the project scope. In addition, the role of the City's Professional advisor was increased in 2006 to include additional on site review and inspections. The overall project management was performed by a "Project Team" led by the Commissioner of Community Services, and included The Architect, The City Professional Advisor, the Architectural Technologist, and the Risk Consultant, (Pearson Consulting).

There were regular bi-weekly construction site meetings and regular reviews by the design team of the Architect and his consultants, the Contractor and sub-trades, the Professional Advisor, the Project Manager, and other appropriate City staff. Construction Site Meetings were held every two weeks at the Site trailer. The first meeting was held in February 2007 at the commencement of the Project and has continued on a two week schedule, until January of 2010, when it was revised to weekly meetings. Maystar was responsible for chairing the Site Meetings in accordance with their contract. Present at the Site Meetings were representatives from Maystar including their Project Manager and Site Superintendent, the City's Project Manager, Architect, Structural Engineer, Mechanical Engineer, Electrical Engineer and the City's Professional Advisor. Typically also in attendance were representatives from the major sub-trades including concrete, mechanical, electrical, sprinkler, ductwork and curtain wall. Depending on the status of the work at hand other trades, or other City staff were invited to attend. Project construction issues were reviewed and ongoing outstanding issues tracked until they are resolved. Following the Site Meeting any issues which required further discussion were reviewed by the Project Team, which usually met in the afternoons of the scheduled site meetings. Smaller scheduled meetings involving representatives from the City, Architect and Contractor were also held as needed based on specified issues.

The Project Team met bi-weekly to resolve and discuss outstanding issues. From the outset, the Project Team held bi-weekly meetings to monitor progress, resolve outstanding site issues and review evolving user needs. These meetings also dealt with coordination of on-going construction activities; e.g. cash allowance items such as millwork package, system furniture, kitchen equipment. Contractor queries requiring City responses, or unresolve site issues were discussed and resolved in these meetings. Timely turnover of submittals and responses to Contractor clarifications was a priority and a challenge for the Architect and his design team.

In addition to site reviews, the Architect and his consultants performed careful scrutiny of any requests for additional costs by the Contractor as construction progressed. All additional costs as a result of changes to scope was extensively reviewed by the team of the Architect, Professional Advisor, the Risk Consultant and the appropriate consultants before being approved and presented to the City for review and approval by the Project Team. The review process is discussed in more detail later in this report.

Thorough Review of Payments:

The contractor in accordance to GC 5.1 of CCDC, Document 2, submitted application for payment monthly as work progresses. The Application for payment is dated the last day of the agreed monthly payment period. The amount claim is the value of work performed and products delivered to the site by the claim date. The application must be supported by the related backup information. The Architect may request additional information or further evidence as he deems necessary to evaluate the value of work claim in the application. In addition, the Architect will also use his observations and notes from site inspections/evaluations in his review of the Contractor's application for payment. The following is step by step process of the evaluation and review of Payment applications.

1. Maystar submits monthly Application for Payment for works completed with all the necessary supporting documentations.

2. KPMB reviews progress on site, including inspection reports for materials and installation work being applied for in the monthly payment application. In addition, Structural, Mechanical, Electrical, Civil and Landscape Consultants are conducting their parallel review for items within their disciplines.
   For example: If work has not been completed, but material only is being billed in the payment application, the contractor has to provide the location of the materials on site including invoices to establish Value and delivery. The Architect and his consultants perform a thorough review of the quantity of material on site in order to certify the payment.

3. KPMB submits to Maystar a written assessment of each item of the draw either approving the amount requested or revising the amount requested. KPMB or their Consultants comments accompany this review especially if there is a revision. The Project Team is copied on this correspondence and is updated on the valuation of claimed work during the review process.

4. If there is a revision, or discrepancy resulting from the review, Maystar reviews the comments provided and responds. Another review of the comments provided by Maystar is performed. This review process will go on until a final value is agreed based on the work completed and/or materials validated. Maystar revises their AFP to conform with agreed values.

7. KPMB will only issues Certificate for Payment to the City when they are fully satisfied that the payment application has been validated.

6. The Project Team reviews the payment and if there are no further questions and the team is satisfied, the payment is processed according to the City's payment procedures.

The following procedure was followed when quotations were submitted by Maystar for changes. Change orders were requested by the Architect (KPMB) in the form Supplemental Instruction (SI's), Contemplated Change Orders (CCO's), Change Directives (CD's). Once approved, and the costs validated, they are issued as Change Orders to Maystar.

1. Maystar submits quotation for changes to work.

2. KPMB initially review quotes for SI's and assesses whether there has in fact been a change to scope. If a change in scope could not be demonstrated, the quote is not approved. CCO's and CD's are by their use, requests for changes.

3. KPMB and their cost consultants reviews the quotes to ensure that there is sufficient breakdown of material and labour associated with the change in order to properly evaluate the costs. Upon agreement of adequacy of the breakdown and back up, the quantities of materials and labour are assessed for the proposed change. If the review by the Architect and their Cost Consultant validates the costs, a Change Order is issued.
If there is no agreement on the costs, then correspondence is submitted to Maystar noting items which are in question and outlining the reasons for rejection.

4. For structural, mechanical, electrical, civil and landscape work the respective consultants conduct the same review in consultation with the Architect and their Cost Consultant. If there is not agreement of costs, correspondence is submitted to Maystar indicating the items in question and the reasons.

5. The Project Team and the appropriate consultants are also copied on these correspondences and are updated on the issues regarding valuation of the quotes.

6. A review of the comments provided by KPMB is performed by Maystar and a revised value is submitted. For more complex changes, or where both sides cannot agree, a meeting is held with Maystar and the associated trade, along with the Architect and his consultants to review the issues. Once agreement is reached, Maystar revises their quote to conform with agreed values. If agreement is not reached, the matter is referred to the Project Team. The Project Team consults with the quantity surveyor to verify pricing. The validated pricing is sent back to the contractor.

7. KPMB issues an executed Change Order for the work to the City once there is agreement on the pricing. The City Project Team reviews the change order, and if there are any questions, it is discussed with the architect. Once agreement is reached, the City

executes the Change Order and it is then issued to Maystar for their final execution. If agreement is not reached, comments are provided and the process reverts back to step #6.

Scope of Work Transferred to the General Contract:

During the project planning, the City developed a list of anticipated "soft" costs; that is, a list of items that are not typically part of the "hard" building construction costs that are affixed to a building. Soft costs include things such as moving expenses, fees, furniture and so on.

In the soft costs budget, the City carried several line items for security systems, AV systems, telephone systems and other technology. At the time of tender, the specifications for these systems were not fully developed so they were kept as a separate line item in the soft cost budget. Such systems undergo rapid change over the course of construction so the final details were resolved over the past year or so. Please refer to the section on Technology in this report.

Once the design and specifications were completed, these items were transferred to the General Contractor's scope for the following reasons:

1. From a construction safety point of view and under the Ministry of Labor regulations, there can only be one constructor on site at a time and he is responsible for the safety of the entire site. Therefore, having another contractor on site would complicate lines of responsibility and violate the MOL regulations. In order to comply with the regulations, the trades outside of the original scope became subcontractors to the General Contractor.

2. When the technology is added to the General Contractor's scope of work, he is responsible for all coordination, which is extensive on a project of this size and complexity. The General Contractor assumes the responsibility to manage the integration of the technology into the construction.

3. This responsibility means that he must deliver the turn key package complete and in working order on the day of occupancy. Therefore, he is responsible for delays or any damage or components that may have gone missing during construction. Without this assigning of responsibility, the installation would be delayed, as we could not install prior to the building being turned over to the City. In addition, the City would have little recourse to claim for missing or damaged components.

4. The General Contractor also includes the warranties to these systems in his overall building warranty, and would be responsible for any coordination of warranty work for these items.

5. It is a simpler and more accountable process by opting for a single point of contact (the General Contractor) to take responsibility for these systems.

Project Budget

On November 8, 2004 Council approved the New City Hall Phase 1 project budget at $89,228,344 ($71,382,675 construction costs plus 25% or $17,845,669 soft costs). The Phase 1 budget was based on a September 2005 issuance of the construction tender and the schematic design which provided a floor area of 276,689 sq ft (± 25,704 sq m). Soft costs include architectural and professional fees, furniture and fittings, cabling and informational technology equipment, moving expenses and contingencies.

On June 27, 2005, Council approved the project budget increase in the amount of $1,650,000 for site preparation works and upgrading to LEED Gold to support energy efficiency and environmental sustainability. At the same meeting, Council also approved that the City's

Administration fee be added to the budget and the proceeds from the City's Administration Fee be assigned to the City Hall Reserve Fund and that all other City fees be waived.

On December 18, 2006, the tender for construction of the New City Hall was awarded to the lowest compliant bidder, Maystar General Contractors Inc. in the amount of $84,300,000. The project budget was increased from $93.6M to $107M.

The following table provides a summary of approvals.

	Nov 8 2004	June 27 2005	Dec 18 2006	Total
Construction	$71,382,675	0	$12,917,325	$84,300,000
Soft Costs	$17,845,669	0	0	$17,845,669
Site Work	0	$1,650,000	0	$1,650,000
Sub -Total	$89,228,344	$1,650,000	$12,917,325	$103,795,669
City Admin		$2,726,350	$387,520	$3,113,870
Total	$89,228,344	$4,376,350	$13,304,845	$106,909,539
			Rounded	$107,000,000

Soft costs are typically estimated between 20%-35% of construction. The soft cost budget was set at 25% of construction costs in 2004, however, as mentioned previously, due to an oversight in the budget calculations, the subsequent increases to the construction costs in June 27, 2005 and December 18, 2006 did not include a corresponding increase of $3,641,831 to the soft cost budget. The Industry standard for contingencies is usually estimated at 10%-15% of construction cost.

Project Expenditure

The following chart illustrates the forecasted final cost of the Maystar Contract:

Forecast of Final Maystar Contract (excluding HST)			
Original Contract Award	$84,300,000		
Net Authorized Change Order (P47)	$16,015,596	*	
	$100,315,596		
Less: Reallocation of previously approved capital IT costs	($1,195,788)		
Plus: Maystar Change Orders (in the review process)	$4,300,000	*	
Forecasted Final Maystar Contract			$103,419,808

*Amounts subject to further review.

The following summarizes the actual and committed to-date, and forecasted final expenditures to the City Hall project:

Actual Expenditures as at February 7, 2011			
Maystar Contract (PC 46)		$94,871,348	
Maystar Contract (HST 1.76% as of July 1/10)		$296,963	
Other (Consulting, F&E, etc.)		$11,539,736	
City Administration 3%		$3,201,241	$109,909,288
Add: Outstanding Commitments / Forecasts Not Recorded			
Maystar (Inc PC 47)	$5,444,240		
Maystar Change Orders (in the review process)	$4,300,000		
Other (Consulting, F&E, etc.)	$3,550,957		
Moving Expenses (Estimated)	$40,000	$13,335,197	
Less: Reallocation of previously approved capital IT costs		($1,195,788)	
		$12,139,409	
Plus: HST @ 1.76%		$213,653	
Plus: City Admin @ 3% Adjustment		$370,592	$12,723,654
Total Actual / Commitment / Forecasted			$122,632,942
Approved Budget			$107,000,000
Forecasted Shortfall			$15,632,942

The following provides an analysis of the project budget to actual/commitment:

	Budget Dec 18, 2006	**Actual/Committed/ & Final Forecasted Feb. 7, 2011**
Construction Costs	$84,300,000	$100,080,299
Soft Costs/Site Work	$17,845,669	$18,980,810
Site Clearing etc.	1,650,000	
City Administration	$3,113,870	$3,571,833
	$106,909,539	
Rounded	$107,000,000	$122,632,942

Project Financing

Council at its meeting of December 18, 2006 approved the following funding plan; based on the contract award to Maystar General Contractors Inc. The funding source for the $4M in additional financing was not determined at the time, but is addressed in the Revised Funding.

	Budget Dec 18, 2006	Revised Funding
Funds on Hand – City Hall Reserve	$20.6M	$20.6M
Net Proceeds from Surplus Land Sales	$28.1M	$30.6M
Long Term Debentures	$11.0M	$12.5M
Proceeds Hydro Vaughan Distribution	$27.5M	$27.5M
Hydro Vaughan Holdings Inc.	$9.8M	$9.8M
Annual Debt Servicing ($1M x 6 years)	$6.0M	$6.0M
Additional Financing (TBD) *	$4.0M	$0.0M
	$107.0M	$107.0M

*Funding of the additional $4 million included in the original funding plan has been achieved as follows:

- $1.5 million in additional long-term debentures that does not impact the taxpayer as low interest rates for debentures allowed a $1.5 million increase in debt without increasing the budgeted annual debt repayment plan.
- $2.5 million has been funded from additional net proceeds derived from surplus land sales. As noted below, Council resolved that the funds from the sale of any surplus City land be designated for the New City Hall.

The forecasted City Hall project budget to actual shortfall in the amount of $15.6M is proposed to be funded as follows:

	Revised Funding	Original Sources	New Source	Total Revised Funding
City Hall Reserve	$20.6M	$0.6M		$21.2M
Net Proceeds from Surplus Land Sale	$30.6M	$4.6M		$35.2M
Long Term Debentures	$12.5M	$0.0M		$12.5M
Hydro Vaughan Distribution Dividend	$27.5M	$0.0M		$27.5M
Hydro Vaughan Holdings Inc.	$9.8M	$0.0M		$9.8M
Annual Debt Servicing	$6.0M	$3.7M		$9.7M
Other Receivables	$0.0M	$0.2M		$0.2M
AMO Gas Tax			$6.5M	$6.5M
	$107.0M	$9.1M	$6.5M	$122.6M

Net Proceeds from Surplus Land Sale

In 2002 Council resolved that the funds from the sale of any surplus City land be designated for the New City Hall. A number of parcels have been sold by public tender over the last 8 years and there are a few remaining parcels to be sold. These parcels have not been sold to date for various reasons, such as the 2008 economic downturn, awaiting servicing and/or rezoning and review of development potential. Staff monitor market trends and estimated Net Proceeds from sales is included above. Notable parcels include lands at the south west corner of Keele Street and Teston Road; a parcel on the north side of Ashbridge Circle, west of Highway 27 and just

north of Highway 7; a parcel on the south side of Langstaff Road, west of Highway 27; and the now closed Mullen Drive stub south of Clark Avenue and west of Bathurst Street.

Annual Debt Servicing

The original funding plan allocated $1M annually to the City Hall, and as a result of timing, an additional $3.7M has accumulated and is available for funding.

AMO Gas Tax Grant

On November 8, 2004 Council directed that staff pursue opportunities for Federal/Provincial grants for the new City Hall. The City Hall has been constructed to LEED Gold standards. Staff requested our architect to determine what construction costs could be attributable to LEED Gold. Their recommendation that the premium for this building would be at approximately 9% of construction. Based on the original bid value of $84,300,000, the LEED premium at approximately $7.6M. AMO has confirmed that the City Hall built to LEED standards is eligible for Gas Tax Funding and the Architect has provided the supporting documentation. The AMO Gas Tax Funding to be received by the City in 2011 will total $7,347,518. Allocating $6.5M of this grant to fund the estimated funding shortfall is well within the LEED cost premium estimated by the City's architect and the available AMO Gas Tax 2011 grant.

Revised Dates for Occupancy:

The original date scheduled for occupancy was projected to be November 2009, in the tender documents. This date was revised in late 2007, to reflect a revised occupancy date of March 2010. The main reasons for this revision was that the project although awarded in late December 2006, site works did not start until March 2007. In addition, the project experienced set backs due to a labor strike, and soils and de-watering issues. In June 2010, the scheduled was revised again by the contractor indicating an occupancy date of date in October, 2010. The main reasons for this revision was the installation of the Curtain wall system. There were several complications with the fabrication and installation of the curtain wall system. As a result, the building could not get closed in and achieve water tightness, to allow for the interior finishes to get started in several areas. The schedule was once again revised in November 2010, with an occupancy date of February 9, 2011. The main reasons for this revision were issues with the interior atrium railings, and fire code issues that were identified during inspections by the authorities in November 2010. Some of the issues related to sprinkler systems, exits regulations and fire separations. The building have achieved occupancy on February 10, 2011, and staff have started moving into the new building.

Relationship to Vaughan Vision 2020/Strategic Plan

This project is consistent with Vaughan Vision 2020 in the areas of:

- Pursue Excellence in Service Delivery
- Value and Encourage a Highly Motivated Workforce

The new City Hall is a state-of-the-art green building that provides a healthy working environment for municipal employees. Employees currently gathered in satellite locations will be brought together in the new building. The office spaces are open and full of natural light. The new City Hall will allow municipal services to be centralized, while creating an open and transparent gathering space for the residents.

Vaughan City Hall is designed to integrate the maximum number of sustainable strategies. The design incorporates a high performance building envelope, passive solar shading strategies, day lighting, a modular central heating and cooling plant, low pressure air delivery systems, waste heat recovery as well as natural ventilation system. Operable windows on the perimeter allow for natural ventilation controllable by the building occupants.

The landscape concept re-naturalizes portions of the original ecology of the site, and ensures the survival of the local habitat. By placing parking underground, the design maximizes the use of land for public green spaces and gardens. Light colored paving and green roof landscaping will reduce the heat island effect. Green roofs will also aid in on-site filtration of storm water for reuse in site irrigation. The building dewatering system diverts available groundwater to a cistern for the irrigation of green roofs as well as site plant material.

Also, in keeping with the City's principles of accessibility and transparency, the technology in the new City Hall will be used to enable public access to information and the decision-making process of Council. The building also meets and exceeds barrier free requirements as it has incorporated higher standards that will be introduced in the very near future.

The building also includes a chapel to meet the growing demand for non-denominational facilities. The additions of a Chapel and Daycare Facilities would create a potential revenue source, as well as a service to the citizens of Vaughan.

The new City Hall reflects the characteristics that defines Vaughan, namely innovation, transparency, environmental stewardship and service excellence.

Regional Implications

None.

Conclusion

Vaughan's new City Hall is a cornerstone on a new civic landscape, one that incorporates sustainability but also one that is focused on the balance and support of public service and public life. The contemporary design speaks to the traditions of civic architecture and public space and initiates the transformation of the site into a centre for civic engagement, a civic centre that is greater than the sum its parts.

The design is open and highly visible, offering transparency and accessibility for municipal government with over 16,000 square feet of public space, more than triple that previously available. State-of-the-art functionality throughout the building and in the vast array of public meeting spaces facilitates public consultation and engagement, which the members of the public can access for meetings and events. The philosophical underpinnings of the design speak to the core of contemporary democracy. The making of places for community gathering at Vaughan's civic centre extends far beyond the conducting of municipal business and administration. The new City Hall and square aspire to cultivate and nurture a place of profound civic engagement in every aspect of the life of residents and a focal point for community celebration of special events, all within a civil society.

The new City Hall provides a state-of-the-art LEEDs building ensuring a healthy workplace environment for municipal employees and the public.

The building reflects openness and transparency in all aspects of municipal endeavour, while designed to maximize environmentally sustainable strategies. The office space is highly flexible, with raised floor systems, demountable partitions and flexible work stations that can easily adapt to change. The overall design incorporates a high performance building envelope, passive solar shading strategies, day lighting, a modular central heating and cooling plant, low pressure air delivery systems, waste heat recovery as well as natural ventilation systems. Operable windows on the perimeter allow for natural ventilation controllable by the occupants.

The building will provide a fresh new environment for everyone. The new City Hall is a leading example of the City's commitment to environmental stewardship. Its efficient design and layout will make the building easier for residents to get information about their community, access City services and staff. This vision for this project has been successfully achieved without

any taxation impacts. Staff have started moving into the building on February 10, 2011, without any disruption to services providing a seamless transition into the new building.

Attachments

None.

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Respectfully submitted,

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Commissioner of Community Services