EVALUATION OF 3 DEVELOPMENT SCENARIOS

THE FORSYTH BUILDING
31 YOUNG STREET, KITCHENER
Project No.: 2005-0141-10

May 17, 2005 (REV)

The Forsyth Building, 31 Young Street, Kitchener

Evaluation of 3 Development Scenarios

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EXECUTIVE SUMMARY

This report analyzes the existing 78,000 sq.ft. facility at 31 Young Street in Kitchener. It reviews the development potential on site and identifies order of magnitude costs for that potential development.

We have conducted a visual analysis of the building's condition, as well as a structural analysis of the structures for each of the component parts of the development. With that analysis we prepared an outline of upgrade requirements.

The report reviews the following development scenarios:

SCENARIO 1

1. Upgrade the Existing Structure

   1a. Our analysis shows that the structure is generally capable of supporting the loads contemplated for either office or residential use.

   1b. Parking cannot be accommodated beneath the existing building if it is to remain in place.

   1c. Our building condition assessment concludes that the building requires significant expenditure to repair deterioration, and prepare the building for either residential or office use.

   1d. The cost for the upgrade is in the order of magnitude of $14 million (residence) - $17 million (office), including the development of a parking facility on another site.

SCENARIO 2

2. Conserve Selected Portions of the Building

   2a. Phases 1 and 5 would be retained for their heritage value.

   2b. Parking is difficult to accommodate – a total of 30 spaces per level can be accomplished.

   2c. The cost for this scenario is in the order of magnitude of $19.5 million (residence) - $22.5 million (office).

SCENARIO 3

3. Demolish Building, Replace with New

The cost for replacement is in the order of magnitude of $18.6 million (residence) to $21 million(office).

A chart of the costs for each scenario is contained at the end of the report.

We have examined the possibility of increasing the density of development on the site for each of the 3 scenarios, and conclude that both options 2 and 3 have potential for increased density.

We have discussed the implications for the heritage designation related to the 3 scenarios with the City's Heritage Planner, and report on that discussion.

1.0 BACKGROUND

The Walter Fedy Partnership has been retained by Lesley MacDonald, City Solicitor, on behalf of City of Kitchener to provide analysis and cost estimates of three options for redevelopment of the existing heritage buildings known as the Forsyth Factory, located at 31 Young Street, Kitchener.

1.1 Background Reports

A number of reports have been previously prepared concerning this building, and have formed the basis for this study.

- Forsyth Factory Measured Drawings, 1993 – David Parrish, Architect
- Building Condition Assessment, October 2001 – Sze Straka Engineers
- Sze Straka letter to City of Kitchener, April 30, 2002
- City of Kitchener By-law 99-222 designating part of 31 Young Street
- Heritage Property Report, Sept. 1999 – City of Kitchener
- Feasibility Analysis Building Conditions, June 2002 – Circa Development
- Geotechnical Investigation of Centre Block Project, Feb. 2004 – Naylor Engineering
- Construction Cost Estimate Redevelopment Options Kitchener Centre Block, Feb. 2004 – Helyar

1.2 Objectives

To produce comparative cost analysis for a range of development scenarios, in order to enable the City to make objective decisions as to the future of the site.

1.3 Methodology

We have configured the scenarios to be as comparable as possible. Each scenario has 78,000 sq.ft usable floor area, and each scenario has either an allowance for construction of a parking facility on another site, or construction of underground parking, depending on the scenario.

Our methodology is based on visual assessment followed by calculations for structural analysis and industry standard construction costs for the cost-estimating portion.

The scenarios described graphically are block models only; intended as visual aids to understanding the configuration for each scenario.

1.4 General Property Description

The site area of the property known was the Forsyth Factory is approximately 40,000 sq.ft. The buildings cover the majority of the site, with the only vacant area being in front of the house, at the corner of Duke and Young Streets.

The factory was built in several phases, shown on diagram 1. “Phase 3” is missing since it was demolished.

Existing Building diagram

2.0 STRUCTURAL DESCRIPTION PHASES 1-5 & HOUSE

2.1 Building Structural Systems

As noted previously in this report, the Forsyth facility was constructed in several phases over thirty to forty years in the early 1900's. Each portion of the building, while similar in some respects, does have differences in how each was built. Each building system is described in the following paragraphs.

The original building (Phase 1) is a three-storey timber and load bearing brick masonry structure. Between the long sidewalls, two lines of wood columns and timbers support the roof and floor framing. The roof consists of 8x4 wood purlins at 4-foot centers supporting 2x6 tongue and groove decking. The purlins span from the long sidewalls across the interior wood beams, which are set at different elevations to slope the roof to an interior valley. The intermediate floors are framed with 2x12 joists at 12" centers supporting 1" board sub-flooring. For unknown reasons, some joists are missing at regular intervals resulting in deck spans up to 24". These joists span as per the roof purlins above from the exterior wall across interior timber beam and column lines to the opposite brick wall. The wood columns extend down to the underside of the ground floor framing at which point the remaining distance to the foundation is supported with brick piers.

The first addition, noted as Phase 2, is also a three-storey timber and load bearing masonry structure; however, in this phase, the timber beams run in the short direction across the building. The construction of all three floors and the roof is the same, that being a floor deck of 2x4 lumber laminated on edge and spanning from one beam/column line to the next for the length of the building. As for Phase 1, the roof is pitched for drainage, this time by sloping the wood beams supporting the laminated roof deck, and the wood columns terminate on brick piers just below the ground floor framing.

Phase 3, built to the east side of Phase 2, has been demolished and is therefore not included in this assessment.

Phase 4, as illustrated on the facility diagrams, was actually built in two or three stages. Removal of finishes in this phase was limited to a few areas; therefore, the representative measuring of framing members was restricted to a few locations. As more interior is removed, a clearer picture of the history of this phase would be exposed for interpretation and assessment. Our conclusions for this area are based on less information than was available for the other phases examined; therefore, adjustments and exceptions should be expected in the load data presented, especially since this building has several localized unique conditions.

The majority of this phase was built in the first stage as a single storey building (with basement) filling in the space north of Phase 1 and west of Phase 2. The elevation along Young Street was built as a three-storey building, however, this only extended back for one bay about 32 feet wide. The exterior walls of this addition are load bearing brick masonry similar to earlier phases; however, the interior support lines are changed from the timber components previously used to steel columns and beams.

The east wall of the three-storey bay along Young Street (rear wall of the first bay) also appears to be load-bearing masonry but is supported on steel girders at the second floor level with steel columns extending from the second floor level down to the foundations. This arrangement gave open space on the basement and ground floor level beneath the exterior brick load-bearing wall above.

Subsequent to this first stage, the second and third floors were extended east about 28 feet, which corresponds to two bays on the ground floor, but was framed as a single span on the second and third floor. (We are unsure whether the additional 14 foot bay on the second and third floors of Phase 4 was built at this time, or was a third stage in this construction.) When the floors were extended, the east wall of the original three-storey bay along Young Street, mentioned above, was taken down from the roof to the third floor. This wall still remains on the second floor level and supports the third floor and roof above.

While the framing for this phase is more convoluted than the previous buildings, in general is consists of 1" board tongue and groove sub-flooring on wood joists at 16" centers supported on steel beams. The beams either bear on the brick masonry exterior walls or are supported on steel columns at their interior ends. While there is variation and exceptions to this summary description, they are not examined for purpose of our study or the level of information presented. A closer analysis of the phase would be warranted once interiors are removed and all structural components are exposed.

The last addition, Phase 5, is a three-storey steel framed building with a partial fourth floor and walkout to the roof, and a partial basement for the south two bays. Steel columns rise from the foundations to the roof supporting steel girders into which steel floor purlins frame. The floor deck, consisting of 2x4 lumber, laminated on edge as is found in Phase 2, spans the distance between the steel purlins for all floors as well as the roof. On the ground floor, the area over the basement was designed for higher loads since the floor purlins are spaced more closely together in this area than for the remainder of the building. While the exterior walls are still of brick construction (with some exterior pre-cast concrete elements), this masonry is only infilling the steel frame within the walls and does not support the floor framing.

2.2 Structural Condition Inspection

General

The objectives of this study required an assessment of the existing load capacities of the various areas and compare the results against the requirements of either a residential or commercial use. To this end, representative measurements of the various structural systems found within the facility were taken and load capacities for the various structural system components were calculated.

For this analysis, an allowable stress design methodology was employed, this being the approach that would have been used in the original design. The analysis was based on the assumption that the various members of the basic structural systems are in serviceable condition with respect to the relevant design standard, and that for the few members that are not, repairs would be made during the renovation work to rectify deficiencies.

Also for this analysis, allowable stresses appropriate for the timeframe that the construction occurred were used. In general, the older steel framing had lower allowable stresses that current steel and the allowable stresses for the timber framing is somewhat greater than for wood available today. While we believe the wood timbers and joists to be Douglas Fir, since we have not determined the grade of wood, we have calculated the load for both "Construction" grade and "Select Structural" grade material. The actual allowable stresses used in the analysis are noted on the results summary table appended to this report.

The current Ontario Building Code, which would be the standard for the design of any proposed renovations, requires minimum live load capacities for commercial and residential construction. Subsection 4.1.6 lists these minimum load capacities as follows:

- For office use:
  - First floor – 100 psf (4.8 kPa)
  - Floors above the first floor – 50 psf (2.4 kPa)
  - Corridors, exits and stairs – 100 psf (4.8 kPa)

- For Residential use (as multi unit facility):
  - Sleeping and living quarters - 40 psf (1.9 kPa)
  - Corridors, exits and stairs – 100 psf (4.8 kPa)
  - Storage rooms (lockers, etc.) - 100 psf (4.8 kPa)

The load capacity for the roof would be the same for either option with a basic roof snow load for Kitchener of 39 psf (1.84 kPa). Any increased roof loads, due to snow drifting or mechanical equipment for example, would need to be assessed once the schematic design for any renovations starts to take shape.

2.3 Structural Capacities of Framing Systems

The various capacities noted in the Table S1 are calculated based on site measured dimensions, calculated section properties, and the allowable stresses noted on the table. The capacities are the total loads to which the various components should be subjected and include both dead loads (such as self weight) and live loads (such as occupancy loads). Based on these total load capacities, and the required live load capacities for the intended end use, the designers will determine the reserve capacity available for dead loads such as structure self weight, building services, partitions and finishes.

TABLE S1 - FORSYTH BUILDING STRUCTURAL CAPACITY
ALLOWABLE LOADS IN PSF
Structural Component

Building #	Framing Floor	Deck	Joists / Beams	Girders	Columns	Governing Load
1	Roof	264	40 (50)	40 (50)	295	40 (50)
	3rd	225	75 (95)	72 (91)	285	72 (91)
	2nd	225	75 (95)	72 (91)	140	72 (91)
	1st				Pier	-
2	Roof	162	102 (129)	N/A	336	102 (129)
	3rd	162	129 (164)	N/A	509	129 (164)
	2nd	162	129 (164)	N/A	255	129 (164)
	1st	162		N/A	Pier	-
4	High Roof	508	68 (86)	Hidden	120	
	3rd	254	82 (104)	59	205	59
	Low Roof	254	106 (134)	58	101	58
	2nd	254	104 (131)	129	105	104 (105)
	1st	-	121 (154)	129	Various	
5	Roof	288	184	184	246	184
	4th	288	184	184	318	184
	3rd	288	184	184	408	184
	2nd	288	184	184	204	184
	1st	512	245	-		-

Notes: *Load analysis for 'Standard Grade' decking, 'Construction Grade' timber, and 33 ksi yield steel.*
Allowable load capacities for 'Select Structural Grade' timber shown in brackets.
For Building 4, unknown conditions are expected to cause noted values to vary.

Using the site measurements from steel components in this building, historical reference books are searched in an attempt to identify each member considered. While close matches are usually achieved, there is often a selection of possibilities from which to choose. Depending on which section if selected for each member, the calculated capacity will vary. As such, it is likely that each member considered is not exactly matched to the section selected from the reference material and that the calculated load capacity will vary somewhat from the actual value. For this study, instead of selecting the lightest section within the range of possibilities, as is often done to be conservative and safe, we have made ‘best matches’ from the available data to provide the most representative information of actual conditions.

For this study, variations from the general structural system have been ignored to give an assessment of the general case instead of focusing down to, and providing results based on, non-typical conditions. In the four phases of the Forsyth building; however, the degree of uniformity for each phase varies. Focusing on the general case fits well for three of the phases (1, 2, and 5), but the fourth phase has such variation within its construction that a general structural system is difficult to establish. As such, results for the fourth phase are not uniformly applicable throughout the phase and should be viewed as trends more than as a rule.

Although the basic structure of the Forsyth facility is generally in good condition, during the course of the assessment, a few issues with the building's structure were noted. The impact that these issues will have on any re-use plan will depend on the extent of the renovation work proposed. Issues noted to date include the following:

- The problem with the east exterior wall of Phase 2 being pushed out by water swollen floor decking has been previously documented and partially addressed. Our concern with the general safety of that portion of the building due to an apparent lack of attention to the remedial program, initiated by other consultants, was noted in a separate letter to the City. Repairs to roof water drainage piping inside the building is also needed to prevent continued saturation of the wood structure.
- Not noted in previous reports was any documentation of the broken floor timber in the northeast corner of the ground floor of Phase 2. Repair of this timber will be a minor component of a renovation plan.
- Water leaking through the roof membrane on Phase 1 has caused some deterioration of the roof decking and purlins along the line of the valley.
- The low roof area of Phase 4 would not have been designed for snow accumulations specified by the current building code. If renovation plans include retaining this roof area, much of the current framing will need to be upgraded or replaced. Currently, this roof area is under standing water that is leaking into the floor areas below. The drainage for this area needs to be addressed to remove the water.

<u>Vertical Expansion Opportunities</u>

Two areas have been identified where the addition of space within the existing footprint could be economically feasible. Should either or both options warrant consideration, additional investigation and costing is recommended to develop them further.

When buildings that have been designed for higher live load capacities, such as multi-storey warehouses, are changed to a lighter loading use, such as office, excess load capacity in the foundations and structure can sometimes be utilized by adding building height. Building 5 is a structure that is a likely candidate for a vertical addition; however, some localized reinforcing of exterior columns may be required.

The other feasible opportunity is to reconstruct the existing inner courtyard from a single storey to three or more. It is suggested that for this option, the existing steel structure in this area be demolished and new infill framing constructed to suit the building height desired. The rear bay or two of Building 4, which was extended previously over the roof of the courtyard area, could also be included in this redevelopment. A new structure in this area would enable changing column spacing to a more functional distance for the intended use.

2.4 Parking

The amount of parking required for the site will depend on the type of use intended. It was requested that the concept of creating parking space below the existing facility be explored. Having done so, it is our opinion that creating this space is not economically feasible.

Both Buildings 1 and 2 are founded on closely spaced brick piers that leave little room for drive aisles or parking. Headroom on this level is also a less than required for clearance to lights and sprinklers that would be located below the 2 hour fire separation that would need to be provided. Building 4 has slightly more open space at the west end; however, under the courtyard is another forest of small steel columns. Most of the basement level for Building 5 is currently unexcavated and not available. To achieve useful space would require extending the building below the existing foundations.

Issues that complicate construction of space below the current foundations include underpinning of the exterior load bearing brick masonry walls, and either providing transfer beams to reduce the number of interior columns, or providing piers at close spacing to match the column layout above. We cannot recommend that this work be considered due to the anticipated expense and degree of risk involved.

3.0 BUILDING CONDITION

3.1 Envelope

The building has been visually assessed for existing condition on 2 days during April 2005. The structure has been assessed for structural adequacy and this is contained in section 2. Apart from structural considerations, the general condition of the building envelope and interior surfaces is poor, largely due to the lack of protection from water & temperature extremes for the building fabric during the past several years.

Roof coverings are largely ineffective, and a considerable amount of rainwater has entered and continues to enter the building through the roof deck. Phases 1 and 2 are the worst affected. This has caused deterioration of the roof deck, roof structure, floor finishes of the floors below, and collection of water in the basement. The low roof surrounded by buildings, although it has not yet failed, is carrying a considerable load of water. It is likely that the stormwater drains are not functioning.

Exterior masonry is in reasonable condition. The exterior walls are generally loadbearing brick with lath and plaster interior finish. Phase 5 exterior walls are steel framed with non-load-bearing infill panels, and the south wall of Phase 4 is also non-load bearing on the upper level.

Some window openings have been boarded for security purposes. However, many windows are broken and missing.

3.2 Interior

There is no heating system in the building. This has caused the freeze thaw cycle to affect the interior of the building. Spalling of plaster, release of paint from various surfaces, and rotten wood elements are the result of these factors. One interior stair in Phase 1 (stair 4) has some missing treads.

The dramatic lifting of the hardwood floors in certain areas of the building is due to swelling of the wood due to continued presence of water in the building fabric. The hardwood which has buckled is a separate layer from the wood floor deck. The buckling has not necessarily affected the structural wood deck, except in so far as it creates conditions conducive to rot. Some wood floor deck pieces are rotten & will have to be replaced. The rot will spread as long as the building condition is not stabilized.

It is assumed that the paint used in the building contains lead. Lead is a designated substance and must be removed using proper procedures & safely disposed of. Since there is a considerable amount of loose paint lying on floors, it is recommended that the paint be removed before the building becomes a work zone.

3.3 Building Code/Fire Code Issues

Existing stairs 3 and 4 do not meet Building Code requirements. However, one stair in Phase 5 (stair #1), and stair #2, can likely be upgraded without difficulty.

Under the Ontario Building Code, a building of combustible construction with a building area of 29,500 sq.ft, 3 or 4 storeys plus basement in height, is permitted for office or residential use. Floor to floor ratings will be minimum 45 minutes. This means that the existing wood structure will require some level of fire proofing.

In each case, the building must be sprinklered, and require a fire alarm system. The building is required to face 2 or 3 streets.

In order to reduce the construction requirements, it would be beneficial to split the building into fire compartments.

3.4 Potential for Additional Floors

Additional floors are considered as a means of possibly increasing the density of the potential development on the property. The existing building has 78,000 sq. ft of floor space, (not including basement). The scenarios analysed for cost each have 78,000 sq.ft also.

Scenario 1 is not capable of supporting additional floors on the existing structure, except in Phase 5, where some additional capacity is available.

Scenario 2 could increase density in 2 ways – by increasing the height of the new building components, and by increasing the footprint of the new buildings.

In either of these ways, the floor area of the development could be increased to the extent permitted by the Zoning By-Law

Scenario 3 can be built out to the maximum height and area permitted by the zoning bylaw.

4.0 DEVELOPMENT SCENARIOS

The scenarios are shown graphically on subsequent pages. The scenarios are as requested in our terms of reference, except that 2 avenues for Scenario #2 have been considered.

SCENARIO 1

4.1 Upgrade Existing Structure

This scenario includes the repair and stabilization of the existing building, in 2 stages: The first stage is to produce a stable and weathertight building envelope, the second stage is to add infrastructure required for either office or residential use.

Within the 78,000 sq. ft of floor area (excluding basement), approximately 88 residential units could be provided, with an average size of 800 sq.ft. Ten percent of the floor area is assumed to be required for corridors and service spaces. Entrances for this scenario could be split according to the arrangement of each phase; logical separate addresses could be created for the Phase 1 & 2; Phase 4 & 5; and the house.

It is not practical from a structural perspective, nor with regard to parking layout, to put parking for this option beneath the existing building. The column spacing is not suitable for the turning radii required, and sub-excavating to provide multiple levels of parking would be structurally impractical.

Car parking for scenario 1 would have to be provided elsewhere, either above ground or below. The estimate includes an allowance for provision of 110 above-ground car parking spaces for residential and 259 spaces for the office development option. Some surface car parking could be provided in front of the house at the corner of Young & Duke; however this is not recommended from an urban design standpoint.

Additional floors cannot be added to phases 1, 2, 4, or the house. Phase 5 (the “Art Deco” structure) can accommodate additional floors, which could provide an additional 9600 sq.ft of gross floor area.
Total maximum development would be 87,600 sq.ft. Car parking requirement would increase to 125 spaces for residential, and to 291 spaces for office use.

It is assumed that the restoration of the house would be included to the original details of carpentry and plaster. Exterior windows would be replacement of original wood windows with leaded glass. Brickwork would be cleaned. New roofing would be asphalt shingles, with prefinished aluminum eavetroughs & downspouts.

SCENARIO 2

4.2 Conservation of Selected Elements & Replacement of Remainder with New Construction

We have explored 2 ways of approaching this scenario based on heritage considerations. Since the exterior walls are designated, but not the space behind the walls, it would be permitted to remove the buildings and utilize the facades only, as design elements in an otherwise new building development.

The most interesting facades are those of Phases 1 & 2; and Phase 5. In this scenario, the 78,000 sq.ft of space would be created by new construction maximizing the usefulness of the site by increasing the height to 4 storeys.

Additional floors, or additional floor area to increase site density, could be added to the new building elements.

New floor to floor heights would be designed to suit the window heights of the facades, giving a 12 – 13ft floor to floor height.

Car parking can be provided beneath the development, with some restrictions in the area of the foundations of the retained walls. Approximately 80 car spaces per level can be provided.

Our cost estimate has included for the purchase cost of additional land to provide the remaining parking required for this development.

Option 1

Option 2

Option 3

Total car parking required for residential development would be 110 spaces for residential, and 259 for office use.

The second approach to this scenario is to retain entire sections of the existing buildings – specifically Phases 1 and 5; and the 78,000 sq.ft development would be created by inserting additional building elements. Limited underground car parking is available with this option.(approx 30 car spaces)

Total car parking required for residential development would be 110 spaces for residential, and 259 for office use. Due to the difficulty with providing the appropriate number of parking spaces for office use, additional parking would be required elsewhere.

Additional floors, or additional floor area to increase site density, could be added to the new building elements. Maximum development would be dictated by the zoning by-law. With bonuses applicable for retention of heritage buildings and bonuses for residential development, the maximum possible floor area is unlimited. For office development, the maximum area is 110,000 sq. ft.

This approach is more meaningful from a heritage standpoint, as it retains the history of the building in a more tangible way. Structural elements, layouts and finishes of the original building, and scale of the interior spaces, would be retained, rather than merely the exterior surface. This approach also provides a more interesting building mass, which is more in scale with the existing buildings.

Either option in scenario 2 provides opportunity for incorporating the site into the overall development for the block.

The option shown for costing purposes is the second approach.

SCENARIO 3

4.3 Demolish Building, Replace with New Building

This scenario is relatively straightforward, and provides the greatest amount of floor area and site density. There are no constraints to underground parking, and the downtown zoning by-law would dictate maximum building height, floor area, and density. However, it removes all considerations of the heritage value of the site.

For scenario 3, the development density can be increased to the extent permitted by the Zoning By-Law for the property. The current zoning is D-1; Retail Core Zone. (Floor space ratio is Floor Area divided by lot area) Floor space Ratio is 2, but with bonuses of 4 for residential, 2 for heritage conservation of buildings, and 7 for heritage value of facades. This would give an unlimited floor area for residential, and 80,000 sq. ft. maximum for office.

However, if the development is to be considered as part of the Centre Block development, then the contribution of floor area for this parcel could be considered in that context.

5.0 EVALUATION OF HERITAGE REQUIREMENTS/CONSTRAINTS

The entire exterior of the building is designated.

As owner and approving authority for 31 Young Street, Council has complete control over the application of the Heritage Act to the development.

The repeal of the designation is not recommended by the Heritage Planner for this development, because there is a simpler more flexible process available. The Heritage Act contains provisions for Demolition or Alteration of a designated structure, neither of which triggers the need to repeal the designation. An application to make changes to the building under the Heritage Act can be brought forward by the owner.

An assessment of the application will be based on a preference for the least possible intervention. Standards of technical and economic feasibility will be included in the assessment by the Heritage Planner and Heritage Kitchener. A recommendation will be brought forward to Council for their approval. City of Kitchener Heritage Planner, and Heritage Kitchener, are willing to discuss options regarding the future of the property in the interest of retaining it for its heritage value.

Consideration would be given to retaining limited portions of the building instead of facades, since this would lead to opportunities for retention of the industrial history, not just the exterior appearance. The most valuable parts of the building from a heritage perspective are Phase 1 (The oldest), the façade of Phase 2 (for it’s exceptional workmanship in duplicating the phase 1 appearance), and the 1937 Art Deco structure facing Duke Street, complete with the rooftop cafeteria.

Council has 90 days from submission of an application under the Heritage Act to make a decision on the application. In the absence of a decision, the application is deemed to be approved. A 1-month turnaround time is typical in the City of Kitchener.

Examples of adaptive re-use projects of a similar nature in the City include:

- 72 Victoria Street (offices)
- Kaufman footwear (mixed use planned / residential)
- Button Factory (Bread & Roses housing co-op)

6.0 COST ESTIMATES

Cost estimates have been prepared using industry standard costs per square foot for each scenario.

A table of all the cost data follows this section.

Cost Estimates

The scope of work for the cost estimates includes repair and stabilizing of the structure, mechanical and electrical systems to produce a "Base Building" capable of being taken by a developer for completion as either an office or as a residential development.

Included are the following elements:

- Complete replacement of the roof covering & introduction of vapour barrier & thermal insulation.
- Replacement of approximately 30% of the roof deck (estimate based on visual review)
- Window replacement on all facades
- New building envelope consisting of stud framing, insulation, air/vapour barrier, interior drywall finish surface, on all exterior walls
- Existing hardwood flooring to be removed throughout.
- Gypsum floor topping to be provided throughout
- New Service Core including 2 elevators and non-combustible stairs
- 2 new exit stairs on the building perimeter
- New building entrance

- Mechanical Systems
  - Roof top equipment for air handling heating & cooling) for common space
  - Stormwater drainage system connected to street services
  - Rough-in for plumbing (since scope varies based on occupancy, a central riser for water, sanitary has been included)

- Sprinkler System

  Electrical Systems
  - Distribution panel for 78,000 sq.ft space
  - Lighting rough in for 78,000 sq.ft space (no fixtures)
  - Fire alarm system
  - Special systems – none.

- Civil
  - Service connections to the property line for stormwater, sanitary, water & gas.
  - Landscaping – none.
  - Removal of designated substances has not been estimated since the extent of the work is unknown.

Upgrade Structure & Building Envelope to Base Level

a) Develop base to unfinished office
b) Develop base to unfinished residential apartments

Demolish Parts of the Existing Building

Temporarily shore elements to be retained
Upgrade retained elements to base level

a) Develop base (retained elements) to unfinished office
b) Develop base (retained elements) to unfinished residential apartments

a) New construction offices with 4-level parking garage underground
b) New construction residential apartments with 2-level parking garage

Demolish Building

a) New construction offices with 2-level parking garage underground
b) New construction residential apartments with 1-level parking garage

Cost Estimate