



Report to: General Committee

Date Report Authored: September 28, 2011

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**SUBJECT:** Milliken Mills Library Feasibility Study  
**PREPARED BY:** Deborah Walker, Strategy & Innovation, Markham Public Library, ext. 4414

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**RECOMMENDATION:**

- 1) That the staff report entitled “Milliken Mills Library Feasibility Study”, dated September 28, 2011, be received;
- 2) And that Option 3 (Partial Two Level Concept as identified in the Milliken Mills Library Feasibility Study) be endorsed in principle as the preferred option for potential library expansion;
- 3) And that the potential expansion of the Milliken Mills Library be considered as a future capital budget item with timelines to be coordinated with the construction of the South East Library Branch;
- 4) And further that Staff be authorized and directed to do all things necessary to give effect to this resolution.

**EXECUTIVE SUMMARY:**

The expansion and renovation of the Milliken Mills Library has been under consideration for several years. As a result of population growth and increased demand for library services, the need for an expansion of up to 13,000 sq. ft. was identified in the Integrated Leisure Master Plan and Development Charges Background Study. A Feasibility Study has developed three potential options for expansion and renovation. This Report recommends Option 3: Partial Two-Level Concept on the basis of shortest construction duration, and minimal library closure, as well as on criteria of functionality, acoustics, safety, supervision and street presence/visibility. This Report recommends that expansion of the Milliken Mills library branch be coordinated with the construction timelines of the Southeast library branch, to ensure continuity of library services to the South Markham Service Area.

**PURPOSE:**

To inform Council regarding the status and preliminary findings of the Feasibility Study regarding potential expansion & renovation of the Milliken Mills Library.

To present three options for potential expansion and renovation, and a recommended option – Option 3 Partial Two-Level Concept.

To obtain Council’s direction regarding a preferred option for expansion.

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To provide Council with preliminary information regarding the financial impacts of this potential project.

## **BACKGROUND:**

### **Milliken Mills Library – History**

Milliken Mills Library opened in 1990, at 7600 Kennedy Road (between Denison and 14<sup>th</sup> Avenue), as part of the Milliken Mills Community Centre. It provides 16,865 sq. ft. of library space and a collection of approximately 130,000 items. Since its opening, Milliken has been one of our busiest branches, serving Markham's most diverse and highest-need communities.

### **South Markham Service Area**

The Milliken Mills Branch is currently the only library branch in the South Markham Service Area (south of Highway 407 between Highway 404 and the York-Durham line). At 16,865 sq. ft., the Milliken branch provides the South Markham Service Area with approximately 0.2 sq. ft. per capita, compared to approximately 0.4 sq. ft. per capita for the Town as a whole.

As identified in the Integrated Leisure Master Plan (at p. 17), the South Markham Service Area has several indicators of high levels of service-need:

- Highest percentage of population between the ages of 10 and 39 (44%).
- Highest percentage of multiple-family households (15%).
- Highest percentage of residents whose mother tongue is neither French nor English (56%).
- Highest percentage of residents who are immigrants (68%).
- Highest percentage of population 15 years and over that are 1<sup>st</sup> generation Canadians (82%).

These indicators translate into high levels of ongoing demand for newcomer services and English-as-Second-Language (ESL) services at the Milliken Mills library branch. High levels of multiple-family households co-relate to high levels of demand for community spaces for quiet study, homework, Internet access, leisure, children's play-based learning, and safe places for youth to gather. The draft building program for the Milliken Mills Library expansion responds to these demand trends.

Further indicators of need include York Region's neighbourhood EDI (Early Development Instrument) which measures kindergarten children's readiness to learn in the school environment, and indicates that in the Milliken West Neighbourhood, the EDI score for communication skills and general knowledge decreased by 9% between 2003 and 2006, and significantly lags EDI scores for York Region as a whole, and for Ontario. This indicator underscores the need to strengthen neighbourhood infrastructure that contributes to the well-being of young children and their families, and to ensure that Markham's communities are complete, supportive and healthy.

**Milliken Mills Library – Intensive Usage**

Milliken Mills is the most intensively used library branch in Markham. In 2010, customers borrowed 966,402 items, up 5.3% over 2009. Annual customer visits were 516,372, up 3%. On a per square foot basis, it has the highest level of customer in-person visits in the system (annually 30.6 visits per sq. ft., compared to an average 18 visits per sq. ft. across all other Markham Libraries Branches). Annual borrowing on a per sq. ft. basis is one of the highest, at 57.3 compared to 43.4 for the system.

**Library Board Priority – Expansion of Library Facilities in South Markham**

As recorded in the minutes of its meeting on March 31, 2008, the Library Board has identified the addition of library space in South Markham as a priority. The Board endorsed “the immediate expansion of library facilities within south Markham,” and further endorsed “equitable service across the whole system by improving the level of service to meet the MPL standard of at least 0.6 sq ft per capita.”

**Integrated Leisure Master Plan (ILMP)**

Recommendation 71 of the ILMP Report (p. 39) provided that “the Markham Public Library should move toward the desired provision target of 0.6 square feet per capita” through the implementation of several capital projects, including the following recommendations for library facilities in South Markham/Area D as identified in the ILMP:

- Continue with plans to expand the Milliken Mills Library Branch (an additional 13,000 ft<sup>2</sup>) in 2012.
- Develop an additional library branch to serve Southeast Markham (Area D) by 2014 (approximately 20,000 ft<sup>2</sup>). This is currently the most under-served and high needs area in Markham due to its lack of library space and socio-demographic profile (the area has a considerable number of multiple-family households, immigrants, and first generation Canadians; each of these factors are indicators of high demand for library and related services).

This recommendation (as with all ILMP recommendations) was based on an extensive process of community consultation, research and analysis, including a random sample household survey, community search conferences, trend analysis, infrastructure needs assessment, strategic service delivery report, financial strategy and Council workshops. As reported in the ILMP report at p. 19, the household survey indicated that libraries are the top priority for municipal spending by facility type.

As per ILMP recommendation 71.c, and as directed by Council, the Southeast Library (and Community Centre) is currently being implemented through community consultation and design, with substantial performance projected for Q2 2015. The proposed project to expand the Milliken Library aligns with and completes the Council-approved ILMP recommendations for library services in South Markham.

The proposed expansion of the Milliken Mills branch will, along with the new Southeast library branch, implement the ILMP recommendations for South Markham, and move service levels toward “the desired provision target of 0.6 square feet per capita”. The table below outlines the impact of these two projects on the level of library space provision in South Markham – i.e., 0.57 sq. ft. per capita by 2016. It assumes the opening of the new Southeast library branch in 2015 and the opening of an expanded Milliken library branch in 2016.

**Table 1: Square Feet per Capita with Milliken Mills Expansion**

SERVICE AREA	2011	2012	2013	2014	2015	2016
WEST MARKHAM	0.45	0.44	0.43	0.41	0.40	0.39
EAST MARKHAM	0.39	0.70	0.68	0.66	0.64	0.62
THORNHILL	0.63	0.62	0.61	0.61	0.60	0.59
SOUTH MARKHAM	0.20	0.20	0.20	0.19	0.42	0.57
MARKHAM AVERAGE	0.40	0.47	0.46	0.45	0.50	0.53

In the event that the Milliken expansion project does not proceed, the library space provision level in the South Markham Service Area will peak in 2015 at 0.42 sq. ft. per capita, and then begin to decline against the Markham average, as population growth continues. See table below:

**Table 2: Square Feet per Capita without Milliken Mills Expansion**

SERVICE AREA	2011	2012	2013	2014	2015	2016
WEST MARKHAM	0.45	0.44	0.43	0.41	0.40	0.39
EAST MARKHAM	0.39	0.70	0.68	0.66	0.64	0.62
THORNHILL	0.63	0.62	0.61	0.61	0.60	0.59
SOUTH MARKHAM	0.20	0.20	0.20	0.19	0.42	0.42
MARKHAM AVERAGE	0.40	0.47	0.46	0.45	0.50	0.49

Staff will provide a separate report on the Southeast Library Branch project.

### **Expansion Strategy for Milliken Mills Library**

The expansion and renovation of the Milliken Mills Library has been under consideration for several years. As noted in the Integrated Leisure Master Plan reports, population growth and increased demand for library services in the branch’s Service Area (South Markham) have resulted in insufficient space available for many needs, including but not limited to spaces for study, computers, teens and children’s services. To deliver efficient and effective library services to Markham residents and align this branch’s functionality with current standards for public library operations, the Milliken Mills Library branch requires expansion by up to 13,000 sq. ft. and renovation of existing interior space. This would bring the total branch size up to approximately 30,000 sq. ft. and make it similar in size to the Angus Glen and Markham Village library branches, which are adequately sized to serve as full-service community library branches.

### **Library Feasibility Study**

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Through the 2009 budget, Council authorized the hiring of an external consultant to conduct a Feasibility Study regarding potential expansion & renovation of the Milliken Mills Library. The intent was that the Feasibility Study would lay the groundwork for design development and construction in future budget years.

The existing branch is located at the south end of the single-storey Milliken Mills Community Centre. The site affords opportunity for potential expansion at ground level to the east, south or west of the existing building. Alternatively, expansion vertically to a second floor could potentially be an option. The approach of the Feasibility Study was to investigate options for expansion within the site parameters, analyze all options in terms of engineering issues, code issues, cost and operational implications, and develop a preferred conceptual approach for expansion, including a project estimated budget.

In developing options for expansion, the Feasibility Study also included analysis of renovation options for the existing library space, and how that space could be integrated with the expansion space. The outcome of the Study process should be a design that successfully integrates the old with the new space, and provides approximately 30,000 total sq. ft. of library space configured to effectively implement Library service models and strategies for customer service and efficiency.

**a) Architectural Consultant**

Following an RFP process, Brian Gregersen of WGD Architects Inc. was engaged as the consultant to conduct the feasibility study. The scope of WGD's services included site and building investigation, the development of at least three options to expand the facility by a maximum 13,000 square feet, and including an architectural review, structural review, mechanical review (plumbing, HVAC, fire suppression), electrical review (lighting, receptacles, data, telephone, fire alarm), security review (security system and security cameras), and environmental impacts/options to make the library more green.

**b) The Feasibility Study Process & Community Consultation**

The Feasibility Study process included review and development of expansion options, presentations to the Library Board at its meetings on November and December 2009, and community consultation.

Community consultation included a public open house on December 3, 2009, a Customer Survey Form distributed at the open house, and an online customer survey. Community feedback received through these processes supports the priority areas for improvement identified in the draft building program – more study space, more seating, improved ventilation and improved spaces for teens and children. In response to the statement – “Renovated branch is needed”, 41.1% of respondents agreed, and 49.7% strongly agreed.

Community feedback, along with the socio-economic data documented in the Integrated Leisure Master Plan, informed the draft building program for the Milliken Mills Library expansion and was carried forward into the proposed space allocations and layouts developed through the Feasibility Study.

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**c) Development Charges (DC) Background Study for Town-Wide Soft Services 2009**

The Town of Markham's Development Charges (DC) Background Study for Town-Wide Soft Services was approved by Council in June 2009. The Study was based on a ten-year growth-related capital program for Markham's leisure services, including the Markham Public Library. For the Milliken Mills Library Expansion, the Study provided:

The expansion of the Milliken branch, planned to be 13,000 square feet, will occur in 2011 at a total construction cost of approximately \$5.05 million. Fixtures, furniture and equipment and additional collection materials for this expansion add \$1.21 million and \$1.85 million to the capital program.

A total capital cost of \$8.1 million was identified in the Financial Chapter of the ILMP Report, which noted at p. 75 that "the Milliken Mills Library Expansion project will be subject to a feasibility study, which will define scope and costs in greater detail".

**Alignment to Feasibility Study for the Milliken Mills Community Centre**

During 2010, and in the context of the Pan Am Games venue process, a Feasibility Study was conducted regarding the potential expansion of the Milliken Mills Community Centre in terms of site fit for a proposed expansion program (Active Living Space, Multipurpose/Meeting Rooms, and a Staff Operations Centre Hub). The proposed Community Centre addition could be located to the east of the existing Community Centre, i.e. between Kennedy Road and the existing multi-use rooms, and presents no interference issues for the proposed Library expansion (which is located to the south of the existing Library). Both proposed expansion projects are therefore not in conflict with each other.

**Milliken Mills Site Review**

As requested by Council, staff are developing a Milliken Mills Site Review Plan, which will include a review of all aspects of the overall site / campus, including outdoor space, library expansion, recreation expansion, the operations yard, soccer dome and adjacent high school. A workshop with Council is proposed to include a site overview, current issues, future needs, community demographic information, and timing of development. The timing issue requires consideration in the context of balancing off other priorities, i.e. operationalising the East Markham Community Centre and Library in 2012, and resourcing for the design and construction of the Southeast Community Centre and Library during 2012 to 2015.

**OPTIONS/ DISCUSSION:****Options for Expansion – Council Direction Required**

At this point in the Milliken Mills Site Review process, Council review of the options and direction regarding a preferred option for library expansion is needed.

**Options – Staff Recommendations**

The consultant has developed three options for expansion:

- Option One: One Level Concept
- Option Two: Two Level Concept
- Option Three: Partial Two Level Concept (Recommended)

The consultant's report is appended to this Report and provides drawings and detailed Design Descriptions, Advantages and Disadvantages, Cost Summary, Construction Duration estimate, and Library Closure implications for all three Options.

Staff reviewed the consultant's analysis and compared the three options from the perspective of three critical factors – cost, construction duration and closure duration. The cost estimates for the three options were within a tight range of \$15.8 to \$17.2 million. While these estimates are order of magnitude correct (Class D), and as such may be considered nearly equivalent, further refinement, through the schematic design process resulting in a Class C estimate, will be needed to strike a project budget. The other factors are summarized in the table below:

	<b>Option One: One Level Concept</b>	<b>Option Two: Two Level Concept</b>	<b>Option Three: Partial Two Level Concept (PREFERRED OPTION)</b>
Front End Work (Design /Contract Documents/Tender	16 months	18 months	16 months
Construction Duration	19 months	24 months	18 months
Library Closure	12 months	24 months	12 months

In terms of minimizing construction duration, and minimizing the period of branch closure, Option Three appears to offer the most benefits.

The options have been further analyzed in terms of functionality (floorplate and layout, acoustics, and safety and supervision), and street visibility:

	<b>Option One: One Level Concept</b>	<b>Option Two: Two Level Concept</b>	<b>Option Three: Partial Two Level Concept (PREFERRED OPTION)</b>
<b>Functionality – Floor Plate &amp; Layout</b>	Large one-level floor plate – long spans / travel distances between departments.	No change to building footprint; more compact layout – short spans / travel distances between departments on both levels.	Large main level floor plate. Upper level is compact. Overall, layout is more compact than Option 1.
<b>Functionality – Acoustics</b>	No level changes. Additional acoustic buffering required to separate study/quiet and active areas.	Two levels – provides good zoning between study/quiet and active areas.	Partial Two levels – provides good zoning between study/quiet and active areas.
<b>Functionality – Safety &amp; Supervision</b>	One level facilitates supervision by staff	Two levels are more difficult to supervise.	Partial Two levels are somewhat more

			difficult to supervise.
<b>Street Presence / Visibility</b>	No change	More visible from street	More visible from street

Based on the analysis above, staff recommend Option 3 Partial Two Level Concept as the preferred option to be taken forward into design development. Option 3 achieves the best balance of functionality, improved street visibility, construction phasing, minimizing disruption to operations, and minimizing closure periods.

**Library Board Position on the Options** At its meeting on December 14, 2009 (item 7.1), the Board resolved that:

The split level option [Option Three: Partial Two Level Concept] be put forward as the preferred option by the Board.

### **Recommended Timing and Service Provision during Construction**

It is proposed that the expansion of the Milliken Mills library branch be coordinated with the construction timelines of the Southeast library branch, which is targeted for opening to the public in Q2 2015. The intent of the recommended timing is that any construction-related closure of the Milliken Mills library branch take place only after the Southeast library branch is fully operational, to ensure continuity of library services to the overall South Markham Service Area.

### **FINANCIAL CONSIDERATIONS:**

The consultant's report provides cost estimates for each Option. As noted in the report, the estimated project costs include hard construction costs, site services and landscaping, soft costs such as fittings, furnishings and equipment, as well as professional fees and contingencies. The costs also reflect the objective of LEED Silver Certification resulting in the improved energy performance of the new library.

However, as noted above, the cost estimates for the three options were within a tight range of \$15.8 to \$17.2 million. While these estimates are order of magnitude correct (Class D), and as such may be considered nearly equivalent, further refinement, through the schematic design process resulting in a Class C estimate, will be needed to strike a project budget.

The proposed project budget would also include a library collection cost for additional materials, estimated in the DC background study at \$1.85 million.

### **Funding**

The cost of the expansion and renovation of the Library ranges in cost from \$15.8 to \$17.2 million based on the feasibility study exclusive of library collection cost and \$17.65 to \$19.05 million inclusive of library collection cost. Typically the cost for the expansion can be funded up to 90% from development charges (DC's) with the



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remainder from other sources. The renovation costs cannot be funded through development charges and has to be funded from other sources such as taxes and library reserves (\$5.1M being collected over 10 years).

**Service Levels – Development Charge Impact and Risks**

The service level on a town-wide basis for the Library services is approximately 0.4 sq.ft./capita and DC's can be utilized to maintain this level of service. Service levels from a DC standpoint are determined based on the entire geographic area of the Town, not based on pre-determined segments. While DC's can be used to temporarily increase services levels through the pre-emplacement of facilities, a permanent increase to the Town's average service levels will require an alternative source of funding other than DC's.

Based on the 2009 DC Background Study, the Library has exceeded the 10-year historic average service level which resulted from the pre-emplacement of facilities (building in advance of growth). By constructing additional facilities in East Markham, South East Markham and expanding the Milliken facility in such a short period of time, there will be significant "excess capacity" in terms of a DC service level. Excess capacity occurs when the current service level is greater than the 10-year average service level. The Town may also not be able to fund any other Library services from DC's until the cost of the facilities constructed are recovered through DC collections.

Therefore, the potential expansion should be considered after the opening of the South East Library.

**HUMAN RESOURCES CONSIDERATIONS**

As noted by Asset Management, the fees estimate includes project management.


**ALIGNMENT WITH STRATEGIC PRIORITIES:**


The Milliken Mills Library Feasibility Study provides the foundation for the expansion and renovation of this well-used library branch in the currently under-served South Markham Area. In the context of Building On a Winning Record, it advances library services in South Markham, and implements a key recommendation of the approved Integrated Leisure Master Plan. As a project whose objectives include enhanced accessibility and improved energy efficiency (LEED Silver), it also aligns with the Diversity Action Plan and Greenprint strategic priorities.

**BUSINESS UNITS CONSULTED AND AFFECTED:**

Recreation, Finance, Asset Management.

**RECOMMENDED**

**BY:**   
for Catherine Biss, CEO, Markham  
Public Library

**BY:**   
for Brenda Librecz,  
Commissioner, Community & Fire Services

**ATTACHMENTS:**

Appendix 1: WGD Architects Inc., Milliken Mills Library Feasibility Study

## MILLIKEN MILLS LIBRARY STUDY

### 1.0 Introduction

The Milliken Mills Community Centre is located at 7600 Kennedy Road. The site has three buildings; an arena at the north end, a swimming pool in the centre, and a library at the south end of the building. The building was built in 1982 and has a total gross floor area of 103,428 sm.

The existing branch library at 16,865 sq. ft. is a one storey facility. The plan of the library is square in configuration with articulated semi-circular bays along the east and west and a triangular bay window on the south elevation. The form of the library is dominated by a large triangular clerestory and roof at the centre of the library bringing in natural light as well as creating a higher ceiling space. This clerestory acts as a landmark feature and terminates the public corridor that links the three components of the community centre.

The objective of this study for the expansion of the Milliken Mills Library is to review and determine strategies for expansion based on the service model and draft building program dated September 8, 2009.

### 1.1 Existing Building

An inspection report reviewing the condition of the library was undertaken in 2006 by Inspec-Sol. The report listed the current condition and deficiencies of the library at that time. The report noted the following comments:

#### Site:

- The site drainage is good. There are many catch basins on the site as well as extensive landscaping.
- Pavement is in generally good condition with some settlement and cracking especially around manhole covers and on islands.

#### Structure:

- Library has a poured-in-place concrete foundation wall with a slab on grade floor.
- The library has a combination of load bearing masonry, steel structure and steel stud wall construction with a brick veneer cladding.
- The roof framing is with steel joists that bear on the exterior walls or steel beams with a steel deck on top of the joists.
- All concrete foundation walls and slabs appear to be in good condition.

#### Envelope:

- The exterior wall is brick cladding with control joints, air space, exterior sheathing, steel stud and/or masonry back-up. EIFS is on the perimeter foundation where exposed.
- The window wall and brick wall of the library is in good condition with some minor wall deterioration. The flashings at the glass block circular windows is in poor to fair condition.

- There is soffit damage at the exterior window wall.
- The door frames are aluminum with tempered glazing. The clerestory is an aluminum framed curtain wall system. Windows and doors are in good condition.
- Roofing is a EPDM membrane roofing system with pavers and river rock as ballast. The sloped metal clad roof on the central pyramid clerestory.
- The roofing is in good condition with some damaged flashing at the parapet wall caulking required in the clerestory pyramid.

**Interior Finishes:**

- The ceiling of the library is a combination of suspended acoustic tile and painted drywall.
- The flooring is carpet with ceramic tile at the entrance.
- The circular rooms on the side have skylight ceilings, glass block walls and carpet floor finishes.
- Finishes are in good condition. There are stained and detached acoustic tiles at various locations.

**Mechanical and Electrical Systems:**

- Heating and cooling for the library is from two Carrier supply/return air handlers. The indoor air handlers are in good condition but noted as noisy.
- There is a central transformer room adjacent to the electrical room with a distribution switchboard serving various transformers throughout the Centre. The main transformer from 1988 is in fair condition.
- Domestic hot water tanks serve the library and the pool. There was evidence of corrosion and insulation damage.

**Fire Protection:**

- The main floor is sprinklered with a dry pipe system and has a two stage fire alarm system.
- Battery powered emergency light are throughout the Centre.
- Sprinkler and fire alarm system are up to date with inspections.

**1.2 Capital Expenditure Estimates:**

The following estimates have been identified by facilities management for replacement beyond 2009.

- |   |          |
|---|----------|
| • Carpet to be replaced in 2010:                  | \$82,500 |
| • Sheet flooring up to carpeting in 2015:         | \$2,200  |
| • Suspended ceiling in Program Room in 2019:      | \$2,000  |
| • Staff Room office chairs in 2016:               | \$3,000  |
| • Carpet in Staff Work room in 2010:              | \$2,200  |
| • Quarry Tile floors in Women's Washroom in 2019: | \$2,200  |
| • Paint interior of main library in 2010:         | \$8,000  |

The total estimated work in the library beyond 2009 is: **\$102,100**

## MILLIKEN MILLS LIBRARY FEASIBILITY STUDY

### DESIGN OPTIONS

#### OPTION ONE: One Level Concept

##### Design Description:

This option is a one level concept that encapsulates the existing library on three sides. The design considerations in this option are as follows:

- The entrance corridor to the library is widened to create a more welcoming entrance from the main centre hall.
- The west entrance vestibule will be expanded to the north wall of the library to allow an internal book drop into the Sorter Room.
- The existing washrooms at the entrance are relocated within the library.
- The existing entrance doors are removed and replaced with automatic sliding glass doors.
- Immediately at the west side of the entrance to the library is the customer service area. This area is adjacent to the Sorter Room, Work Room and Delivery/Receiving area, to support efficient operations.
- New Materials, café and staff room are located on the east side of the library.
- The program room on the east side remains in the same location but the entrance door to the program room is moved to the north closer to the centre hall allowing use of the program room when the library is closed. There is also an entrance from the library side.
- The Kid's Department is located in the west portion of the plan and the teen area is located in the east portion separated by an internal courtyard in the centre of the plan bringing in natural light.
- The internal courtyard could be enclosed with a skylight or open to the elements. The courtyard could also be used as additional program space or a reading garden.
- Staff Work Rooms are located in the adult/teen collection area as well as in the Kid's Department.
- General Washrooms and a Family Washroom are located adjacent to the existing mechanical room.

- The main lounge is on axis with the library entrance and has views and access into the internal courtyard.
- Study rooms are located on the south exterior wall and grouped around the internal courtyard.

**Advantages:**

- The redesign of the library is on one level facilitating supervision and control of the library.
- The central clerestory of the existing library remains intact.
- Parts of the library could possibly remain operational during construction of the new addition, which could be constructed around the existing library and the walls removed after completion.
- The encapsulation approach will provide the opportunity to increase building insulation and energy performance with new walls and windows.
- This concept will create a new image for the library.

**Disadvantages:**

- The extent of new roofing, mechanical systems and the connection to the existing library may involve a partial or full closure of the library during construction.
- The enclosure of the existing library on three sides will bring the new library closer to the driveways and reduce open space around the library.
- The total floor plate of the library is large at over 30,000 sf on one floor.
- This concept approach, by extending the single-storey of the existing library, does not create an enhanced presence from Kennedy Road.

<b>Cost Summary:</b>	Estimated Project Cost - \$16.16 million
<b>Front End Work:</b>	16 months (Design/Contract Documents/Tender)
<b>Construction Duration:</b>	19 months
<b>Library Closure:</b>	The existing library will be closed for approximately 12 months for renovation. Existing library could remain operational while new addition to library is constructed.

<b>Option One: One Level Concept</b>			
<b>1.0</b>	<b>Existing Library</b>		
1.1	Library Renovation	\$4,224,000	16,895sf @ \$250/sf
1.2	Expanded Centre Vestibule	\$50,000	Book drop to sorter room
1.3	New Mechanical/Electrical	\$2,000,000	Entire Library
1.4	New Roof	\$200,000	
1.5	New Finishes	\$150,000	
<b>2.0</b>	<b>Addition</b>		
2.1	New Library Space	\$3,950,000	13,168 sf @ \$300/sf
2.2	Demolition Allowance	\$100,000	Existing exterior walls of library
<b>3.0</b>	<b>Site Development</b>		
3.1	Landscaped Courtyard	\$100,000	Reading Garden
3.2	Site Services and Grading	\$300,000	
<b>4.0</b>	<b>Fittings/Furniture/Equipment</b>		
4.1	Shelving and Display Systems	\$400,000	
4.2	Furniture	\$500,000	
4.3	Sorter Room Equipment	\$300,000	
4.4	Computers/IT	\$250,000	
4.5	Security/Signage	\$150,000	
4.6	Misc. Equipment	\$100,000	
<b>5.0</b>	<b>Soft Costs</b>		
5.1	Professional Fees/Expenses (15%)	\$1,916,000	Legal, Permit, Management
5.2	Contingency (10%)	\$1,470,000	
	<b>Total Project Cost</b>	<b>\$16,160,000</b>	<b>\$538/sf</b>

## **OPTION TWO: Two Level Concept**

### **Design Description:**

This option is a two storey concept that duplicates the footprint of the main floor level of the existing library and adds a second floor addition. The design considerations in this option are as follows:

- The entrance corridor to the library is widened to create a more welcoming entrance from the main centre hall.
- The west entrance vestibule will be expanded to the north wall of the library to allow an internal book drop into the Sorter Room.
- The existing washrooms at the entrance are relocated within the library adjacent to the staff room and customer service area.
- The existing entrance doors are removed and replaced with automatic sliding glass doors.
- Immediately at the west side of the entrance to the library is the customer service area. This area is adjacent to the Sorter Room, Work Room, Staff Room and Delivery/Receiving area, to support efficient operations.
- New Materials, café and Information Services are located on the east side of the library.
- The program room on the east side remains in the same location but the entrance door to the program room is moved to the north closer to the centre hall allowing use of the program room when the library is closed.
- The Kid's Department is located on the main level in the south portion of the plan with access to an exterior garden.
- A new "atrium" space is central to the plan and includes a stair and elevator to the second floor. A skylight would bring natural light into the centre of the library.
- The Teen Area is located on the second floor along the south wall. Study Rooms act as buffers to the Teen Area from the Adult Collection and the Media Centre.
- Staff Work Rooms are located in the adult/teen collection area as well as in the Kid's Department.
- General Washrooms are located adjacent to the Program Room on the main floor level as well as on the second floor in the Adult Collection Area. A Family Washroom is located in the Kid's Department.
- The main adult lounge is on the second floor adjacent to the Computer Learning Centre, Media Centre and the Multilingual Area.



**Advantages:**

- The redesign of the library is on two levels creating an enhanced presence and visibility from Kennedy Road.
- The footprint of the Library is compact and as per the existing footprint.
- This concept will create a new image for the library. The existing walls of the main level will require re-cladding to provide increased insulation levels and energy efficiency. New windows will also be required to match the new second floor addition as well as improve energy efficiency.
- The two level concept facilitates zoning of functions. The Kid's Department, New Materials and Café on the main level, the Teen Area, Adult Collection and Adult Lounge on the second floor.

**Disadvantages:**

- The extent of construction and renovation will involve a full closure of the library during the full construction period.
- Essentially this concept is a new library. The exterior walls of the existing library will remain intact with improved energy efficiency and new windows etc., but the roof deck and structure will require reinforcing and the mechanical/electrical systems will be replaced.
- The two level concept may be more difficult to supervise.
- The main stair, elevator and exit stairs reduce the efficiency of the floor areas.

<b>Cost Summary:</b>	Estimated Project Cost - \$17.15 million
<b>Front End Work:</b>	18 months (Design/Contract Documents/Tender)
<b>Construction Duration:</b>	24 months
<b>Library Closure:</b>	Library will be fully closed for duration of construction period.

<b>Option Two: Two Level Concept</b>			
<b>1.0</b>	<b>Existing Library - Main Floor</b>		
1.1	Library Renovation	\$4,224,000	16,895sf @ \$250/sf
1.2	Expanded Centre Vestibule	\$50,000	Book drop to sorter room
1.3	New Mechanical/Electrical	\$1,500,000	Entire Library
1.4	New Structural Deck and Floor	\$300,000	
1.5	Reinforced Structure	\$200,000	
1.6	New Finishes	\$150,000	
<b>2.0</b>	<b>Addition - Second Floor</b>		
2.1	New Library Space	\$4,530,000	15,097 sf @ \$300/sf
2.2	Demolition Allowance	\$200,000	Roof Deck/clerestory etc
2.3	Elevator	\$150,000	HC Accessible
2.4	Main Stair and Exit Stairs	\$100,000	
2.5	Skylight	\$100,000	Over central stair
<b>3.0</b>	<b>Site Development</b>		
3.1	Landscaped Courtyard	\$50,000	Reading Garden
3.2	Site Services and Grading	\$300,000	Allowance
<b>4.0</b>	<b>Fitting/Furniture/Equipment</b>		
4.1	Shelving and Display Systems	\$400,000	
4.2	Furniture	\$500,000	
4.3	Sorter Room Equipment	\$300,000	
4.4	Computers/IT	\$250,000	
4.5	Security/Signage	\$150,000	
4.6	Misc. Equipment	\$100,000	
<b>5.0</b>	<b>Soft Costs</b>		31992
5.1	Professional Fees/Expenses (15%)	\$2,033,000	Legal, Permit, Management
5.2	Contingency (10%)	\$1,560,000	
	<b>Total Project Cost</b>	<b>\$17,147,000</b>	<b>\$537/sf</b>

### **OPTION THREE: Partial Two Level Concept**

#### **Design Description:**

This option is a combination of a one level and two level concept that retains the footprint of the main floor level of the existing library and adds a two level addition at the south wall of the existing library. The design considerations in this option are as follows:

- The entrance corridor to the library is widened to create a more welcoming entrance from the main centre hall.
- The west entrance vestibule will be expanded to the north wall of the library to allow an internal book drop into the Sorter Room.
- The existing washrooms at the entrance are relocated within the library.
- The existing entrance doors are removed and replaced with automatic sliding glass doors.
- Immediately at the west side of the entrance to the library is the customer service area. This area is adjacent to the Sorter Room, Staff Room, Work Room, and Delivery/Receiving area, to support efficient operations.
- New Materials, Lounge and Information Services are located on the east side of the library.
- The program room on the east side remains in the same location but the entrance door to the program room is moved to the north closer to the centre hall allowing use of the program room when the library is closed.
- The addition to the south of the existing library is a two level plan with an open stair and elevator connecting the two levels.
- The Kid's Department is located on the lower level of the new addition at the south portion of the plan.
- The Teen Area is located on the main floor along the west wall and adjacent to the Café.
- Staff Work Rooms are located in the adult collection area as well as in the Kid's Department.
- The Adult Collection, Multilingual and Large Print/Audio Area as well as the Study Rooms are on the upper level of the new addition.
- Washrooms are located on the second level as well as a Family Washroom is located in the Kid's Department in the lower level.
- A lounge is on the second level adjacent on axis with the entrance corridor and stairs/elevator access.

**Advantages:**

- The library addition is on two levels creating an enhanced presence and visibility from Kennedy Road.
- The footprint of the Library is compact as per the existing footprint with the addition on two efficient levels.
- The addition could be constructed while the library remains operational. Once completed the addition could be connected to the existing library, thereby reducing the construction-related closure period.
- The two storey addition facilitates zoning of functions. The Teen Area, New Materials and Lounge and Café on the main level of the library, the Kid's Department on the lower level of the addition and the Adult Collection, Multilingual and Large Print/Audio on the upper level.
- The central clerestory of the existing library remains intact resulting in less demolition work.
- This option has the least impact on the existing library.
- The addition can be clear span eliminating requirements for internal columns.

**Disadvantages:**

- The existing library will require new windows and insulation to become more energy efficient.
- The existing library is retained in form and image.

<b>Cost Summary:</b>	Estimated Project Cost - \$15.81 million
<b>Front End Work:</b>	16 months (Design/Contract Documents/Tender)
<b>Construction Duration:</b>	18 Months
<b>Library Closure:</b>	Library will be closed for approximately 12 months for renovation. Existing library can remain operational while new addition to library is constructed.

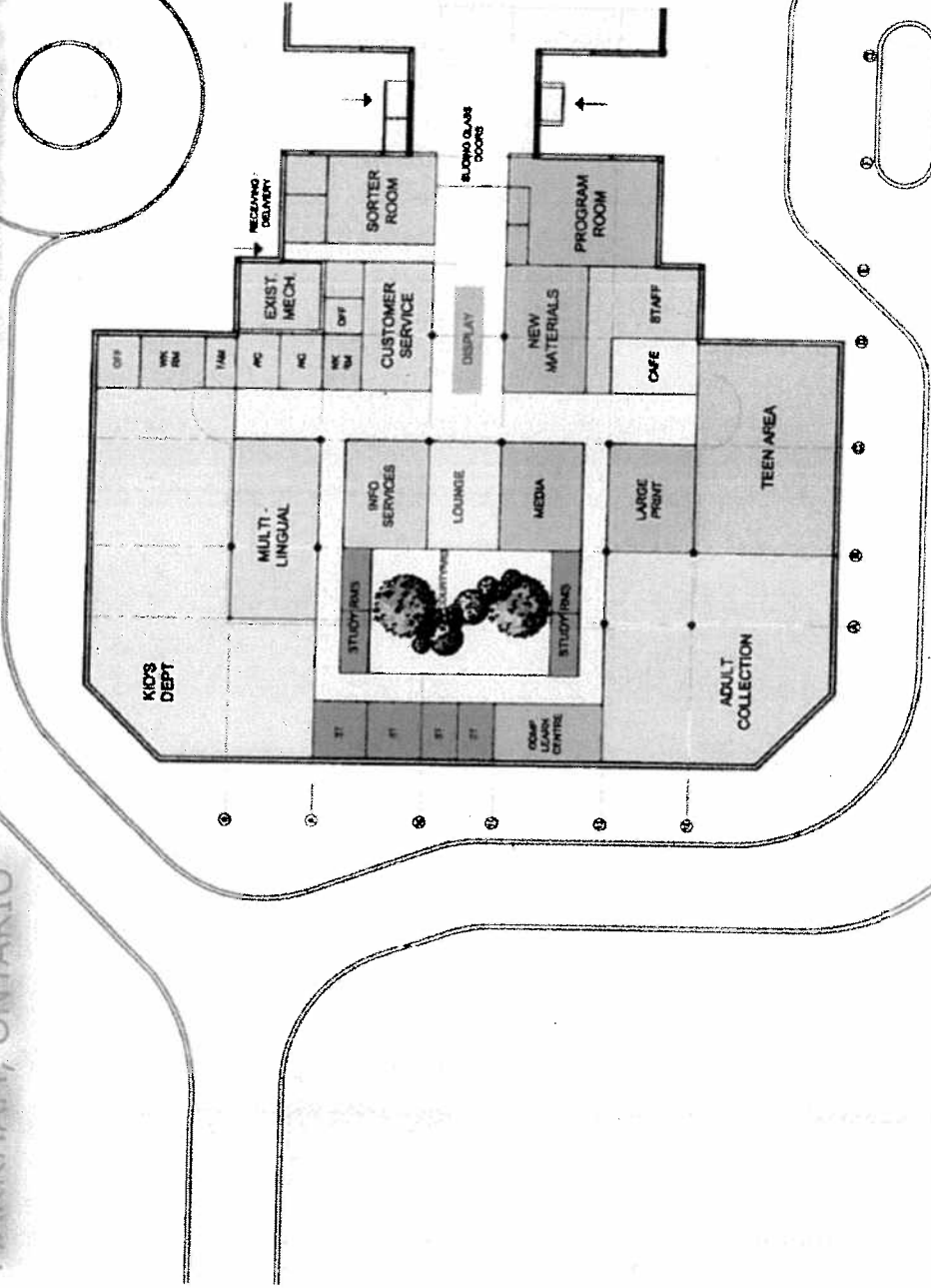
<b>Option Three: Partial Two Level Concept</b>			
<b>1.0</b>	<b>Existing Library-Main Floor</b>		
1.1	Library Renovation	\$4,224,000	16,895sf @ \$250/sf
1.2	Expanded Centre Vestibule	\$50,000	Book drop to sorter room
1.3	Mechanical/Electrical Services	\$1,200,000	
1.4	New Finishes	\$150,000	Carpet, Ceilings, etc
1.5	New Roof	\$150,000	Existing Library
<b>2.0</b>	<b>New Addition</b>		
2.1	New Library Addition	\$4,224,000	14,080 sf @ \$300/sf
2.2	Demolition Allowance	\$50,000	South Wall
2.3	Elevator	\$150,000	Accessible
2.4	Main Stair and Exit Stairs	\$100,000	
2.5	Skylight over Main Stair	\$100,000	
<b>3.0</b>	<b>Site Development</b>		
3.1	Landscaped Courtyard	\$100,000	Reading Garden
3.2	Site Services and Grading	\$300,000	
<b>4.0</b>	<b>Fitting/Furniture/Equipment</b>		
4.1	Shelving and Display Systems	\$400,000	
4.2	Furniture	\$500,000	
4.3	Sorter Room Equipment	\$300,000	
4.4	Computers/IT	\$250,000	
4.5	Security/Signage	\$150,000	
4.6	Misc. Equipment	\$100,000	
<b>5.0</b>	<b>Soft Costs</b>		
5.1	Professional Fees/Expenses (15%)	\$1,875,000	Legal, Permit, Management
5.2	Contingency (10%)	\$1,440,000	
	<b>Total Project Cost</b>	<b>\$15,813,000</b>	\$510/sf

**Note:** The estimated project costs include hard construction costs, site services and landscaping, soft costs such as fittings, furnishings and equipment, as well as professional fees and contingencies. The costs also reflect the objective of LEED Silver Certification resulting in the improved energy performance of the new library.



# MILLIKEN MILLS LIBRARY FEASIBILITY STUDY

MARKHAM, ONTARIO



## LEGEND

STAFF / WORK RM. / SORTER RM.
ADULT COLLECTION / MULTILINGUAL
KIDS COLLECTION
TEEN AREA
LOUNGE / NEWS / CAFE
STUDY ROOMS
PROGRAM RM. / COMP. LEARN CTR.
CUSTOMER SERVICES / INFO
NEW MATERIAL / DISPLAY
MEDIA / LARGE PRINT
SERVICE / MECH / WCS
CIRCULATION

FLOOR AREA	
EXISTING	18,865
ADDITION	13,168
TOTAL	32,033 s.f.

WGD

WGD ARCHITECTS INC.

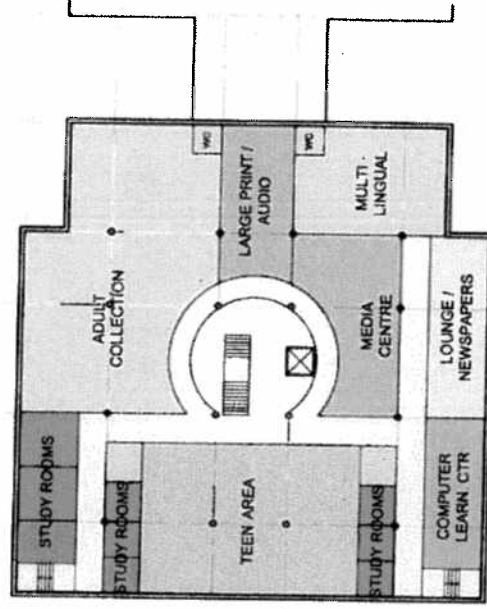
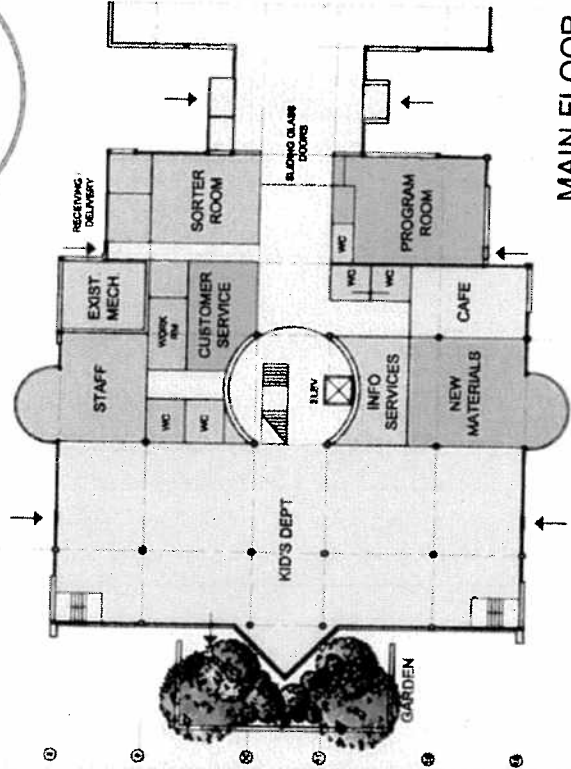
OPTION 1 - ONE LEVEL CONCEPT





# MILLIKEN MILLS LIBRARY FEASIBILITY STUDY

MARKHAM, ONTARIO



## LEGEND

FLOOR AREA	16,685	15,087	31,962 S.F.
MAIN FLOOR			
SECOND FLOOR			
TOTAL			

STAFF / WORK RM / SORTER RM	PROGRAM RM / COMP. LEARN CTR
ADULT COLLECTION / MULTI-LINGUAL	CUSTOMER SERVICES / INFO
KIDS COLLECTION	NEW MATERIAL / DISPLAY
TEEN AREA	MEDIA / LARGE PRINT
LOUNGE / NEWS / CAFE	SERVICE / MECH / WCS
STUDY ROOMS	CIRCULATION

WGD ARCHITECTS INC.

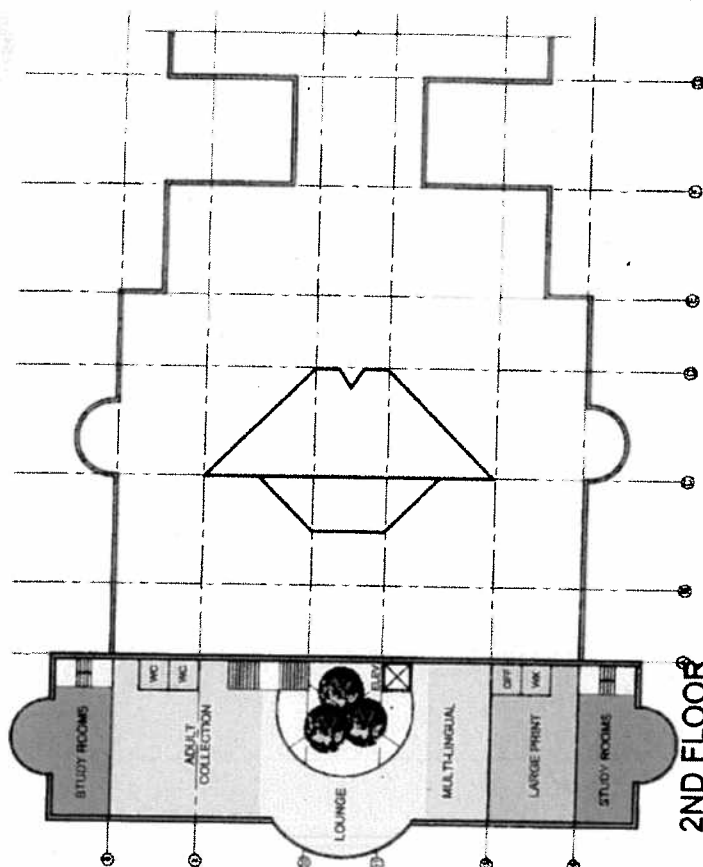
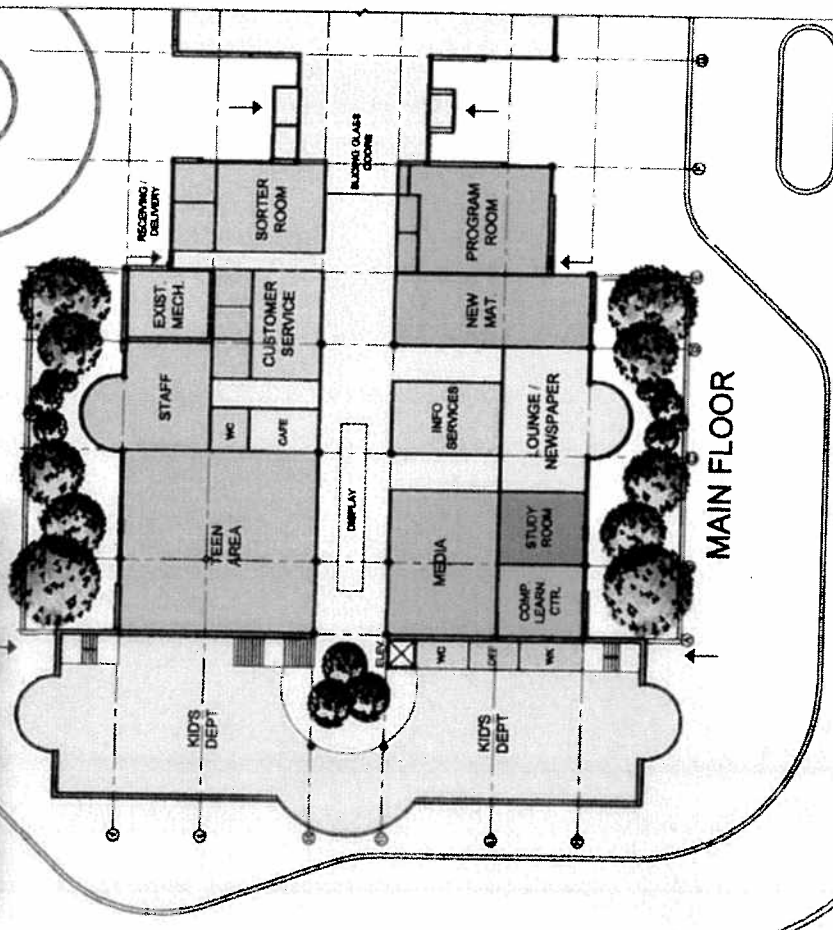
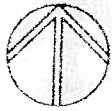
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## OPTION 2 - TWO LEVEL CONCEPT



# MILLIKEN MILLS LIBRARY FEASIBILITY STUDY

MARKHAM, ONTARIO



**LEGEND**

STAFF / WORK RM / SORTER RM	ADULT COLLECTION / MULTILINGUAL	TEEN AREA	LOUNGE / NEWS / CAFE	STUDY ROOMS	PROGRAM RM / COMP LEARN CTR	CUSTOMER SERVICES / INFO	NEW MATERIAL / DISPLAY	MEDIA / LARGE PRINT	SERVICE / MECH / WCs	CIRCULATION
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**FLOOR AREA**

2ND FLOOR	11,100
MAIN LEVEL	7,000
TOTAL	18,100

WGD ARCHITECTS INC

WGD

## OPTION 3 - PARTIAL TWO LEVEL CONCEPT



## **4.0 Building Code Analysis**

### **4.1 Sprinklered Building:**

#### **1. Project Description**

- New Library Addition to Existing Library
- Total GFA is about 2787 m<sup>2</sup> (30,000 sq.ft.)
- Existing Library: 623 m<sup>2</sup> (16,685 sq. ft.) New Addition: 1300 m<sup>2</sup> (14,000 sq. ft.)
- One Storey Building or Two Storey Building
- No basement

**2. Occupancy Classification Table 3.1.2.1**

A2 Assembly occupancies not elsewhere classified in Group A.

**3. Construction /Compartmentation**

One storey or two storeys, facing three streets

[3.2.2.10 (2) An access route conforming to Subsection 3.2.5 is permitted to be considered as a street.

(3) A building is considered to face 3 streets provided not less than 50% of the building perimeter is located within 15 m of the street or streets.]

**3.2.2.27 Group A, Division 2, up to 2 storeys, Increased Area, Sprinklered**

- Building not more than 2 storeys in building height.
- Building area not more than 4800 m<sup>2</sup> (51,799 sf) if 1 storey and 2400 m<sup>2</sup> (25,800 sf) if 2 storeys with no basement.
- Combustible construction or Non-Combustible construction used singly or in combination.

**4. Spatial Separation**

- Corridors: no rating
- Service rooms: 1 hr 3.6.2.1.(5)
- Janitor's rooms: 45 minutes 3.3.1.20.(2)

**5. Egress**

- Single egress permitted where maximum occupant load of 60, maximum room area of 150 m<sup>2</sup> (1,615 sq. ft.), and maximum travel distance within room to an egress door of 15 m. 3.1.5
- Minimum public corridor width 1100 mm.

**6. Exits**

- Maximum travel distance to exit 30 m 3.4.2.5 (f)
- Exit ramps, doorways, corridors and passageways 6.1 mm per person.  
(148 persons per 915 mm door) 3.4.3.4 (a)

**7. Location of Access Routes (3.2.5.5)**

- Access route located not less than 3 m and not more than 15 m from the principal entrance, measured horizontally from the face of the building.
- Fire hydrant located such that the unobstructed path of travel from the hydrant to the vehicle and from the vehicle to the building does not exceed 90 m.
- Maximum unobstructed travel for the fire fighter from the vehicle to the building is 45 m.
- Fire hydrants: maximum 45 m from the department vehicle to the hydrant.

**8. Access Route Design (3.2.5.6)**

- 6 m width minimum.
- Centre line radius not less than 12 m. (Fire truck turning radius 12 m on centre, 9 m inner

radius, 15 m outer radius.)

- Overhead clearance not less than 5 m. (Specify smaller trees or trees with high crowns along the fire route.)
- Gradient not more than 1 in 12.5 (8%) over a minimum distance of 15 m.
- Maximum dead end at 90 m, or provide turnaround.
- Paved in heavy-duty asphalt

## 9. Occupancy Load (3.1.16)

Ref	OCCUPANT LOAD CALCULATION	Area In sq. ft.	Area in m <sup>2</sup>	m <sup>2</sup> /person (3.1.16.1)	# of persons	# of persons rounded up
	Public Entrance/Lobby	360.0	33.4	-	-	-
	Customer Services	624.0	57.9	9.3	6.2	7
	Program Room	1,320.0	122.6	0.75	163.5	164
	Library and Collection Space (50%)	17,256.0	1,603.1	1.85	433.2	432
	Computer Learning Centre	480.0	44.5	1.85	24.7	25
	Study Areas	2,040.0	189.5	1.85	102.4	103
	Sorter Room	650.0	60.4	9.3	6.5	7
	Work room	120.0	11.1	9.3	1.2	1
	Office for Branch Manager	120.0	13.9	9.3	1.5	2
	Office for Branch Librarian	96.0	11.1	9.3	1.2	2
	Office for Borrower Services	96.0	8.9	9.3	.9	1
	Children's Staff Work Room	240.0	22.2	9.3	2.4	3
	Information Staff Work Room	240.0	22.2	9.3	2.4	3
	Work Room Storage	96.0	8.9	46	.19	1
	Work Room Shipping/Receiving	96.0	8.9	46	.19	1
	Staff Break Room	360.0	33.4	1.85	1.8	2
	Staff Coat/Locker Room	72.0	6.7	1.85	3.6	4
	Maintenance Room	48.0	4.5	46	.1	1
	Equipment/Telecommunications	72.0	6.7	46	.14	1
	<b>Total Occupant Load</b>					<b>760</b>

## 10. Sanitary Facilities

### 10.1 Normal Day-to-day Operation of the Whole Building (OBC 3.7.4.2)

PLUMBING REQUIREMENT	# of Persons	Total # of W.C. Female	Total # of W.C. Male	W.C.	Urinals	Lavatories
Code reference		Table 3.7.4.3.A (3 plus 1 for each additional increment of 50 persons of each sex in excess of 50)			3.7.4.2(3)	3.7.4.2 (5)
Total Occupant Load	760					
Female 50%	380	10		10	--	6
Male 50%	380		10	3	7	6
Total Required		10	10	13	7	12

## 5.0 Accessibility – AODA Requirements

The Accessibility for Ontarians with Disabilities Act (AODA), previously known as Bill 118, is now a statute of Ontario after receiving Royal Assent by Ontario's Lieutenant Governor on June 13, 2005. The Act, introduced by the Ontario Ministry of Citizenship and Immigration, was designed to achieve a totally barrier-free Ontario by 2025. The AODA encompasses a full range of disabilities, including physical, sensory, hearing, mental health, developmental and learning disabilities. Selected areas of the AODA requirements are as follows and will be incorporated into design of the New Scugog Memorial Public Library.

### 5.1 Access and Circulation:

#### Exterior:

- Firm, non-slip level entrance, joints less than 6W
- Sidewalk width – 1675
- Passage height free of obstructions
- Size of HC parking space – 5385L X 3660W, International symbol of accessibility
- Passenger loading zone to be provided within 30m of entrance.
- Safe pedestrian zone to be provided. Min. 2000W by length of loading space.
- Entrance canopy, detectable warning surface in front of doors

#### Interior:

- Entrance doors – min. 915W for 860 clear, double doors 810W, Power assisted with decals
- Interior doors – 860W clear, lever type hardware
- Vestibule – 2135 apart, level grate
- Door hardware – 915-1100H, lever type, clear space of 600 on the pull side
- Thresholds – bevelled and less than 13H
- Waiting space for 2 wheelchairs/scooters in lobby
- Aisle Routes – 1675 for 2 wheelchairs to pass
- Library shelving – 915 – 1065W
- Turnstiles/security gates – 860W

### 5.2 Interior Amenities:

#### Washrooms and Toilet Facilities:

- Automatic door opener to family washroom
- Baby Change Table – 865H
- 1500 clear with a min. dimension of 1700
- Door opening – 860W clear
- Height of WC – 430 – 860H
- Side Grab Bar – L type 760L X 760H, Back Grab Bar – horizontal 600L 230H
- Coat hook, shelf, accessories 465 – 1200H



- automatic faucets preferred – or lever type
- Vanity height 760-840H, knee space 760X X 735H, tilted mirror, lighting above mirror
- Accessible stalls – 1675 X 1500D, D type pulls

**Accessible Kitchenettes and Work Surfaces:**

- One lowered counter section 765W X 840H. Clear knee space 700H X 480D
- Lockers/Mail slots – bottom shelf 460-1220H
- D type hardware pulls

**Drinking Fountain:**

- Off traffic route, 769-915h with 700H knee space, operable by one hand
- Min. 200 projection

**Signage:**

- Exterior: Legible from Water Street, sans-serif on contrasting background
- Universal pictograms or icons, 1370 – 1525H
- Letters 25H with contrasting background, Braille below the info

**Lighting:**

- 100 lux at main entrance, 30 lux at pathways, 50 lux at parking areas
- 200 lux at 915H in stack areas
- Lighting fixtures – avoid direct glare with an even distribution at floor level

**Materials and Finishes:**

- Floor surface material – non-slip and low glare
- Material change in flooring creates different impact sounds

**Interior Systems and Controls:**

- Fire alarms loud and distinct supplemented by visual alarms
- Mounting height of controls 1000 – 1100H

## **6.0 Environmental Considerations**

### **6.2 LEED Principles:**

The design of the new and expanded Milliken Mills Library should respond to climatic and environmental conditions taking into consideration natural resources, energy conservation and preservation of the global environment through the use of sustainable products. LEED Certification exemplifies these principles of conservation and sustainability and should be an integral part of the design and operation of the new library.

LEED stands for Leadership in Energy and Environmental Design. Over the past decade, LEED has become the top standard for environmental and healthy building in Canada providing a comprehensive building rating system based on proven standards and strategies. The library should embrace the LEED approach which covers over 69 different aspects of building and design.

Some of these principles are outlined below.

- Site sensitive design through planting to control erosion, sedimentation, storm water management and light pollution. Care should be taken to prevent soil erosion, and sedimentation that carries the accumulated storm water to off site water sources.
- On site bicycle storage, access to public transportation and reduced parking capacity.
- Reduction of heat island effect through landscaping, vegetative roof technologies and reflecting roof material.
- Indoor water use reduction and conservation through dual flush toilets, waterless urinals and efficient faucets and showerheads.
- Heat reclaim systems to provide radiant heat in flooring systems.
- Energy conservation and optimize energy performance. Energy efficient windows, heat pumps, grey-water heat recovery, automated energy monitoring, efficient lighting and appliances will make the new library as energy efficient as possible.
- Alternative energy sources such as geo-thermal ground source heat pump, solar thermal and photovoltaic cells to generate electricity.
- Local and regional materials. Preference should be given to locally manufactured and extracted/harvested materials.
- Recycling and construction waste diversion. Quality building products such as insulation and flyash in concrete made from waste materials should be used to reduce waste thrown into landfills as well as the use of local materials to reduce the burning of fuel in transport.
- Indoor air quality control, monitoring and elimination of ozone-depleting chemicals. The new library should not use adhesives, sealants, paints or other materials which contain harmful chemicals such as formaldehyde or PVC, or which offgas volatile organic compounds (VOCs). An effective ventilation systems will provide a healthy building.
- Green building materials approved by ECOLOGO and FSC Certified Wood Products.
- Building operations control systems to provide optimum setbacks and monitor optimal energy performance.
- Building maintenance and commissioning to ensure that systems are operational as intended in the design and installation as well as the use of Green Seal approved cleaning supplies are used in the maintenance plan for the new library.