



10-Year Facilities Plan

Facility Assessment Report (A Background Report to the Final Study Report)

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Submitted By:
AECOM Canada Architects Ltd.
Markham, ON
www.aecom.com

In association with:
dmA Planning & Management Services
Toronto, ON
www.dmaconsulting.com

**City of Pickering
Library Facility Assessments**

A.0 Central Library

One The Esplanade

November 2009



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Executive Summary: Central Library

Central Library

Location: One The Esplanade

Original Construction: 1990

Number of Storeys: 2

Gross Floor Area: 31000 SF

OBC Classification: A2

The facility is part of the main Civic Centre building and includes the main library, study areas, meeting rooms, staff areas, auditorium and support spaces. In general, building systems were found to be in fair to good condition and well maintained. The exception is the exterior masonry which includes a manufactured stone product that is exhibiting hairline cracks and spalling at several locations.

Capital Replacement Cost

The estimated replacement cost for the facility in 2008 dollars follows. The amount includes, design, engineering, approvals, construction, contingency and GST. Non-fixed components, such as program and maintenance equipment, supplies, furnishings, communications, IT and security systems are excluded.

31,000 sq ft x \$350/sq ft = \$10.85 million

Recommended Repairs/Replacements

Following is a summary of recommended repairs/replacements and budget amounts, listed for five year milestones over the next twenty years. Budget amounts include design, engineering, approvals, construction, contingency and GST. Repairs respond to life safety and accessibility deficiencies, based on requirements of the Ontario Building Code and the Ontarians with Disabilities Act. Replacements are recommended as systems/components reach the end of their useful life.

Life cycles for building and components are based on Building Owners and Managers Association (BOMA) standards and Protocols for Building Condition Assessments published by Public Works and Government Services Canada. Costs are derived from life cycle analysis data for Municipal facilities of similar size, complexity and program accommodation.

Horizon	Budget
Year 1	\$319,000
Year 5	\$365,000
Year 10	\$545,000
Year 15	\$250,000
Year 20	\$765,000
TOTAL	\$2,244,000

Building Systems

Following are descriptions building systems. Unless otherwise noted systems are in fair to good condition with action items identified in detail in the subsequent section of the report.

Structure

The structure of the building is concrete framing on concrete foundations. Generally the components exposed to view appear to be sound and in good condition.

Envelope

The envelope includes inverted, ballasted sections (original) and built-up roofing (2009). Planted roof is also being planned.

Walls include brick masonry and Arriscraft manufactured stone masonry units. Deterioration of both types of masonry is evident at several locations on the elevations.

Windows are fixed units in thermally broken prefinished aluminum frames and appear to be performing as intended. Doors and hardware are being maintained and appear in good condition, except for the main entry where the rotating door is reported to function intermittently. The swing doors adjacent to the main entry door are required to be rehung to swing with prevailing wind.

The glazing and framing in the stair towers is single pane in prefinished steel frames. The assembly is deteriorated due to repeated freeze-thaw action.

Interior

Interior finishes are in fair to good condition and include lay-in tile ceiling (in the process of being replaced), ceramic tile and carpet, and painted drywall. The west study room is reported to be difficult to moderate temperature. Relocation of the room to the interior of the floor plate is recommended.

Mechanical

The hot water plant provides heat through coils through the air distribution system. Chilled medium is distributed through the same system for facility cooling. Sprinkler and plumbing systems including fixtures appear in good condition.




Electrical




Electrical systems are in good condition. A 3P 4W service is provided using Westinghouse, EATON and Square D equipment.


The fire alarm system, emergency lighting and exit signage appear functional and in good condition. Components are recommended to be reviewed monthly and replaced as required.




Recommended Repairs / Replacements


Recommended repairs and replacements follow with budgets and horizons identified. Photographs of particular conditions are referenced where applicable.

Year 1	Cost	Photo
Arrange for survey of designated substances.	30,000	-
Roofing replacement (2010 phase) (Green Roof)	270,000	
Annual envelope maintenance - recaulk joints.	8,000	
Repoint loose mortar and replace loose masonry units.	30,000	

Year 1	Cost	Photo
<p>Fire stop openings in walls and ceilings around mechanical, electrical, janitorial and other service rooms. Openings are routinely made for IT cabling and other system retrofits.</p>	1,000	
<p>Conduct assessment to quantify envelope deficiencies – air/vapour retardant breaches appear to be contributing to the ongoing deterioration of the masonry. The manufactured stone masonry is also to be surveyed to determine details that need to be revised to reduce / eliminate deterioration.</p>	-	
<p>Repair / replace main entry doors.</p>	80,000	
<p>Year 1 Total</p>	<p>\$319,000</p>	

Year 5	Cost	Photo
Reseal / repair skylights.	125,000	
Modify lobby flooring to increase sound absorbency.	40,000	-
Refinish interior walls.	80,000	
Relocate study room.	120,000	
Year 5 Total	\$365,000	

Year 10	Cost	Photo
Install screen around second floor light well.	125,000	
Replace carpet.	80,000	-
Recaulk exterior joints.	40,000	-
Modify HVAC system to increase comfort levels in staff areas.	100,000	
Replace emergency and exit lights.	20,000	-
Masonry repairs.	180,000	
Year 10 Total	\$545,000	

Year 15	Cost	Photo
Repair windows and frames for stair towers.	120,000	
Masonry maintenance .	30,000	-
Weatherstrip, caulking.	20,000	-
Refinish interior walls.	80,000	-
Year 15 Total	\$250,000	
Year 20	Cost	Photo
Roofing Maintenance	120,000	-
Masonry Maintenance	30,000	-
Weatherstrip, caulking	20,000	-
Skylight replacements.	250,000	-
Millwork repairs/replacements	180,000	-
Allow for updates to washroom fixtures and accessories.	45,000	-
Door and hardware repairs / replacements.	120,000	-
Year 20 Total	\$765,000	

Energy and Environmental Recommendations

Following are recommendations for increasing the energy and environmental performance of building systems. Categories include:

Water Conservation

Energy

Materials

Indoor Environment Quality

Water Conservation

- automatic flush valves for urinals and water closets reduce water consumption and increase operating life of fixtures

Energy

- heat recovery coils reduce energy required to heat domestic hot water
- heat recovery components for both water and air systems improve energy efficiency and reduce wear on plant components that run less
- upgrading air systems and space allocations – recommend relocation of the west study area on the first floor.
- integrated solutions are more effective; for example, providing more daylight through thermally broken windows with low-emissivity treatment and argon, and finishing spaces with lighter colours will allow for less electrical light to be used; skylights are examples and are in use
- LED light fixtures are recommended to be considered as they become more competitive in cost. Items such as exit lights are currently available.

Materials

- carpet tile is recommended at replacements

Indoor Environment Quality

- daylighting through skylights is encouraged to be continued
- rebalancing internal ventilation is recommended due to elimination of openings through second floor that were part of the original design and have since been infilled.

End

**City of Pickering
Library Facility Assessments**

B.0 Petticoat Creek Branch

470 Kingston Road

November 2009



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Executive Summary: Petticoat Creek

Library/Community Centre

Location: 470 Kingston Road

Original Construction: 2001

Number of Storeys: 1

Gross Floor Area: 12,000 SF

OBC Classification: A2

The facility includes a branch library, multi-purpose community room and a suite for youth activities. In general, building systems were found to be in fair to good condition and well maintained. The exception is the report of mold originating from the north end of the east exterior (sloped) sloped wall, and in other locations within the building. Staff report that an independent materials testing agency (Trow) was retained to confirm the locations and types of mold. It is understood that the City will be proceeding with measures to remove the mold.

Capital Replacement Cost

The estimated replacement cost for the facility in 2009 dollars follows. The amount includes, design, engineering, approvals, construction, contingency and GST. Non-fixed components, such as program and maintenance equipment, supplies, furnishings, communications, IT and security systems are excluded.

12,000 sq ft x \$380/sq ft =

\$ 4.56 million

Recommended Repairs/Replacements

Following is a summary of recommended repairs/replacements and budget amounts, listed for five year milestones over the next twenty years. Budget amounts include design, engineering, approvals, construction, contingency and GST. Repairs respond to life safety and accessibility deficiencies, based on requirements of the Ontario Building Code and the Ontarians with Disabilities Act. Replacements recommended as systems/components reach the end of their useful life.

Life cycles for building and components are based on Building Owners and Managers Association (BOMA) standards and Protocols for Building Condition Assessments published by Public Works and Government Services Canada. Costs are derived from life cycle analysis data for Municipal facilities of similar size, complexity and program accommodation.

Horizon	Budget
Year 1	\$ 51,000
Year 5	\$556,000
Year 10	\$295,000
Year 15	\$170,000
Year 20	\$539,000
TOTAL	\$1,611,000

Building Systems

Following are descriptions building systems. Unless otherwise noted systems are in fair to good condition with action items identified in detail in the subsequent section of the report.

Structure

The structure of the building is steel framing on concrete foundations. Generally the components exposed to view appear to be sound and in good condition.

Envelope

The envelope includes built-up roofing which has been repaired in several locations since the building was opened. The gravel topping the roofing assembly appears to be migrating from the upper portions of the roof planes to lower ones and is expected to continue to do so. Measures will need to be taken to prevent the build-up of excessive amounts of gravel at the lower levels.

Walls include wood strip detailing and panels, an exterior insulation finishing system and stone masonry. The wood is weathered and due for refinishing and sealing to prevent spitting and checking. Similar treatment of the wood strip screens around the rooftop equipment is also required. The exterior insulation finishing system (EIFS) is reported to have been punctured at the north end of the east exterior wall. This has resulted in mold forming in the wall cavity. The mold type has been identified in an independent report by Trow and the City is in the process of preparing measures for the removal of the mold. Minor cracks in the EIFS are apparent in other locations of the envelope. It is recommended these be monitored seasonally for indications of moisture infiltration.

Windows are fixed units in thermally broken prefinished aluminum frames and appear to be performing as intended. Doors and hardware are being maintained and appear in good condition.

Interior

Interior finishes are in fair to good condition and include slate, ceramic floor tile and carpet. Wall finishes include painted drywall in fair condition. Locations in staff areas of the library are worn due to impacts from book trolleys. Staff are considering installation of wainscot to increase the durability of the walls at these locations. Ceilings include lay-in acoustic tile, acoustic absorption panels and painted gypsum board. Lay-in tile panels in several locations are stained due to prior roof leaks which have since been repaired. Replacement of the tiles is in process. Staff report that water infiltration from roof leaks at the west end of the kitchen has also resulted in the discovery of mold in the cabinetry. Staff is developing a program for removal of the mold and any damaged materials.

Mechanical

The heating plant includes a LAARS Mighty Therm boiler for service heating system hot water. Perimeter radiation units include conventional baseboard units and Runtal units fixed to steel columns along the framing of the west elevation. Rooftop HVAC units include McQuay and Aerotherm equipment.

Sprinkler and plumbing systems including fixtures appear in good condition.




Electrical

Electrical systems are in good condition. A 400A 347/600V 3P 4W service is provided using Siemens equipment. Lighting includes HID fixtures in high bay areas and compact fluorescent in good condition.

The fire alarm system, emergency lighting and exit signage appear functional and in good condition. Components are recommended to be reviewed monthly and replaced as required.

Recommended Repairs / Replacements

Recommended repairs and replacements follow with budgets and horizons identified. Photographs of particular conditions are referenced where applicable.

Year 1	Cost	Photo
Arrange for survey of designated substances. (Staff report that mold has been documented).	10,000	-
Annual roofing maintenance, including redistribution of gravel and monitoring for stresses in roofing assembly at valleys and adjacent to mechanical equipment.	10,000	
Annual envelope maintenance - recaulk joints.	5,000	
Refinish and seal exterior wood strip detailing and panels.	25,000	

Fire stop openings in walls and ceilings around mechanical, electrical, janitorial and other service rooms. Openings are routinely made for IT cabling and other system retrofits.

1,000



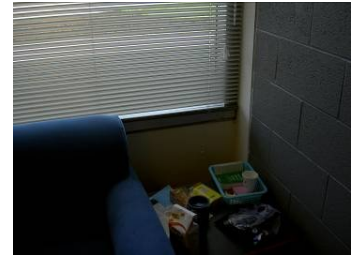



Remove materials with mold from kitchen.
*Cost to be determined from independent survey report identifying extent and types of mold.


*





Year 1 Total

\$51,000

Year 5	Cost	Photo
Repair library staff area walls and add wainscot.	25,000	
Recaulk exterior.	5,000	
Repaint walls and drywall ceilings. Refinish worn doors.	40,000	
Replace carpeting.	36,000	-
Replace east exterior wall. Include for new east entry vestibule.	450,000	
Year 5 Total	556,000	

Year 10	Cost	Photo
Recaulk exterior.	5,000	-
Refinish and seal exterior wood strip detailing and panels.	25,000	-
Replace rooftop units and related components	240,000	
Replace worn washroom partitions, accessories and related components	25,000	
Year 10 Total	295,000	

Year 15	Cost	Photo
Recaulk exterior.	5,000	-
Refinish and seal exterior wood strip detailing and panels.	25,000	-
Repair doors, windows and replace worn hardware and weather stripping.	40,000	
Replace blinds.	100,000	-
Year 15 Total	170,000	

Year 20	Cost	Photo
Recaulk exterior.	5,000	-
Refinish and seal exterior wood strip detailing and panels.	25,000	-
Replace roofing, flashings and related components.	240,000	-
Repaint walls and drywall ceilings.	40,000	-
Replace carpeting.	36,000	-
Replace worn millwork.	45,000	-
Replace worn components of perimeter radiant heating systems.	120,000	
Replace worn plumbing fixtures And related components.	16,000	-
Replace exit and emergency lighting.	12,000	-
Year 20 Total	539,000	

Energy and Environmental Recommendations

Following are recommendations for increasing the energy and environmental performance of building systems. Categories include:

Water Conservation

Energy

Materials

Indoor Environment Quality

Water Conservation

- automatic flush valves for urinals and water closets reduce water consumption and increase operating life of fixtures

Energy

- heat recovery coils reduce energy required to heat domestic hot water
- heat recovery components for both water and air systems improve energy efficiency and reduce wear on plant components that run less
- integrated solutions are more effective; for example, daylighting and use of lighter interior colours allows for less electrical light to be used; this approach is generally followed for the library and multi-purpose space areas; adjustments to the east corridor could be considered when the east exterior wall is replaced
- LED light fixtures are recommended to be considered as they become more competitive in cost. Items such as exit lights are currently available.

Materials

- Durable finishes for floors are recommended; reductions in carpet are generally recommended in hard-wearing areas (for example, where book carts travel); carpet tile is also recommended; this allows for replacement of worn tiles only in high-traffic routes

Indoor Environment Quality

- the replacement of the east exterior wall and monitoring of roofing will mitigate moisture infiltration
- the continued cultivation of trees and shrubs along the west and south elevations will assist in moderating interior space temperatures
- ducting is recommended to be reviewed and cleaned every two years

End

**City of Pickering
Library Facility Assessments**

C.0 Claremont Branch

4941 Old Brock Road

November 2009



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Executive Summary: Claremont

Library Branch

Location: 4941 Old Brock Road

Original Construction: 2003

Number of Storeys: 1

Gross Floor Area: 1800 SF

OBC Classification: A2

The facility includes a branch library as part of a larger complex. In general, building systems were found to be in fair to good condition and well maintained. The exception is the cementitious panels at the base of the brick masonry which have deteriorated, resulting in further deterioration of the materials behind the panels.

Capital Replacement Cost

The estimated replacement cost for the facility in 2008 dollars follows. The amount includes, design, engineering, approvals, construction, contingency and GST. Non-fixed components, such as program and maintenance equipment, supplies, furnishings, communications, IT and security systems are excluded.

1800 sq ft x \$350/sq ft = \$630,000

Recommended Repairs/Replacements

Following is a summary of recommended repairs/replacements and budget amounts, listed for five year milestones over the next twenty years. Budget amounts include design, engineering, approvals, construction, contingency and GST. Repairs respond to life safety and accessibility deficiencies, based on requirements of the Ontario Building Code and the Ontarians with Disabilities Act. Replacements recommended as systems/components reach the end of their useful life.

Life cycles for building and components are based on Building Owners and Managers Association (BOMA) standards and Protocols for Building Condition Assessments published by Public Works and Government Services Canada. Costs are derived from life cycle analysis data for Municipal facilities of similar size, complexity and program accommodation.

Horizon	Budget
Year 1	\$18,300
Year 5	\$14,000
Year 10	\$14,000
Year 15	\$5,000
Year 20	\$14,000
TOTAL	\$65,000

Building Systems

Following are descriptions building systems. Unless otherwise noted systems are in fair to good condition with action items identified in detail in the subsequent section of the report.

Structure

The structure of the building is timber framing on masonry on concrete foundations. Generally the components exposed to view appear to be sound and in good condition.

Envelope

The envelope includes prefinished metal roofing, flashings and related components. Walls include brick masonry. Windows are fixed units in thermally broken prefinished aluminum frames. Doors and hardware are being maintained and appear in good condition. The foundation walls include cementitious panels which have deteriorated at exterior corners and at the base of exterior doors. Repairs to these details are required.

Interior

Interior finishes are in good condition and include lay-in acoustic tile, painted concrete block and carpet.

Mechanical

The heating system includes a perimeter radiant hot water system that is integrated with the lay-in tile ceiling system. Adjustments to the support splines for the radiant heating panels are required. Plumbing systems including fixtures appear in good condition.





Electrical

Electrical systems are in good condition. A branch of the facility 3P 4W service is provided using Siemens equipment.

The fire alarm system, emergency lighting and exit signage appear functional and in good condition. Components are recommended to be reviewed monthly and replaced as required.

Recommended Repairs / Replacements

Recommended repairs and replacements follow with budgets and horizons identified. Photographs of particular conditions are referenced where applicable.

Year 1	Cost	Photo
Arrange for survey of designated substances.	10,000	-
Annual envelope maintenance - recaulk joints.	2,000	
Repair cementitious panels.	5,000	
Adjust radiant panels.	1,000	
Refinish utility pipe.	300	
Year 1 Total	\$18,300	

Year 5	Cost	Photo
Replace carpet.	12,000	-
Recaulk exterior joints.	2,000	-
Year 5 Total	\$14,000	
Year 10	Cost	Photo
Repaint interior.	12,000	-
Recaulk exterior joints.	2,000	-
Year 10 Total	\$14,000	
Year 15	Cost	Photo
Repair millwork.	2,000	-
Recaulk exterior joints.	2,000	-
Repair / replace washroom components.	1,000	-
Year 15 Total	\$5,000	
Year 20	Cost	Photo
Repaint interior.	12,000	-
Recaulk exterior joints.	2,000	-
Year 20 Total	\$14,000	

Energy and Environmental Recommendations

Following are recommendations for increasing the energy and environmental performance of building systems. Categories include:

Water Conservation

Energy

Materials

Indoor Environment Quality

Water Conservation

- low flow water closets reduce water consumption and increase operating life of fixtures

Energy

- heat recovery components for water systems improve energy efficiency and reduce wear on plant components that run less
- LED light fixtures are recommended to be considered as they become more competitive in cost. Items such as exit lights are currently available.

Materials

- consider carpet tile at change-out

Indoor Environment Quality

- open concept allows for daylighting

End

**City of Pickering
Library Facility Assessments**

D.0 Whitevale Branch

475 Whitevale Road

November 2009



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Executive Summary: Whitevale

Library Branch

Location: 475 Whitevale Road

Original Construction: 1910 (est)

Number of Storeys: 1 + attic

Gross Floor Area: 600 SF

OBC Classification: A2

The facility includes a library branch on the first floor and storage space in the attic. In general, building systems were found to be in fair to good condition and well maintained. The facility includes a barrier-free washroom but the main entry is not designed to be accessible.

Capital Replacement Cost

The estimated replacement cost for the facility in 2009 dollars follows. The amount includes, design, engineering, approvals, construction, contingency and GST. Non-fixed components, such as program and maintenance equipment, supplies, furnishings, communications, IT and security systems are excluded.

600 sq ft x \$450/sq ft = \$ 270,000

Recommended Repairs/Replacements

Following is a summary of recommended repairs/replacements and budget amounts, listed for five year milestones over the next twenty years. Budget amounts include design, engineering, approvals, construction, contingency and GST. Repairs respond to life safety and accessibility deficiencies, based on requirements of the Ontario Building Code and the Ontarians with Disabilities Act. Replacements recommended as systems/components reach the end of their useful life.

Life cycles for building and components are based on Building Owners and Managers Association (BOMA) standards and Protocols for Building Condition Assessments published by Public Works and Government Services Canada. Costs are derived from life cycle analysis data for Municipal facilities of similar size, complexity and program accommodation.

Horizon	Budget
Year 1	\$10,000
Year 5	\$19,500
Year 10	\$19,000
Year 15	\$14,500
Year 20	\$63,000
TOTAL	\$126,000

Building Systems

Following are descriptions building systems. Unless otherwise noted systems are in fair to good condition with action items identified in detail in the subsequent section of the report.

Structure

The structure of the building is timber framing. Foundation type and condition were not accessible. Generally the components exposed to view appear to be sound and in fair to good condition.

Envelope

The envelope includes asphalt shingle roofing installed in 2009. Foundations are covered with a cementitious parging, deteriorated at exterior corners. Walls above include painted wood siding.

Windows are fixed painted wood units in fair condition. Doors and hardware are being maintained and appear in fair condition.

Interior

Interior finishes are in good condition and include painted drywall and carpet. The washroom floor is finished with ceramic tile. The attic is unfinished wood plank.

Mechanical

The heating is electric baseboard. Hot water is provided by a 5 IG electric tank. The building is serviced by a well and water purification system. A septic system is also in place. Water and sanitary systems are reported to be functional. Fire extinguishers are provided.




Electrical

Electrical systems are in good condition. A 125A single phase service is provided. Exit and emergency lighting are also provided and in good condition. Lighting is fluorescent and incandescent in fair condition.

Recommended Repairs / Replacements

Recommended repairs and replacements follow with budgets and horizons identified. Photographs of particular conditions are referenced where applicable.

Year 1	Cost	Photo
Arrange for survey of designated substances.	5,000	-
Repair parging.	5,000	
Year 1 Total	\$10,000	

Year 5	Cost	Photo
Review timber framing and foundations.	3,000	-
Repaint and recaulk exterior.	10,500	
Repaint walls and drywall ceilings.	4,000	
Replace carpeting.	2,000	-
Year 5 Total	\$19,500	
Year 10	Cost	Photo
Repaint and recaulk exterior.	10,500	-
Refinish windows.	8,500	
Year 10 Total	19,000	

Year 15	Cost	Photo
Repaint and recaulk exterior.	10,500	-
Repaint walls and drywall ceilings.	4,000	-
Year 15 Total	14,500	
Year 20	Cost	Photo
Repaint and recaulk exterior.	10,500	-
Repaint walls and drywall ceilings.	4,000	-
Replace roofing, flashings and related components.	10,000	-
Repaint walls and drywall ceilings.	4,000	-
Replace carpeting.	2,000	-
Replace worn millwork.	1,000	-
Repair door hardware and Replace weatherstripping.	1,000	-
Replace worn plumbing fixtures and related components.	1,000	-
Replace well systems.	18,000	-
Replace septic system components and field.	25,000	-
Replace exit and emergency lighting.	1,000	-
Year 20 Total	63,000	

Energy and Environmental Recommendations

Following are recommendations for increasing the energy and environmental performance of building systems. Categories include:

Water Conservation

Energy

Materials

Indoor Environment Quality

Water Conservation

- Low flow water closet reduces water consumption and increase operating life

Energy

- An instantaneous hot water heater uses energy only when hot water is demanded
- Baseboard heaters are a low technology approach to heating and require minimal maintenance; conversion to a hot water radiant system linked to a geo-thermal well is possible and would provide heating from on-site resources; the payback would be in the order of 10 – 15 years. A water conductivity test is recommended for the soil on site to determine whether there is adequate moisture for optimum energy transfer in a geo-thermal system
- integrated solutions are more effective; for example, daylighting and use of lighter interior colours allows for less electrical light to be used; this approach is generally followed for the library branch
- LED light fixtures are recommended to be considered as they become more competitive in cost. Items such as exit lights are currently available.

Materials

- Durable finishes for floors are recommended; carpet tile is also recommended; this allows for replacement of worn tiles only in high-traffic routes

Indoor Environment Quality

- the facility is not mechanically ventilated; a facility of this type designed today would require operable windows or a mechanical ventilating system; it is noted that the washroom exhaust fan does provide for air movement through the first floor when in operation

End

**City of Pickering
Library Facility Assessments**

E.O Greenwood Branch

3540 Westney Road

November 2009



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Executive Summary: Greenwood

Library Branch

Location: 3540 Westney Road

*Original Construction: 1860
(renovated 1980)*

Number of Storeys: 1 + basement

Gross Floor Area: 1200 SF

OBC Classification: A2

The facility includes a library branch on the first floor and storage space in the basement. In general, building systems were found to be in fair to good condition and well maintained.

The facility includes a barrier-free washroom and exterior ramp but the main entry is not designed to be accessible.

Capital Replacement Cost

The estimated replacement cost for the facility in 2009 dollars follows. The amount includes, design, engineering, approvals, construction, contingency and GST. Non-fixed components, such as program and maintenance equipment, supplies, furnishings, communications, IT and security systems are excluded.

1200 sq ft x \$650/sq ft = \$ 780,000

Recommended Repairs/Replacements

Following is a summary of recommended repairs/replacements and budget amounts, listed for five year milestones over the next twenty years. Budget amounts include design, engineering, approvals, construction, contingency and GST. Repairs respond to life safety and accessibility deficiencies, based on requirements of the Ontario Building Code and the Ontarians with Disabilities Act. Replacements recommended as systems/components reach the end of their useful life.

Life cycles for building and components are based on Building Owners and Managers Association (BOMA) standards and Protocols for Building Condition Assessments published by Public Works and Government Services Canada. Costs are derived from life cycle analysis data for Municipal facilities of similar size, complexity and program accommodation.

Horizon	Budget
Year 1	\$13,000
Year 5	\$150,000
Year 10	\$100,000
Year 15	\$65,000
Year 20	\$188,000
TOTAL	\$516,000

Building Systems

Following are descriptions building systems. Unless otherwise noted systems are in fair to good condition with action items identified in detail in the subsequent section of the report.

Structure

The structure of the building is timber roof framing on loadbearing brick and stone masonry. The masonry foundation walls are generally not visible within the basement due to drywall cladding that has been applied for fire rating requirements. Generally the components exposed to view appear to be sound and in fair to good condition. The exception is the west exterior which exhibits significant outward bowing. Repointing has been undertaken on the wall in its present position. The general recommendation is to monitor to wall seasonally for further cracking – an indication of movement. Review of the floor framing and roof framing interfaces with the west wall are also recommended at these times in order to determine whether the wall is moving away from the framing and compromising the integrity of the overall structure.

Envelope

The envelope includes asphalt shingle roofing which has been repaired. The siting of the building indicates exposure to westerly winds which coincides with the pattern of shingling repair. Heavier shingles are recommended when next replaced.

Brickwork is in need of replacement units and mortar repointing in several locations. An ongoing masonry maintenance program is recommended.

Windows are fixed multi-pane painted wood units in poor to fair condition. General repairs or replacements are due within 5 years. Doors and hardware are being maintained and appear in fair condition. As noted above, the main entry doors do not include power operators. The width of one door is not adequate to provide barrier-free access.

Interior

Interior finishes are in good condition and include painted drywall and carpet. The washroom floor is finished with ceramic tile. The basement includes concrete floor and drywall walls and ceiling.

Mechanical


Heating is provided by a gas fired forced air system which distributes air by duct to perimeter locations through the first floor to registers below each window. Hot water is provided by an electric hot water heater and storage tank in the basement south of the furnace. The building is serviced by a well and water purification system. A septic system is also in place. Water and sanitary systems are reported to be functional. Fire extinguishers are provided.




Electrical


Electrical systems are in good condition. A 125A single phase service is provided. Exit and emergency lighting are also provided and in good condition. Lighting is fluorescent and incandescent in fair condition.

Recommended Repairs / Replacements

Recommended repairs and replacements follow with budgets and horizons identified. Photographs of particular conditions are referenced where applicable.

Year 1	Cost	Photo
Arrange for survey of designated substances.	8,000	-
Monitor structure and masonry (annual)	5,000	
Year 1 Total	\$13,000	

Year 5	Cost	Photo
Monitor structure and masonry (annual x 4)	20,000	-
Repoint mortar and replace deteriorated brick units.	50,000	
Repair, repaint and recaulk exterior.	25,000	
Repaint walls and drywall ceilings.	25,000	
Replace carpeting.	12,000	-
Year 5 Total	\$150,000	

Year 10	Cost	Photo
Repaint and recaulk exterior.	15,000	-
Repair / restore windows.	60,000	
Monitor structure and masonry (annual x 5)	25,000	-
Year 10 Total	\$100,000	

Year 15	Cost	Photo
Monitor structure and masonry (annual x 5)	25,000	-
Repaint and recaulk exterior.	15,000	-
Repaint walls and drywall ceilings.	25,000	-
Year 15 Total	65,000	

Year 20	Cost	Photo
Monitor structure and masonry (annual x 5)	25,000	-
Repoint mortar and replace deteriorated brick units.	25,000	-
Repaint and recaulk exterior.	15,000	-
Replace roofing, flashings and related components.	25,000	-
Replace carpeting.	12,000	-
Replace worn millwork.	20,000	-
Repair door hardware and Replace weatherstripping.	5,000	-
Replace worn plumbing fixtures and related components.	2,000	-
Replace furnace, condensing unit and related components.	15,000	-
Replace well systems.	18,000	-
Replace septic system components and field.	25,000	-
Replace exit and emergency lighting.	1,000	-
Year 20 Total	\$188,000	

Energy and Environmental Recommendations

Following are recommendations for increasing the energy and environmental performance of building systems. Categories include:

Water Conservation

Energy

Materials

Indoor Environment Quality

Water Conservation

- Low flow water closet reduces water consumption and increase operating life

Energy

- An instantaneous hot water heater uses energy only when hot water is demanded
- High efficiency furnace and condensing unit; consider a geo-thermal system
- integrated solutions are more effective; for example, daylighting and use of lighter interior colours allows for less electrical light to be used; this approach is generally followed for the library branch
- LED light fixtures are recommended to be considered as they become more competitive in cost. Items such as exit lights are currently available.

Materials

- Durable finishes for floors are recommended; carpet tile is also recommended; this allows for replacement of worn tiles only in high-traffic routes

Indoor Environment Quality

- the access to the facility is recommended to be modified to include energy efficient barrier-free operator for both doors

End