STRUCTURAL & BUILDING ENVELOPE ASSESSMENT REPORT

for

King Township Municipal Offices

At

2075 King Road
King City, Ontario

Prepared for

The Corporation of the Township of King

CCI Project No: 134683
CCI Contact: Zack Salman
zacks@ccigroupinc.ca

February 4, 2014
January, 2014

The Corporation of the Township of King
Parks, Recreation and Culture Department
2075 King Road
King City, Ontario
L7B 1A1

Attention: Chris Fasciano, Director - Parks, recreation and Culture

RE: By-Law # 2013-91, Structural & Building Envelope Assessment - Various Municipal Facilities

Please find attached our report for King Township Municipal Offices.

If there are any questions or concerns, please direct them to the undersigned.

Sincerely,

CCI GROUP INC.

Zack Salman, M. Eng., BSSO
Senior Project Manager, Corporate Projects
1. INTRODUCTION

1.1 Terms of Reference
CCI Group Inc. (CCI) has been retained by The Corporation of the Township of King (CTK), Parks, Recreation and Culture Department under the By-Law # 2013-91, Structural & Building Envelope Assessment - Various Municipal Facilities. The purpose of the reports is to provide the CTK with conditional reviews of the main building components and to highlight the forecasted capital outlay required for these predominantly aging facilities over the next five (5) years.

1.2 Scope
CCI has undertaken the assignment using the standard guidelines of ASTM E-2018-08, Standard Guide for Property Condition Assessments with some exceptions. The Structural & Building Envelope Assessments (SBEAs) scope covers the following:

- Scheduling the inspections with the CTK representatives;
- Preparing simplified Questionnaires for the CTK;
- Prior to assessing the sites, reviewing historical data pertaining to the building(s) including past reports, major capital expenditure project records and associated costs, where available;
- Conducting a comprehensive visual, non-intrusive review of the building major components at nineteen (19) buildings as per the following:
  - Building Envelope (all exterior finishes, windows and doors, including roofing);
  - Structural (full visual review, including foundation walls);
  - Accessibility (full review);
  - Mechanical (HVAC and refrigeration plants, including elevators);
  - Electrical (full electrical review);
  - Interior elements;
  - Site elements (parking lots and site lighting, including grading);
  - Existing of hazardous materials (visual review - no past reports were provided);
  - Ability of the facilities to host solar panels;
  - Limitations for the re-purposing of selected buildings (Nobleton Community Hall, Schomberg Community Hall and Kettleby-Pottageville Lions Hall).

- Additional two (2) facilities were added to the portfolio review on the instruction of the CTK.
- Digital images will be taken and may be included throughout the reports to illustrate general conditions or deficiencies observed.
- Preparation and submission of reports including recommendations and prioritizing capital needs of each facility, along with related cost estimates (in 2013 dollars) and scheduling of immediate (1 to 2 years) and future needs (3 to 5 years).
1.3 Building Description

The King Township Municipal Offices is a single storey, multi-use building located at 2075 King Road, King City, Ontario.

The building includes the Township Municipal Offices (Offices, Storage Rooms, Washrooms, Lunch Room, Council Chamber and Electrical Room) and four (4) leased stores: Convenience Store, Pharmacy, Hair Salon and Pizza Pizza Restaurant (leasing agreement was provided for our reference). Total gross floor area is approximately 24,500 square feet (sf).

The building was constructed in 1979, and it has undergone major renovations since. The building is considered to be in good condition overall, since it was renovated in stages between 2000 (Council Chamber), 2006 (Clerk’s Offices), and 2010 (Mayor’s Office and Chief Administration Office).

The By-Law Office has two newer Accessible Washrooms. A listing of major expenditures and associated costs over the last five years was not provided. However, we are aware of the major
renovation/restoration occurred since the building was built. New HVAC rooftop units were installed between 2008 and 2010. Some systems were upgraded on a year-to-year as need basis. Based on service life, inherent construction detailing and/or general upkeep, most of the components remain in a good state of repair, with the exception of the roofs and the parking lot.

The building is constructed of open web steel joists on steel columns and masonry walls, installed on reinforced concrete and concrete block foundations and concrete footings. Conventional poured concrete slab-on-grade construction is used.

The exterior walls are assumed to be insulated with rigid insulation.

The sloped roofs at the north elevation are finished with sloped laminated asphalt shingles. The main roofs are low-slope flat roofs with two-ply modified bituminous system and a built-up system at the elevated roof section. All roofs have prefinished metal flashings installed.

The main heating/cooling source is by gas-fired packaged rooftop with electric cooling units, and electric unit heaters in the Vestibules. Point source and ceiling mounted exhaust fans are used throughout the building.

The domestic water service is by individual gas-fired and electric hot water tanks, located throughout the building. Drainage and waste piping are comprised of PVC and Copper pipes and PVC drains are used for all the plumbing fixtures.

The electrical Main Distribution Unit is located in the Electrical Room. The CEB main switchboard (1,200-Amp, 240-Volt, 3-phase, and 4-wire) is original, but a newer Siemens main switch for the Township Offices is also installed. The service main and distribution equipment are located at several locations in the building, generally in fair operating condition. Emergency power is provided by a newer emergency generator with emergency pack lights also installed.

There is no fire alarm system, installed in the building. Smoke alarms are installed, hard wired, and connected to the security system.

The building has numerous exits directly to grade at the north and south elevations.
2. METHODOLOGY

2.1 General
CCI attended the building on November 7, 2013 and met the Facility Supervisor (Mr. Gavin Tanner). Roof areas were accessed. After conducting the review of all building elevations, CCI personnel entered the building and conducted a room-to-room assessment. Access within ceiling space, where possible was made to understand the structural framing methods and materials. Random measurements were made with tape or wheel. Digital photos were taken throughout the review.

All major building components were assessed to determine general condition and the estimated time frame for major repair or replacement over the next five years. Costs exceeding $1,000 are included in the assessment; costs less than $1,000 are assumed to be covered under operational and maintenance budgets.

2.2 Accessibility
The intent of the review is to highlight main building and site components (parking stalls, entrances, walks, doorways, ramps, washrooms, showers, shelves, drinking fountains, elevators) that do not comply to the minimum requirements of the Ontario Building Code, 2006 (OBC), as amended, and to provide probable costs on removals of non-compliant barriers.

Although the Accessibility for Ontarians with Disabilities Act, 2005 (AODA) received Royal Assent and became law on June 13, 2005, it only addresses accessibility standards for information and communications, employment and transportation. The goal of the Act is to achieve accessibility for Ontarians with disabilities with respect to goods, services, facilities, accommodation, employment, structures and premises by January 1, 2025. The AODA's Accessible Built Environment Standard is in a final proposed format only as of July, 2010. Since the AODA Standard is not law at this time, it does not form the basis of the review.

The Corporation of Township of King has publicly indicated that they are in compliance to both the Ontarians with Disabilities Act 2001 (ODA) and the Accessibility for Ontarians with Disabilities Act, 2005 (AODA) and supports the AODA's primary goal.

All future design work should make reference to the OBC, AODA (presuming that the Regulation is in effect) and the Canadian Standards Association (CSA) Accessible Design for the Built Environment, B651-12 Standard.

2.3 Code Compliance
The assessment is not one of detailed code compliance review (historical or current version of OBC or Ontario Fire Code). However, where obvious code infractions are observed, CCI reported on them.
2.4 Building Operational Performance

The assessment is not considered an energy audit. CCI has noted areas where deficiencies occur in thermal or equipment performance however.

The building’s mechanical and electrical systems were visually reviewed during our inspection. Our inspection was limited to accessible equipment, without review of any drawings or schematics. Equipment was observed in its present operating state. Processes and performance criteria was based on visual assessment only.

Tests were not performed nor were dismantling of the systems carried out to verify the condition of the interior components of HVAC equipment. Seasonal use should be considered with regards to any comments made about the condition of any HVAC equipment.

Calculations were not made to verify the adequacy of the electrical supply, domestic hot water, or HVAC performance.

Tests were not performed on life safety systems such as fire alarm and suppression systems including sprinklers and smoke control system.

2.5 Environmental Health and Safety

The assessment is not considered a complete hazardous substance survey; surveys were not a requirement of the contract. CCI has taken note of obvious or suspected environmental issues or the need for physical testing.

2.6 Project Team

CCI Project Lead: John Kirkpatrick, B.Tech.(Arch.Sc.), MAATO, CRP, BCQ

CCI Lead Assessor: Zack Salman, M. Eng., BSSO

CCI Structural: Maziyar Bolour, P.Eng.

CCI Peer Review: Rayomand Golwala, P.Eng

Administration: Deirdre Roe, B.A.Tech, Dipl. Arch. Tech, FMP

2.7 Available Documentation

Available documentation was requested prior to the assessment to aid CCI in the familiarity of the facility. Documentation for this site was limited and includes:

- Questionnaire was not completed by Facility Supervisor.
3. EXECUTIVE SUMMARY

3.1 General

The King Township Municipal Offices is a single storey building. The design has Municipal Offices with Service Rooms, Administration area, Meeting Rooms and Lunch Room, in addition to four rental Stores (Convenience Store, Hair Salon, Pharmacy and a Pizza Pizza Store). The building has undergone significant renovations since it was built in 1979.

The main building components are predominantly original with repairs or replacements conducted since 2000, including a 2006 major renovation and a 2010 building modification and providing Accessible Washrooms. Based on service life, inherent construction detailing and/or general upkeep, all major components are presently in a state-of-good repair. However, some capital outlay is required to ensure the viability of this facility. The building is therefore considered to be in good-to-fair condition overall.

The main roof and the parking lots of the building are in poor condition.

Our opinions of probable costs are estimated to be $929,000 with immediate (1 to 2 years) costs at $398,000 and future (3 to 5 years) costs at $531,000. Refer to Section 5.0. The summaries of main component concerns are as follows:

3.2 Building Envelope and Roofing

Deteriorated mortar joints at the brick and stone veneer walls and columns require repairs in the short term. Exterior Insulation Finishing System (EIFS) walls are in overall good condition. However, damaged sections at the Pizza Store require refurbishment.

Aluminum clad walls at the roof level are original with damaged sections; complete replacement in the near future is recommended.

Exterior steel doors have corroded frames and their thresholds crating a trip hazard. Allow for modifications and for door replacement in the short term. Aluminum glazed doors are newer and in good condition.

Aluminum framed single and double glazed windows are in fair-to poor operating condition and need replacement in the near future. Windows, installed at roof level with single glazing are leaking to the interior and require replacement in the short term.

The sloped laminated asphalt shingle roofs are newer and are in good condition.

Cedar shakes around the building are deteriorated, and damaged; replacement is recommended in the short term.
Leaking flat two-ply modified bituminous and built-up with pea gravel roof systems have surpassed their life expectancy and should be repaired currently and replaced in the short term.

Aluminum and plywood soffits are installed and in good condition. However, missing section of the soffit requires replacement.

Installed prefinished eavestroughs and downpipes are in good condition. Splash pads are recommended to be installed, where missing.

### 3.3 Structural

The building structure was found to be in overall good-to-fair condition based on visual review. The original Structural design drawings were not available for review. Cracked concrete and deteriorated concrete block foundation walls require repairs in the short term.

The concrete slab-on-grade floor is covered with floor finishes, but in good condition, where exposed in the Electrical Room and the Safe Room. However, uneven floor, noted in the Chief Administration Office should be repaired.

The open web steel joists framing in the building is in good condition.

### 3.4 Accessibility

The building has barrier-free Washrooms with accessible plumbing fixtures and power operated doors; however, allowances are made for installing railings at all accessible ramps. Designated barrier-free parking stalls are provided.

### 3.5 Mechanical

The heating and cooling (packaged rooftop units) systems are in overall good condition.

Ceiling mounted and point source exhaust fans are installed throughout the building. Allow for the replacement of the older ones.

Plumbing fixtures are mainly newer, with the exception of the original fixtures in the Convenience Store; no allowance was carried (tenant’s responsibility). The newer water meter is uninsulated and no backflow preventer is installed. The sanitary and domestic water piping systems are in good-to-fair operating condition; however, sewage back-up was reported. Allow for repairs and for a backflow preventer installation.

No fire alarm system is installed, but smoke alarms are provided throughout the building and are connected to the security system. Allow for clearing a partially blocked exit door in the west section of the building and for providing a Fire Safety Plan.
The penetrations within fire rated walls and ceilings in the Electrical Room and Utility Room in the Hair Salon require immediate fire stopping. The one in the Hair Salon is tenant's responsibility.

3.6 Electrical

The electrical service and distribution components are a combination of original and upgraded and are in fair operating condition; however, a thermography scan is recommended in the short term. Allow for upgrading original equipment in the near future. Receptacles and toggle switches are functional. Broken conduits and receptacles should be replaced. Some lighting fixtures have been retrofitted in recent years. Allowances are made for general replacement of the older components (older T12 lighting fixtures and incandescent fixtures) in the short term. A 2006 gas-fired emergency generator is installed and is in good condition.

3.7 Interior Finishes

The interior finishes throughout the building are in good condition. Finishes consists of carpet, hardwood, and vinyl composites tiles (VCT) in most public areas with slab-on-grade epoxy coated concrete in the service rooms. Allow for replacement of the damaged VCT floor in the Server Room; no allowances were carried for VCT replacement in the Convenience Store (tenant's responsibility). Concrete block and steel stud gypsum board walls are also installed. T-bar ceiling tiles are installed throughout. Allow for replacement of damaged tiles and walls in the short term.

The doors, shelving, furniture, millwork, counters and cupboards are all in good condition.

3.8 Site Works

Asphaltic concrete pavement parking lots and driveways are in fair-to-poor condition. Current repairs and replacement in the near future are recommended. Settled and deteriorated sections were observed throughout.

Concrete curbs are damaged and require replacement. Settled interlocking stones and steps should be repaired at the front. Allow for repairs to the chain link fence in the near future.

Most of the exterior wall-pack light fixtures, soffit lights and light standards are operational and in good condition. Allow for replacement of three old wall mounted light fixtures.

Bollards, installed at gas meters are in need of updating. Allow for new bollards in the short term.
3.9 Hazardous Materials

Based on the age of the building, hazardous materials may be present in the following materials/components: PCB in T12 fluorescent light fixtures, lead in paint and solder plumbing joints, silica in concrete/concrete block, etc. Allowances are made to provide a Designated Substance Survey (DSS), complete with testing, to identify all locations and conditions of suspected hazardous materials.

We observed that the VCT tiles in the Convenience Store are original to the building; therefore they may contain asbestos. This should be considered when the flooring is being replaced.

3.10 Ability to Host Solar Panels

To get the most from position-fixed (or seasonally adjusted) photovoltaic or thermal solar panels, they shall be pointed in the direction that captures the most sun. Solar panels should always face true south in the Northern Hemisphere.

The King Township Municipal Offices roofs are flat; therefore the orientation is in favour.

The King Township Municipal Offices is a steel structure. A complete study and testing of the wood framing characteristics shall be conducted, in order to determine the ability for the structure to accommodate the needed load. Ability of using the generating power for electricity, or hot water in the building needs to be confirmed, prior to the project initiation.

3.11 General Comments

It is recommended that CTK, presuming that all facilities remain in the portfolio, execute the following:

- Complete a proper Designated Substance Survey (DSS) to identify hazardous materials including asbestos due to the age of the facility;
- Determine viability of facilities through user studies;
- Address all life safety issues as indicated above;
- Prepare existing as-built building drawings for all disciplines (Architectural, Structural, Electrical, Mechanical and Site);
- Prepare a database of all building components over a minimum 20-year window using life cycle cost analysis and Facility Condition Indexes;
- Provide continuous updating of facility portfolio;
- Establish standard construction means/methods/materials for all facilities;
- Add all site amenities, structural, electrical, infrastructure and finish components to expenditure planning, and;
- Establish maintenance practices for all site and building components.
4. STRUCTURAL & BUILDING ENVELOPE ASSESSMENT

4.1 Building Envelope and Roofing

Exterior Walls

The main exterior walls are finished with a combination of stone veneer, brick veneer and Exterior Insulation Finishing System (EIFS). Deterioration and failed mortar joints, in addition to damaged sections were noted at localized areas. Allow for repairs in the short term. The walls are assumed to have rigid insulation layers.

Stone column bases and stone sills at the front require tuck-pointing repairs.

The original aluminum clad walls at roof level are damaged and deteriorated. It is recommended to replace the clad walls in the near future.

The new vinyl siding at the shingle roofs on the north elevation are in good condition. Metal clad wall around the window on the south elevation is in fair condition.
Windows

The 2006 vinyl framed windows are fitted with double glazed operable awnings and are in good condition.

The original aluminum framed windows fitted with double glazed sliders (Office area) and with fixed single glazed (Stores) are in poor condition and require replacement in the short term.

The original aluminum framed windows fitted with fixed single glazed (roof level) are leaking to the interior at localized areas. The windows have failed glazing and are in poor condition. Allow for replacement in the immediate term.
Doors

The main entrance doors are aluminum glazed and are in good condition.

All the original steel exit doors (south elevation) are in corroded steel framed and with high concrete threshold. Allow for replacement and for building ramps at the thresholds in the short term.

Aluminum door at the Pizza Pizza Store is deteriorated and needs to be replaced.

Original single glazed aluminum doors at the Stores should be replaced at the same time when the single glazed windows will be replaced.
Roofing

The laminated sloped asphalt shingle roofs at the north side are newer and are in good condition.

The elevated built-up roof system with pea gravel is assumed original, deteriorated and should be replaced in the short term.

The elevated two-ply modified bituminous roof system, has a major ponding and require immediate repairs.

The main two-ply modified bituminous roof system is leaking at localized locations, has deteriorated membranes with numerous patches and deficiencies, such as failing flashing details and corroded metal flashing (indicating aging), etc. It is recommended to repair the roof leaks in the immediate term and budget for staging replacement of all the two-ply roofs in the short term.
Aluminum and plywood soffits are installed throughout and are in good condition. However, damaged section of the soffit should be repaired in the short term.

Installed prefinished eavestroughs and downpipes at the shingle roofs are in good condition.
A PVC leader is installed for the flat roof at the south elevation and is in good condition. Allow for installing a splash pad.

Cedar shakes installed around the building are severely deteriorated and damaged. Allow for complete replacement in the short term, or at the time the roof will be replaced.
4.2 Structural

Foundation

The building foundation is a combination of reinforced concrete block and concrete walls supported on reinforced concrete strip footings. The foundation walls are in fair condition overall with localized cracks and deterioration. Allow for repairs at north and south elevations.

The foundation components are performing adequately based on visual review of finishes and exposed walls.

Superstructures

This is a steel structure framed building with a combination of brick veneer, stone veneer and Exterior Insulation Finishing System (EIFS) exterior walls. The building structure was found to
be in overall fair condition based on visual review. The original Structural design drawings were not available for review.

The ceiling is an open web steel joists with steel corrugated deck.

It was noted that the floor is uneven in the Chief Administration Office. Allow for repairs in the short term, as it is considered a safety hazard.

Interior Partitions

Non-load bearing partitions are constructed of 4” metal studs and gypsum board facing. Concrete block walls are installed in the Electrical Room and in good condition.

Fire Safety

The current Ontario Building Code classifies the building as Group A, Division 2 (Assembly Occupancy) with Group D subsidiary occupancies, that is not sprinklered. As such, the building can be constructed with combustible or non-combustible materials. A 1 hour fire resistance rated (FRR) is required between the Electrical Room and the remainder of the building.

There is no requirement for the installation of a fire alarm system or suppression system.
A detailed review of fire protection and occupant safety was not conducted but we did observe the following deficiencies that require attention:

- Penetrations within the walls of the Electrical Room require repair;
- Penetrations within the walls of the Utility Room of the Hair Salon require repair;
- Maintain the self-closing devices on service doors through fire separations and confirm FRR of closures;
- Fire-stopping of pipe and conduit penetrations is required.

Major renovations proposed for this building will require a detailed review of the current construction means and methods to determine the integrity of the fire separations and closures in place and what additional fire safety requirements are required if any.

4.3 Accessibility

The building has been updated for barrier free access in 2010, by installing accessible plumbing fixtures in several Accessible Washrooms. One of the grab bars is loose and should be secured, as part of the regular maintenance.

None of the main entrances is equipped with an automatic door operator. All of the main entrance doors are equipped with an automatic door operator. There are three handicap designated stalls near the entrances.

There are no railings installed at any of the entrance ramps. Allow for modification.

There is a barrier-free Washroom in the Pizza Pizza Store and plumbing fixtures are in good condition.
4.4 Mechanical

Elevator

The building is a single storey structure.

Sanitary and Storm Drainage

Drainage piping serving plumbing fixtures (lavatories, urinals, water closets and sinks) throughout the facility is generally concealed in wall cavities. Where exposed, sanitary drainage piping consists of the PVC mains and stacks with ABS to the fixtures. All sanitary piping viewed is PVC materials. Cleanouts and fixture traps are provided as required. We have not been informed of any abnormalities with the sanitary systems.

Conventional floor drains are installed where fixtures are present. All sanitary piping is uninsulated as would be expected for non-freeze application.

The building sanitary system is reported to be backing-up; a CCTV scan is required to determine the cause, and repairs are to be conducted, based on the results of the investigation.

In terms of the building storm water system, the roofs are drained by internal and external downspouts. The leaders are mainly concealed. There are catch basins in the parking lot. Drainage in the parking lot is in fair-to poor condition with noted ponding.

Allow for mapping sanitary and storm systems. Conditions and direction of sanitary and storm sub-surface piping should be reviewed with CCTV snaking in a regular basis.

An old oil heating system was used in the building in the past; oil contamination was reported with a contractor on site, monitoring the contamination. The oil contamination was not addressed in this report, as it is beyond the report scope.
Natural Gas

The building is provided with natural gas for heating and hot water. The regulators and meters are located at the south elevation at grade level. The service is piped into the building and to the rooftop units, supplying the gas-fired packaged rooftop units and the hot water tanks. The meters are in fair condition. The pipes on the roof require painting, which can be accommodated from the maintenance budget.

The bollards installed at the gas meters require replacement with a heavy duty bollards in the short term.

Plumbing Fixtures and Accessories

The building is equipped with conventional plumbing fixtures. Plumbing fixtures are a combination of original (1979) in the Convenience Store, and updated (2000, 2006 and 2010) ones. The newer fixtures are in good condition overall. This includes:

- Vitreous clay sinks with knob and lever hardware in all Washrooms;
- Newer flush valve floor mounted water closets in all Washrooms;
- Flush valve wall mounted urinals in the Men’s Washrooms;
- Stainless steel sink in the Lunch Room.
Domestic Hot and Cold Water Systems

The water service enters from the east side with a 2” diameter main. The 2” diameter copper pipes with the newer 2” diameter Sensus meter, complete with shut-off valves are uninsulated. Allow for insulation and for installation of a backflow preventer.

The domestic water piping systems are in good-to-fair operating condition.

Domestic water heating for the building is provided by several electric and gas-fired hot water heaters. All the heaters are in good condition. However, the domestic copper piping is uninsulated throughout the building.

A water filtration system for drinking water is installed and is in good condition.
Structural & Building Envelope Assessment
King Township Municipal Offices, King City, Ontario
Fire Detection and Suppression Systems

There is no fire alarm system installed in the building.

Smoke alarms are installed throughout, hard wired and are reported to be connected to the security system.

Fire controlled fire rated steel doors are installed throughout.

Portable ABC type fire extinguishers are located throughout the building.

Servicing of all equipment is presumed to be conducted in accordance with Fire Code regulations. Fire Safety Plan was not available for review. Allow for providing/updating the FSP.

Heating

The building with the exception of the Pizza Pizza section is equipped with sixteen (16) newer gas-fired Lennox packaged rooftop units. The units are heating/cooling type. Each unit with 150,000 BTUH of heating capacity is in good condition. The units, installed between 2008 and 2010 are equipped with digital thermostats.

The Mayor’s Office has an electric baseboard installed. Supplemental heating is provided by electric convector heaters in the Vestibules.

Conventional thermostats are used to control the various heating systems.

Pizza Pizza Store is heated and cooled by its own York packaged rooftop units, which are not addressed in this report.
Ventilation

Older and newer ceiling mounted exhaust fans are used in the Washrooms and are in good-to-fair condition. Allow for replacement of the older one in the near future.

Propeller exhaust fan is installed in the Server Room.

Destratification fans are installed in the Offices and are in good condition.
Carbon Monoxide Detection

The building is not equipped with carbon monoxide detectors. Though not required, CO detectors are recommended to be installed. Use maintenance budget for the modification.

Air Conditioning

Cooling of the building is provided by sixteen (16) packaged rooftop units. The electric air-cooling is by Lennox and cooling capacity ranges between 48,000 and 60,000 BTUH (4 & 5 nominal tons).

The cooling system is in overall good condition.
A Friedrich split system air conditioning unit is installed in the Server Room. The 2004 unit with cooling capacity of 12,000 BTUH is in good-to-fair condition. However copper pipes at the roof mounted condenser need to be re-insulated.

Lennox units are using factory charged HCFC-22 refrigerant.

Tempered air is distributed through conventional ducting and standard ceiling diffusers and wall mounted grilles.

4.5 Electrical

Site and Service

Main electrical power is provided from an adjacent pad mount transformer, located at the south side of the building. The service is run via conduits to the Electrical Room. One of the conduits is damaged. Allow for replacement.
Main electrical power supply enters the Electrical Room to the main CEB switchboard. The 1,200-Amp switchboard is rated at 600-Volt, 3 phase and 4 wire.

The switchboard is original, but in fair condition.

The Township has its own newer separate Siemens main switch, rated at 400-Amp and 240-Volt.

Allow for thermography of all electrical systems in the short term.

**Distribution**

Power from the main switchboard is fed to various disconnects and panelboards throughout the building.

The distribution panels are a combination of original CEB, older Federal Pioneer and new Siemens panelboards, and they rated at 100 - 225-Amp, 120/240-Volt, 3 phase, 4 wire and with 18, 30 & 42 circuits. Older panels should be replaced, based on the thermography results.

Cabling is protected by rigid conduit or is BX type. No allowances are made for cabling replacement.

Ground fault interrupter receptacles are installed in the various Washrooms and throughout the building. Broken outdoor receptacle shall be replaced.

We did not observe any evidence of major problems with the electrical distribution system.
Lighting

The interior lighting is a mixed of older and newer lighting fixtures. Recessed and surface mounted T8 fluorescent fixtures are installed; however, T12 technology is still used. Allow for upgrading of all original fluorescent fixtures in the short term. Compact fluorescents (CFL’s), track lighting fixtures and incandescent light fixtures are also installed. Incandescent light fixtures also need to be upgraded.
Emergency Power/Emergency Lighting/Exit Lighting

The building is equipped with a 2006 gas-fired Cummins Power Generation emergency generator. The generator is equipped with a transfer switch. The components are in good condition.

Illuminated exit signs, combined with emergency lights (battery packs) are located at all points of egress as required with the exception of an illuminated exit sign at the west section of the building. Allow for rectification.
Security

The building is equipped with a DSC security system, but no CCTV system is provided. The security system is in good operating condition.

Public Address Systems

The building is equipped with a newer communication and door access entry systems. Both systems are in good condition.
4.6 Interior Finishes

Main Areas

Finishes consists of carpet, ceramic tiles and vinyl composite tiles (VCT) floors in most areas. It is recommended to replace deteriorated VCT tiles in the Convenience Store (by tenant) and in the Server Room in the short term. We observed that the VCT tiles in the Convenience Store are original to the building; therefore they may contain asbestos. This should be considered when the flooring is being replaced.

A newer hardwood flooring is installed in the Mayor's Office and the Chief Administration Office.

Steel stud gypsum board walls are installed throughout with localized damaged areas. T-bars ceiling tiles are installed throughout the building; damaged sections, due to leaks, caused by roof and roof level's windows failure were noted at localized areas and will need replacement in the short term. Stipple textured and gypsum board ceilings are also installed.

The interior finishes throughout the building are in good-to-fair condition overall.
Service Areas

The Safe Room is finished with epoxy coated slab-on-grade concrete floor and with gypsum board walls and ceiling. The Electrical Room is finished with concrete floor, concrete block walls and unfinished steel deck ceiling.

Doors

The interior doors are a combination of wood and metal clad, and some are with vision glass. Standard hardware consists of lever type hardware, pull handles and self-closing devices. The doors are in good condition overall.

Interior glazed doors are installed in the Vestibules and are in good condition.

Interior Glazing

A wood framed single glazed interior window is installed in the Office and is in good condition.
Millwork

A laminate counters and wood cabinets are installed in the Lunch Room and the Copy room, The millwork is in in good condition.

4.7 Site, Parking Lots and Site Lighting

Hard Landscaping and Curbing

The parking lots and driveways (40,000 sf) is surfaced with conventional asphaltic concrete. The pavements are in general poor condition with cracking, settlement, pot holes and deterioration noted throughout the site. Allow for repairs in the short term and for replacement in stages. Catch basins are installed, but drainage issues were noted at the time of our
inspection with observed ponding. Line painting is in fair condition. Three designated handicap stalls are provided with standing signs.

Precast curbs are installed and are in good condition.

Cast-in-place concrete curbs are in poor condition with localized cracked, damaged and deteriorated sections. Allow for replacement in the short term, along with proper curb cuts.

The interlocking stones pavement at the main entrances is in fair condition with settled sections and deteriorated steps. Repairs are recommended in the short term.

A concrete base is installed for the generator at the south side of the building. The base is in good condition.

The concrete cast-in-place walkway at the north and west elevations is cracked settled and deteriorated. Allow for replacement in the short term.
Stairs/Railings/Handrails

A chain link fence is installed at the south and east elevations with localized damaged sections. Allow for repair and partial replacement in the near future. The fence is in fair condition.

Grading

No grading issues were noted at this building.

Accessories

The building signs above the main entrances are in good condition.

Exterior Building and Site Lighting

Newer and original wall-mounted light fixtures are installed around the building. Allow for replacement of the three older fixtures in the short term.

Light standards with single and dual lamps are installed at the parking lot and are in good condition.

Compact fluorescent light fixtures are installed at the aluminum soffit at north, east and west elevations, operational and in good condition.
4.8 Hazardous Materials

Based on the age of the building, hazardous materials may be present in the following materials/components: PCB in T12 fluorescent light fixtures, lead in paint and solder plumbing joints, silica in concrete/concrete block, etc. Allowances are made to provide a Designated Substance Survey (DSS), complete with testing, to identify all locations and conditions of suspected hazardous materials.

We observed that the VCT tiles in the Convenience Store are original to the building; therefore they may contain asbestos. This should be considered when the flooring is being replaced.
4.9 Ability to Host Solar Panels

To get the most from position-fixed (or seasonally adjusted) photovoltaic or thermal solar panels, they shall be pointed in the direction that captures the most sun. Solar panels should always face true south in the Northern Hemisphere.

The King Township Municipal Offices are mainly flat; therefore the orientation is in favour.

The King Township Municipal Offices is a steel structure. A complete study and testing, including snow load, of the wood framing characteristics shall be conducted, in order to determine the ability for the structure to accommodate the needed load. Ability of using the generating power for electricity, or hot water in the building needs to be confirmed, prior to the project initiation.
## 5. OPINIONS OF PROBABLE COST

The following Table is CCI’s opinion of probable costs.

<table>
<thead>
<tr>
<th>Category</th>
<th>Component</th>
<th>Work Description</th>
<th>Total Cost in $1,000</th>
<th>Rating</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Envelope</td>
<td>Exterior Walls - Aluminum clad walls at roof level</td>
<td>Replacement</td>
<td>$40</td>
<td>Below Average</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Envelope</td>
<td>Exterior Walls - Masonry bricks, stone veneer and columns, and EIFS</td>
<td>Repair</td>
<td>$16</td>
<td>Below Average</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Envelope</td>
<td>Exit doors corroded frames and trip hazards at exit thresholds</td>
<td>Refurbish</td>
<td>$15</td>
<td>Below Average</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Envelope</td>
<td>Roof level windows currently leaking, single glazed windows at rented units and older double glazed windows</td>
<td>Replacement</td>
<td>$95</td>
<td>Poor</td>
<td>45</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roofing</td>
<td>Cedar shakes</td>
<td>Replacement</td>
<td>$30</td>
<td>Poor</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roofing</td>
<td>Built-up roof with pea gravel</td>
<td>Replacement</td>
<td>$24</td>
<td>Below Average</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roofing</td>
<td>Modified Bituminous roofs: current repairs and future replacement</td>
<td>Replacement</td>
<td>$305</td>
<td>Poor</td>
<td>5</td>
<td>300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roofing</td>
<td>Damaged aluminum soffit</td>
<td>Refurbish</td>
<td>$1</td>
<td>Below Average</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural</td>
<td>Cracked concrete and concrete block foundation walls</td>
<td>Repair</td>
<td>$25</td>
<td>Below Average</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural</td>
<td>Uneven floor in the Chief Administration Office</td>
<td>Repair</td>
<td>$3</td>
<td>Below Average</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility</td>
<td>Installation of railing at all accessible ramps</td>
<td>Provide</td>
<td>$14</td>
<td>Below Average</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical</td>
<td>Sewage back-up: allow for camera inspection and repairs</td>
<td>Repair</td>
<td>$9</td>
<td>Below Average</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical</td>
<td>Fire Safety - Fire rated walls and ceiling in the Electrical room</td>
<td>Repair</td>
<td>$3</td>
<td>Poor</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical</td>
<td>Insulate water meter and install backflow preventer</td>
<td>Provide</td>
<td>$6</td>
<td>Below Average</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical</td>
<td>Ventilation: Replacement of all older exhaust fans</td>
<td>Replacement</td>
<td>$6</td>
<td>Below Average</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td>Broken conduit at south elevation and broken outdoor receptacle</td>
<td>Repair</td>
<td>$2</td>
<td>Poor</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td>Older electric panels: Thermography scan, now and replacement in the future</td>
<td>Replacement</td>
<td>$23</td>
<td>Below Average</td>
<td>3</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td>Upgrade Incandescent lighting fixtures and T12 fluorescent light fixtures</td>
<td>Upgrade</td>
<td>$20</td>
<td>Below Average</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interior Finishes</td>
<td>VCT tiles in the Server Room</td>
<td>Replacement</td>
<td>$3</td>
<td>Below Average</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interior Finishes</td>
<td>Damaged ceiling tiles, due to roof or window leaks, and damaged gypsum walls</td>
<td>Replacement</td>
<td>$4</td>
<td>Below Average</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td>Older wall-mounted lights</td>
<td>Replacement</td>
<td>$3</td>
<td>Below Average</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td>Bollards at gas meters</td>
<td>Provide</td>
<td>$10</td>
<td>Below Average</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td>Chain link fence</td>
<td>Repair</td>
<td>$5</td>
<td>Below Average</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td>Settled interlocking stones pavement and steps at the north elevation</td>
<td>Repair</td>
<td>$4</td>
<td>Below Average</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td>Cracked concrete walkways</td>
<td>Replacement</td>
<td>$25</td>
<td>Below Average</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td>Asphaltic concrete pavement major deterioration and cracked cast-in-place concrete curbs at the parking lot - immediate repairs and future replacement</td>
<td>Replacement</td>
<td>$225</td>
<td>Below Average</td>
<td>5</td>
<td>110</td>
<td>110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous Materials and DSS</td>
<td>Allow for DSS report</td>
<td>Allowance</td>
<td>$7</td>
<td>Below Average</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals (in $1,000)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>258</td>
<td>140</td>
<td>531</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
6. LIMITATIONS

Historical Information Review – No historical information was reviewed or made available for review for this property/building except as noted in Section 2.7.

Building Questionnaire – A CCI Questionnaire was not received for this building.

Activity Exclusions:

- Removing or relocating materials, furniture, storage containers, personal effects, debris material or finishes. Conducting exploratory probing or testing. Dismantling or operation of equipment or appliances, or disturbing personal items or property, which obstructs access or visibility.
- Preparing engineering calculations to determine any system, component or equipment adequacy or compliance with any specific or commonly accepted design requirements or building codes or preparing designs or specifications to remedy any physical deficiency.
- Quantity measurements taken or otherwise provided are estimates only.
- Reporting on the presence or absence of pests.
- Reporting on the condition of subterranean conditions.
- Entering or accessing any area of the premises deemed to pose a threat of dangerous or adverse conditions with respect to the field observer or to perform any procedure that may damage or impair the physical integrity of the property, any system or any component.
- Providing an opinion on the condition of any system or component’s operation that is shutdown or whose operation by the field observer may increase significantly the registered electrical demand-load.
- Evaluating acoustical or insulating characteristics of systems or components.
- Providing an opinion on matters regarding security of the subject property and protection of its occupants or users from unauthorized access.
- Operating or witnessing the operation of lighting or other systems typically controlled by time clocks or that are normally operated by the building’s operation staff or service companies.
- Providing an environmental assessment or opinion on the presence of any environmental issues such as asbestos, hazardous wastes, toxic materials, the location and presence of designated wetlands, IAQ, etc.
- All process equipment and associated components were not reviewed as they are considered tenant owned and maintained.
By providing this BCA, the Consultant is merely providing an opinion and does not warrant or guarantee the present or future condition of the subject property, nor may the BCA be construed as either a warranty or guarantee of any of the following:

Any system’s or component’s physical condition or use, nor is a BCA to be construed as substituting for any system’s or equipment’s warranty transfer inspection;

Compliance with any federal, provincial or local statute, ordinance, rule or regulation including, but not limited to, building codes, safety codes, environmental regulations, health codes or zoning ordinances or compliance with trade/design standards or the standards developed by the insurance industry; however, should there be any conspicuous material present violations observed or reported based upon actual knowledge of the field observer are identified in the BCA;

Compliance of any material, equipment, or system with any certification or actuation rate program, vendor’s or manufacturer’s warranty provisions, or provisions established by any standards that are related to insurance industry acceptance/approval, such as FM, ULC, etc.
7. DEFINITIONS

Building Code - The basis of the Building Code reference means the minimum requirements of the Ontario Building Code as opposed to particulars of other legislation, e.g. The Fire Code or local By-laws.

Capital Work Expenditure - This is any work item that is required to the building components as deemed necessary by the Consultant. As minimum capital expense amount has been set at $1,000 per item. Therefore if cumulative costs for a work item are less than $1,000, the work is considered maintenance and is not part of the study.

CCI - Abbreviation for CCI Group Inc., Concord, Ontario.

Condition:

• Good Condition – Minor defects, superficial wear and tear, some deterioration to finishes, major maintenance not required, and not requiring capital expenditure.

• Fair Condition – Average condition, significant defects are evident, worn finishes require maintenance, services are functional but need attention, likely to become “poor” within a few years if not addressed.

• Poor Condition – Badly deteriorated, potential structural problems, inferior appearance, major defects, components fail frequently, observable deterioration requiring capital repair and the component failing.

• Very Poor – Building or component has failed, not operational, not viable, and unfit for occupancy or normal use, environmental/contamination/pollution issues exist.

Description of Work - The report includes either a Repair, Replace, Refurbish or combination of the three. CCI has defined the work as follows: Repair is defined as work required bringing the component up to a state of good repair. Refurbish means clean, repair in whole or in part, paint and test operation where necessary. Replacement means to remove and replace an item as it has reached the end of its useful service life. This means that the component is typically worn, outdated or in disrepair.

Life Expectancy (years) - The life cycle expectancy of a component in terms of years under normal service conditions.

Opinion of Probable Cost - CCI’s opinion of probable cost as defined as Estimate Class 5 using ASTM E2516-06 Standard Classification for Cost Estimate Classification System.
Priority Ranking - This is a Priority Ranking and criteria provided by CTK for the ranking of Projects.

1 = Poor - the Proposal is lacking or is inadequate in most of the basic requirements, specifications and provisions.

2 = Below average - the Proposal meets many of the basic requirements, specifications and provisions, but is lacking in some essential items.

3 = Average - the Proposal meets all of the basic requirements, specifications and provisions, and is generally capable of meeting the Township’s needs.

4 = Above average - the Proposal more than adequately meets all of the basic requirements, specifications and provisions, and exceeds them in some respects.

5 = Excellent - the Proposal exceeds the basic requirements, specifications and provisions in every respect.

Repair Cost - Cost required in the first few years to bring the component into a state-of-good repair. It is estimated by the Consultant and includes interest where outside of the current year of assessment.

Replacement Cost - The estimated cost of replacing or providing major repairs to a component at current prices including factors such as demolition, disposal, material, labour and contractor’s overhead and profit. The item excludes HST.

This is the calculated dollar value (2013 dollars) to complete the described work based quantity measurement and acceptable costs for various replacement, repair and renovation work. It is the single occurrence cost for the item and not the cumulative total over the 5-year period.

The cost basis is that work is being replaced/repairs with similar materials and not upgraded unless stated.

The costs developed for this project are for renovation work as opposed to new work. When renovation occurs, additional costs are incurred for demolition and difficulty. Other times, not all components for the assembly would need repair/replacement. In these cases, reductions in cost usually are negated by other factors such as unforeseen conditions.

Costs were developed using 2013 RS Means Repair & Remodelling Cost Data, 33rd edition, adjusted to an index, adding soft costs for Engineering at 10%, contingency at 10% (permits, testing, etc.) and construction management at 5%.

Other RS Means books, such as Mechanical, Electrical and Landscaping were also referenced.
In some cases, unit rates from RS Means cannot be easily applied. In this case, we have either applied allowances to cover for the repair/replacement based on our experience in similar situations or have unit rates that were derived from previous restoration projects of a similar nature, e.g. concrete repairs.

Costs have been rounded up to the nearest $1,000.

Remaining Life - The remaining life is a calculation of the Life Expectancy less the Year Installed (in years). The remaining life is then adjusted to reflect a condition where the component has accelerated wear or has less wear than anticipated at that current time of review.

Replacement Year - The corresponding year to the Remaining Life.

Quantity - An estimated quantity derived from either review of drawings, site measurement, site estimation or a combination of all three.

Unit - # = quantity, lf = lineal feet, LS = lump sum, sf = square feet

Unit Cost - Quantity multiplied by Unit

Year Installed (year) - This is the age (in years) of the building element, from date of installation or date of major repair, if it is known. In most instances the actual age of a repair or the date of installation is not known and a reasonable age estimate has been provided by CCI.
8. DISCLAIMER

The statements made in this report are based solely on the information obtained to date as part of the above referenced assessment. CCI Group Inc. has used its professional judgement in assessing this information and formulating its opinions and recommendations. The mandate at CCI Group Inc. is to perform the tasks prescribed by the client with due diligence of the profession. No other warranty or representation is expressed or implied as to the accuracy of the information or recommendations included or intended in this report. CCI Group Inc. disclaims any liability or responsibility to any person or party for any loss, damage, expense, fine or penalty which may arise or result from the use of any information or recommendation contained in this report.

Opinions of probable costs, where provided, are for information and discussion purposes only and do not represent actual quotes for work. They are based on industry standard costing manuals and/or our experience with similar types of repair. Subsurface conditions are to be verified and specifications/drawings are required to properly define the Scope of Work and to obtain formal quotations.

Inspection and reporting methods are based on the ASTM E 2018-08, Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process. The report is not considered a code compliance audit; code issues, where raised, are considered health and safety issues that require immediate address.

CCI GROUP INC.

Prepared By: Reviewed By:

___________________________  ______________________ _____
(digitally signed)    (digitally signed)
Zack Salman,     John Kirkpatrick,
Building Science Specialist    Director, Corporate Projects