TOWN OF BONFIELD

BUILDING ASSESSMENT

REVIEW BY

KONTEK ENGINEERING LTD.

Huntsville, Ontario

2017

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A) BACKGROUND

Kontek Engineering Ltd. was contacted by the Town of Bonfield to provide a building assessment report as mandated by the Ontario Municipal Act.

Personnel from our company visited the 9 municipal buildings within the municipality to perform a general architectural engineering review. The purpose of this review is to ascertain any immediate concerns for the structural and operational safety of the building and to estimate the life and maintenance costs for major components of the building.

During our review we reviewed the following items:

Building construction year	
Building area	
Exterior	Roof
	Walls
	Windows
Interior	Floors
	Walls
	Ceilings
HVAC	Heating
	A/C
Electrical	Service
	Lighting

Septic system general review

Major Expenditures required immediately
Major Expenditures within 5 to 10 years
Major Expenditures within 10 to 20 years

B) MUNICIPAL OFFICE AND LIBRARY

The Municipal Office and Library is the oldest of the building reviewed. It was originally constructed in 1972 and has undergone several expansions since that time.

The estimated replacement cost for the building based on $250.00 per square foot is approximately $1,200,000.00.

Building construction year		1972
Building area		4800 sq. ft.
Exterior	Roof	Steel roof original
	Walls	Block with steel cladding
	Windows	Vinyl Sliders
Interior	Floors	Combination of rugs and linoleum
	Walls	Drywall
	Ceilings	Combination drywall and drop ceiling tiles
HVAC	Heating	Electrical Baseboard
	A/C	Wall mounted window units
Electrical	Service	120/240 Volt, 400 Amp, 1 phase
	Lighting	Primarily fluorescent
Septic system		Appears adequate and operational
Miscellaneous		Entrance dormers

The steel roof is nearing the end of its life. Galvanizing on the edge of the sheets is gone and rusting has started. Roof has leaked in the past and re-screwing the steel sheeting was undertake in approximately 2012. We would estimate that within the 5 to 10 years that it will require replacing.

Entrance dormers supported by 1 1/2" pipes. Several of the pipes are bent from snow plowing. Further failure could result in dormers pulling off of building and causing the roof to leak.

The roof drains where they transform from the steel drain pipe to plastic big "O" have been damaged by the whipper snapper during landscaping. It has resulted in water being allowed to congregate near the foundation wall.

The exterior cladding has a life expectancy and we estimate 15 to 20 years remaining.

The electric heating and A/C has a life expectancy of about 20 to 25 years. We estimate that there may be 5 to 10 years of life remaining in the existing items.

There are several areas where the ceiling and ceiling tiles have been discolored due to a previous roof leak. These are cosmetic and can be repaired under yearly maintenance if desired.

Major Expenditures required immediately -

Entrance dormers	$3000.00 to $5000.00
Roof drains to ground	$1000.00

Major Expenditures within 5 to 10 years

Roof replacement	$60,000.00
Electric Baseboard Heaters	$6,000.00
Wall mounted A/C	$10,000.00

Major Expenditures within 10 to 20 years

Flooring replacement	$96,000.00
Exterior Cladding	$20,000.00
Window Replacement	$10,000.00

C) PUBLIC WORKS GARAGE

The Public Works Garage was constructed in 1991 and has remained pretty much the same since its original construction.

The estimated replacement cost based on $150.00 per square foot is approximately $630,000.00.

Building construction year		1991
Building area		4200 sq. ft.
Exterior	Roof	Steel roof
	Walls	Steel insulated
	Windows	Vinyl Sliders
Interior	Floors	concrete with vinyl tiles in office area
	Walls	Interior office walls are drywall. Remainder of garage steel
	Ceilings	Office area is drywall and drop tiles. Garage area Steel
HVAC	Heating	In-floor heating with the original oil fired boiler
	A/C	Wall mounted in office area
Electrical	Service	120/208 Volt, 200 amp, 3 phase
	Lighting	Fluorescent in the offices and halogen in garage
Septic system		Appears adequate and operational

The back wall of the building has been damaged from ice and snow falling from the roof area which slopes to the back of the building. The cause is the lack of a ventilation space under the roof steel which allows the snow to melt and run to the back of the building. It re-freezes and clumps up until it collapses under its own weight and falls damaging the lower part of the wall. There is some obvious mould occurring on the outside of the building. It is a fair assumption that this will be mutating into the insulation and the inside of the building. We recommend that a more extensive study be done to determine the extent of the damage and possible solutions.

The oil fired boiler is the original to the building and has 25 years of use. The boiler is a Dettson Inc boiler out of Sherbrooke, Quebec. The company still exists but chances of getting parts for this particular boiler may be slim. The efficiency of the boiler is likely down around 50 to 60%. We recommend replacing it with a gas fired boiler. The boiler was checked in April 2017 and declared sound, but consideration to changing out the boiler in the next 5 years would be prudent.

Windows have a 25 year life and will be near the end of their life.

The wall mounted A/C units have an expected life of 15 years. If they are the original ones installed then they are living on boroughed time. We expect that there maximum life remaining will be less than 5 years.

The garage doors have an expected life of 25 to 35 years. We expect that within 5 to 10 years the garage doors will require major maintenance or replacement.

Major Expenditures required immediately

Damage to the back of the building	investigation	$5000.00
	repair cost	????????

Major Expenditures with 1 to 5 years

Oil fired boiler	$15000.00
Windows / doors	$5000.00
Wall mounted A/C	$4000.00

Major Expenditures within 5 to 10 years

Garage doors	$20,000.00

Major Expenditures within 10 to 20 years

Roof Replacement	$50,000.00
Exterior Wall (excluding back wall repair)	$35,000.00

D) MUNICIPAL MEDICAL CENTER

The Medical Center was originally built in 1982. It has under gone several renovations and the last one within 2 years.

The replacement cost of the medical building is roughly $300,000.00

Building construction year		1982
Building area		1000 sq ft
Exterior	Roof	Shingle
	Walls	wood construction with brick veneer
	Windows	vinyl casement
Interior	Floors	rugs and linoleum
	Walls	drywall
	Ceilings	drywall
HVAC	Heating	oil furnace and forced air
	A/C	central air
Electrical	Service	120/240 volt, 100 amp, 1 ph.
	Lighting	flourescent
Septic system		Appears in order and working

The most immediate concern is the front hall. The floor covering is linoleum 12"x 12" tiles which are curling up. This a sure sign of tile failure but also points to the floor plywood sheeting could be rotting as well. We recommend that the tile be replaced before it becomes a tripping hazard and verify that the floor sheeting is still intact.

The building is 35 years old and shingled roofs have a life of approximately 15 to 18 years. We understand that 1/2 the roof was done in 2015. The shingles on the half of the roof that was not done are curled and have bare spots in places. We recommend that they should be replaced in the next couple of years.

The furnace is a 30 year old oil fired Clair furnace. the recommended life for oil fired furnaces is 25 to 30 years. The problem with the older oil fired furnaces is getting parts when failures occur. We recommend consideration be given to replacing the furnace in the next five years.

Hand rails to the lower level need repair.

The remainder of the building has just been remodeled and therefore is in relatively good shape.

Major Expenditures required immediately

Front hall vestibule floor	$2000.00
Hand rails to the lower level	$1000.00
Roof shingle on 1/2 building	$12000.00

Major Expenditures within 1 to 5 years

Oil furnace	$5,000.00
A/C	$2000.00

Major Expenditures within 5 to 10 years

Major Expenditures within 10 to 20 years

Brick siding	$25,000.00
Casement Windows	$20,000.00
Flooring	$12000.00
Roof Shingles (new change)	$20,000.00

E) FIRE STATION #1

Fire Station #1 was constructed in 1996. It consists of a combination block wall and steel building. The post office is contained in one corner of the main floor. Offices contain fire offices and training facilities.

The replacement cost of the building at $200.00 per square foot will be $1,500,000.00

Building construction year		1996
Building area		7500 sq ft on 2 floors
Exterior	Roof	standing seam
	Walls	block and steel
	Windows	vinyl sliders
Interior	Floors	concrete in garage and linoleum in office
	Walls	drywall
	Ceilings	drywall and drop ceiling office area steel cladding in garage portion
HVAC	Heating	Tempstar oil furnace
	A/C	forced air system
	Ventilation	Flair 150300 HRV
Electrical	Service	120/240 volt, 200 amp, 1 phase
	Lighting	
Septic system		Appears adequate and in good condition

The Outside the rear exit area light needs new bulbs and requires to have protection cage or equal installed.

Heating systems typically have a life of 25 to 30 years. The building is 20 years old. Tempstar appears to still supports the existing equipment and therefore the remaining life can be expected to be another 5 to 10 years.

A standing seam roof should have a life of 30 to 40 years.

The exterior of the building is concrete block and steel cladding. It should be good for the life of the building provided it is not damaged by outside influences. We have included a replacement cost in the report.

The generally is in excellent condition and appears to be well used and taken care of.

Major Expenditures required immediately

Exit light repair	$500.00

Major Expenditures within 5 to 10 years

Oil Furnace / A/C / HRV	$10,000.00

Major Expenditures within 10 to 20 years

Roof	$75000.00
Exterior	$60,000.00
Windows	$10,000.00

F) FIRE STATION #2

Building construction year		1999
Building area		2000 sq ft
Exterior	Roof	Metal Roof
	Walls	Wood construction with vinyl siding
	Windows	Vinyl Slider
Interior	Floors	concrete
	Walls	Drywall
	Ceilings	Drywall
HVAC	Heating	Summit Oil furnace
Electrical	Service	120/240 volt, 200 amp, 1 phase
	Lighting	Flourescent
Septic system		Appears adequate and in good condition

The building heating system usually has a life of 20 to 25 years however in this case the building is not regularly used and heat is kept at a lower temperature.

Major Expenditures required immediately

None at this time.

Major Expenditures within 5 to 10 years

Heating system	$5000.00

Major Expenditures within 10 to 20 years

Roof	$24,000.00
Vinyl Siding	$27000.00
Vinyl Windows	$5000.00

G) OUTDOOR COVERED ICE RINK

Building was built in 2010. The building consists of a Pre-engineered steel structure roof covering a winter ice surface. There are no walls or dressing room facilities.

The replacement cost at $50.00 per sq ft will be $800,000.00

Building construction year		2010
Building area		15840 sq. ft.
Exterior	Roof	Steel
	Walls	None
	Windows	None
	Floors	Concrete
Interior	Walls	None
	Ceilings	None
HVAC	Heating	None
	A/C	None
Electrical	Service	
	Lighting	Halogen
Septic system		None

The building is a new building and there should be no major expenses for the next 25 years, except for the replacement of the halogen lights which are exposed to the elements.

Major Expenditures required immediately

None

Major Expenditures within 5 to 10 years

None

Major Expenditures within 10 to 20 years

None

H) ZAMBONI AND CHANGE ROOM

The Zamboni / Change building was constructed in the spring of 2017 for an approximate cost of $175,000.00

Building construction year		2017	
Building area		750 sq. ft.	
Exterior	Roof	steel	
	Walls	ICF	
	Windows		Vinyl
Interior	Floors		Concrete
	Walls		exterior grade plywood and marlyte
	Ceilings		exterior grade plywood and marlyte
HVAC	Heating		Propane Furnace
	A/C		none
Electrical	Service		pony panel from rink building
	Lighting		flourescent
Septic system			none

There should be no major expenditures on this building for 20 to 30 years.

I) DOG POND AND SHED

The building was constructed in 1993 to act as additional indoor storage and to act as a dog pond for stray dogs. The dog pond portion appears to be abandoned for most of the year, except for maybe hunting season.

The cost to replace the building as presently constructed is approximately $125,000.00

Building construction year		1993
Building area		1300 sq. ft.
Exterior	Roof	Steel
	Walls	Steel
	Windows	Vinyl sliders in dog pond
Interior	Floors	concrete
	Walls	Particle board in garage, drywall in dog pond
	Ceilings	Open trusses in garage, drywall in dog pond
HVAC	Heating	Baseboard
	A/C	none
Electrical	Service	Pony panel off of Municipal Garage
	Lighting	incandescent
Septic system		none

The building is used primarily as a storage shed. The dog pond appears primarily abandoned most of the year although I expect that it is used during hunting season. As a dog pond and storage shed it is adequate in the condition that it is presently.

Major Expenditures required immediately

None

Major Expenditures within 5 to 10 years

Windows and doors $3000.00

Major Expenditures within 10 to 20 years

Roof	$15000.00
Siding	$15000.00

J) TRACTOR SHED

The Tractor Shed (often referred to as Doug's garage) was built in 1982 and is presently used to storage for miscellaneous including CBO's truck, lawn equipment and signs used for community events.

The cost to replace the Tractor Shed as presently constructed is about $125,000.00

Building construction year		
Building area		
Exterior	Roof	shingles (appears relatively new and in good condition)
	Walls	clapboard (appear in relatively good condition)
	Windows	vinyl slider
Interior	Floors	dirt in the garage portion, plywood in storage area
	Walls	particle board in storage area
	Ceilings	particle board in storage area
HVAC	Heating	unit heater which has not been used in many years
Electrical	Service	ponyed off of the Municipal Offices
	Lighting	incandescent
Septic system		None

The building is old but appears in relatively sound condition for what it is being used for. If a change of use is required then the heating system will have to be replaced.

Major Expenditures required immediately

None

Major Expenditures within 5 to 10 years

None

Major Expenditures within 10 to 20 years

Roof shingles	$18000.00
Exterior clapboard	$10,000.00

K) MISCELLANEOUS BUILDINGS

There are other miscellaneous building around the town property such as Public Washrooms, Gazebo's, etc. that require regular maintenance but in the event of aging will be cheaper to replace.

L) MAJOR INVESTMENTS VERSUS YEARS

Bonfield Building Future Costing

Building	Immediate Expenses	Expenses in 1 to 5 years	Expenses in 5 to 10 years	Expenses in 10 to 20 years
Municipal Building and Library	$6,000.00		$76,000.00	126,000.00
Public Works Garage	$5,000.00	$24,000.00	$20,000.00	85,000.00
Municipal Medical Centre	$15,000.00	$7,000.00		77,000.00
Fire Station #1	$500.00		$10,000.00	145,000.00
Fire Station #2			$5,000.00	56,000.00
Outdoor Covered Rink				
Zamboni and Change Room				
Dog Pond and Shed		$3,000.00		30,000.00
Tractor Shed				28,000.00
Totals per Work Period	$26,500.00	$34,000.00	$111,000.00	$547,000.00

M) GENERAL COMMENTS RELATING TO ALL BUILDINGS

1. There is a general yearly maintenance component related to all buildings. We have not addressed in the report.

2. We found that many of the windows and doors on the building require caulking to be addressed now. We did not itemize this in the individual building sections because it is an item that must be address on a window by window or door by door basis.

N) DISCLAIMERS

The overall life spans have been taken from industry standards and may vary with the building use, building maintenance frequency, equipment manufacturer, installer or original builder.

The reviewers in this case have used their best judgment to estimate lives of individual building components. Replacement times and cost estimates are not fixed times or costs, and ongoing reviews of the items will be necessary for more accurate values.

Many items with regular maintenance may outlive the life estimates given. Items such as HVAC furnaces, A/C, and HRV's in many cases have their lives restricted by the availability of repair parts.

All replacement values are estimated based on knowledge at the time of this report. We have not allowed for inflation in our figures.