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Edmonton Public School Board – 2016 Value Management Analysis of Britannia Junior High School

Britannia Junior High School

August 20, 2016

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Introduction

The Purpose of the Value Management (VM) Study is to create a deeper understanding of the current building condition for each of the existing school buildings.

We have assumed for this project that the building, regardless of the option chosen, will be brought to a condition to allow the building to function without additional major work for the next 40 years.

The VM study will provide a better understanding of the condition of the building than is available from existing building condition database, based on the provincial VFA (formerly RECAPP) system. The VFA system considers components of a building and determines the need for replacement based on condition, building code, and life cycle.

This VM study will not review the buildings for their ability to meet 21st century learning practices. A further review of the building with the stakeholders will be required to determine the best solutions to meet program and pedagogical requirements.

Executive Summary

Facility Evaluations, Upgrades and Costs

The evaluation teams were requested to identify the upgrades required to bring the school up to a condition to allow the building to function without additional major work for the next 40 years. Britannia Junior High School, in its present state is made up of an original building constructed in 1956, an addition in 1960, followed by a second addition in 1963. Administration area was renovated in 1983 and 2004, Library in 1997, and the industrial shop was renovated to accommodate Phoenix Day Care in 2001, then a Montessori program in 2014.

Overall building condition is currently "acceptable" but many components are nearing the end of their design life-cycle. Summary of highlights from the facility evaluation by discipline are as follows:

Architectural/Structural – Some evidence of settlement in the North West stairwell should be addressed; BUR installed in some areas 1987 and 1963, SBS installed in 2000 are all near end of lifespan and should be replaced along with upgraded insulation; many original windows remain, with some insert replacements dating from 2003 – all windows in the school should be replaced; the building envelope is inadequate as there is little to no insulation or air/vapour barriers in the wall assemblies; the condition of interior finishes (most being original to the construction of the various school sections) is remarkable considering the age but most are nearing the end of lifecycle.

Mechanical – In general, the mechanical components are in marginal to poor condition. Replacement of most air systems and equipment and the boiler plant is required as these components are near or beyond life expectancy, do not meet code requirements and/or are energy inefficient. Washroom facilities should be provided with ADA fixtures. Fire protection requirements should be reviewed by Local Authorities to ensure code compliance. A new DDC control system is recommended.

Electrical – condition variable. Replacement of electrical distribution equipment is highly recommended. Also, it would be recommended to replace building wiring when major renovation in the building happens.

Civil – Generally in fair condition, operating at minimum capacity with significant deficiencies. Longitudinal/transverse cracks in concrete walkways; potholes, ruts, cracks, alligator cracking in asphalt; organics growing in asphalt indicating structure failure; low spots where drainage is not away from building; deteriorated curbing; areas of "no grass" where vehicles have been driving over grass were some of the observations recorded.

Hazmat – recommended removal costs includes the following: duct insulation, floor tile, mud parging, pipe fittings, sheet flooring, and spray texture.

The total capital cost of upgrades to meet the 40 year target has been estimated at $14,515,308*

* Note: this is not a Total Project Cost

Facility Evaluations – All Disciplines

FACILITY EVALUATION TEMPLATE

SITE NAME: Britannia Junior High School Site

BUILDING NAME: Britannia Junior High School

Evaluation Date: March 23, 2016

Evaluated By: Marshall Tittemore Architects
Williams Engineering Canada

Notes:
Three ratings are listed

- 1 = Critical: Unsafe, high risk of injury or system failure.
- 2 = Operating at minimum capacity. Significant deficiencies. Above average operating maintenance costs.
- 3 = Reached end of life cycle. Still operating adequately.
- 4 = as new, state of the art meets present and foreseeable requirements.

System	Description	Recommended Action Concerns	QTY/Area	Rating
Building General Summary	Grades 7-9 School, original built in 1956, original area - 3770 m2, two storey, combustible & non-combustible construction, non sprinklered; First Addition in 1960, area – 1075 m2, two storey, combustible & con combustible construction, non sprinklered; Second addition in 1963, are 912 m2, single storey, non-combustible construction, unsprinklered Gross Area 5758 m2 The school has had the following upgrades: 1956 bldg: Admin area was renovated in 1983 and refinished in 2004	Overall building condition currently acceptable though building envelope is poor (windows, walls etc) and many interior components though in very good condition, are nearing the end of their design lifecycle and		

System	Description	Recommended Action Concerns	QTY/Area	Rating
	1956 bldg: Library was renovated in 1997. 1956 bldg: Industrial shop became Phoenix Day Care in 2001 and then Montessori Programme area in 2014 The school contains 12 general classrooms (not including the space utilized for the Montesorri programme), 2 science classroom2 with one prep room, a library, a music room, a drama room, an art room, three computer rooms, sewing room, home economics room & two gymnasiums , and administration & support spaces			
Building Site Summary	School faces two streets, 161 Street on the west and main entrance facing 104 avenue on the south. Bus loading and pick up zone is along 104 Avenue. An asphalt paved service lane is along the east side of the property with and asphalt staff parking area on the west side immediately adjacent to the school. There is a small gravel parking area on the east side of the building. Sidewalks are provided along the north, west and south sides of the school Site is generally flat with grassed playfields & play equipment to the north and lawn immediately adjacent around the perimeter of the			

System	Description	Recommended Action Concerns	QTY/Area	Rating
	school building. Mature trees grow on the south side of the school. Site has a number of mature trees & shrubs around the building and throughout site.			
Structure Summary	1956 Section – Concrete block on concrete foundation walls on concrete strip footings along perimeter and interior corridor walls with concrete slab on grade floor. Gymnasium roof has structural stramit panels on purlins and laminated wood beams on load bearing concrete block. Typical roof has structural stramit panels on concrete beams on load bearing concrete blocks. Mezzanine for Stage area has wood joists on wood stud walls. Second floor structure is wood joists on light weight concrete block bearing walls 1960 Addition – concrete block walls on concrete grade beams on concrete piles along the perimeter and concrete piles for interior load bearing walls; concrete slab on grade floor. Second floor and roof are concrete double tees on precast concrete beams along the perimeter. 1963 Addition – concrete block on concrete grade beams on concrete piles along the perimeter and along the interior load bearing walls, concrete slab on grade floor. Roof is concrete double tees on precast	Evidence of settling in north west stairwell that needs to be addressed		2 2

System	Description	Recommended Action Concerns	QTY/Area	Rating
	concrete beams along perimeter.			
Building Envelope Summary	BUR on two sections of the building (1956 and 1963) with SBS roofing on the 1960 addition. Minimal roof insulation (1956 -50 mm stramit, 1960/1963 – 38mm rigid insulation) Exterior walls: painted concrete block with sections of face brick and some exposed precast concrete beams. No indication of any insulation in the block and only minimal in walls (1956 – none, 1960-25mm rigid in minimal areas only, 1963-38mm batt insulation in minimal areas only) Some areas of 1956 building have had windows removed and infilled with wood framing and painted wood exterior finish with batt insulation in walls assembly. Windows primarily aluminum - complete units in 1960/1963 additions and inserts into original wood window frames in the 1956 areas. Single glazing in most windows			2

System	Description	Recommended Action Concerns	QTY/Area	Rating
Roofing	1956: BUR installed in 1987 and needs to be replaced as at end of lifespan and to upgrade insulation. School also reports leaking in several areas of this portion of the school 1960: SBS roofing installed in 2000 nearing end of lifespan and should be replaced with upgraded insulation 1063: BUR installed in 1963 and well past anticipated lifespan and with minimal insulation.	All roof membranes should be replaced along with upgrading of insulation.		2 2 2
Walls	1956: Exterior concrete block and areas of face brick masonry. Some areas of vertical metal siding and some of painted wood cladding over infilled windows that have been removed from 1956 building. All exterior materials in very good condition, but there is little to no insulation in any of the wall assemblies. Evidence of air leakage in many areas of the 1956 building	Metal siding panels dented at west wall Replace siding at gymnasium		2 2
Windows	1956: original wood windows in most locations; aluminum inserts were installed within 36 of the original wood frames in 2003. 1960: most of the original windows were replaced with aluminum windows in 2003, still some wood hoper windows remain. 1963: original aluminum double hung windows remain	All windows in the school should be replaced		2 2 2

System	Description	Recommended Action Concerns	QTY/Area	Rating
Exterior Doors & Openings	All exterior openings were replaced in 2008. Most are metal doors with and frames with three primary entrances being steel framed storefronts with clear glass sidelights and doors with clear glass panels.	Doors and entrances in good condition with only minor repairs required (ie hardware and paint touchups)		3
Special Purpose Doors				
Special Features	Canopies (8 in total) typically wood framed over structure and have painted plywood finish. Most need to be repainted/replaced			2
Envelope - Other				

System	Description	Recommended Action Concerns	QTY/Area	Rating
Building Interior Summary	**1956 bldg**: original building typically has wood stud interior partitions, plaster walls and ceilings; Classrooms: suspended t-bar or fibre board ceiling tiles; vinyl tile, sheet vinyl or carpet flooring Gymnasium: painted stramit ceilings; painted concrete walls and wood flooring Corridors/Washrooms: suspended t-bar ceiling system, sheet vinyl tile flooring Shower areas: gypsum board ceilings with ceramic tile on walls and floors Wood doors and frames typical throughout. **1960 addition**: wood stud interior partitions, plaster walls and ceilings, fibre board ceilings and painted concrete double tee ceilings. Classrooms have VAT or carpet flooring; corridors have sheet vinyl flooring and textured celings; Washrooms have gypsum board ceilngs, fibreglass wall finishes and sheet vinyl flooring. Wood doors and metal frames typical. **1963 addition**: glazed concrete block interior partitions; fibre board ceiling and painted concrete double tees ceilings and cement tile flooring in the Gymnasium. VAT flooring in the locker rooms; gypsum board ceiling	Overall interior condition currently acceptable but many finishes are nearing the end of their design lifecycle		

System	Description	Recommended Action Concerns	QTY/Area	Rating
	and ceramic tile flooring in washrooms; fibre board ceiling and painted concrete double tees with VAT flooring in the corridors; Wood doors and metal frames typical.			
Partitions	**1956 bldg**: wood stud interior partitions **1960 addition**: wood stud interior partitions **1963 addition**: glazed concrete block interior partitions			3 3 3
Interior Finishes	Walls: Plaster walls, painted gypsum Board, painted concrete block, painted concrete structural elements, ceramic wall tile, Floors: VAT, sheet vinyl, carpet, ceramic floor tile, cement tile (1963 Gym only) wood floor (1956 gym and stage) Ceilings: suspended acoustic tile in T-bar, suspended GWB, exposed structure painted.			

System	Description	Recommended Action Concerns	QTY/Area	Rating
Floors	**Tile floors**: located in all 3 sections and in generally good condition	Performing adequately		3
	Wood flooring: in 1956 gym and stage areas was installed in 1998 and is in acceptable condition	Performing adequately		3
	VAT flooring: located in all three sections of the school and though original flooring products and close to or well beyond the anticipated lifespan, are in remarkable condition	Mostly good with only a couple of rooms needing replacement		3
	Sheet vinyl flooring: mostly original products with some having being replaced in 1981 and 1984.	Although well past anticipated life span, in very good shape with only a few rooms needing to be replaced		3
	Carpet: Some installed in 1956/1960/1963:	should be replaced.		2
	Installed in 2001/2004 carpet:	should be replaced		2
	Installed in 1984/1992:	should be replaced		2
Walls	Painted plaster or gypsum board on wood stud partitions & painted or glazed concrete block walls			3

System	Description	Recommended Action Concerns	QTY/Area	Rating
Ceilings	Fibre board tiles adhered to farming material or suspended acoustic tile in T-bar installation in most areas of 1956 bldg. Fibre board ceilings combined with painted concrete double tees' in the most areas of the 1960 and 1963 additions. Suspended GWB in select locations e.g. washrooms, storage rms. In all three areas	Water stained ceiling tiles noted in only a couple of locations. Some chipped tiles noted, but very few. Replace all stained/damaged ceiling tiles. .		3
Interior Openings	1956 bldg: solid wood doors and wood frames (+/- 60) 1960 Addition: solid core wood doors and wood frames. 1963 Addition: hollow core wood doors with metal frames with some having wired glass sidelights. Fire doors: Doors/Frames requiring to be rated (mech room, storage rooms, janitor rooms, etc.) are not labelled though are metal clad wood or metal doors in metal frames so not evident if complying with Code. Other doors: -accordion door in 1956 home ec classroom -folding partition in 1960 addition between computer room 40 and classroom 43 Interior glazing: 1956 bldg: metal/wood framed windows with either clear glass or	Most doors in good condition with only painting/refinishing required Fire doors/frames should be replaced with new labelled doors/frames In good condition In good condition		3 2 3 3

System	Description	Recommended Action Concerns	QTY/Area	Rating
	wired glass 1960 addition: metal framed storefront with clear glass 1063 metal framed storefront with clear glass top panel and sidelights	Openings with wired glass should be replaced with clear tempered or laminated glass		2 3
Furnishings & Equipment	Much of the millwork in the school appears to be original with the phase of construction other than some new in the admin areas that were most recently upgraded.			
Casework Items	Typical casework in all areas is painted wood shelving along the exterior walls. Most needs to be refinished and or replaced. Changes to mech items may necessitate this replacement as well. Display cabinets: in serviceable condition Vanities: although nearly all are original to the phase of project and are in serviceable conditions with only minor repairs and/or replacement required	Some shelving has paint chipped Older style casework/shelving requires painting in some areas. Repaint casework/shelving as required.		2 3 2

System	Description	Recommended Action Concerns	QTY/Area	Rating
Equipment Items	Dishwashers, fridges, microwave & stoves in staff room and kitchen. boot racks at student entrances. Smart boards in most classrooms.			4
Window Treatments	Most exterior windows in the facility are equipped with vertical plastic or fabric blinds installed in 2003. Generally in adequate condition though showing wear. Horizontal/roller blinds: installed in 1956 and 1960 phases and need replacement Curtains: one classroom has fabric curtains (8) that should be replaced	Functioning adequately Replace blinds (+/- 42 in total) Replace with blinds		3 2 2
Interior - Other	Lockers: all lockers are original to the phase of construction and need to be replaced			2

System	Description	Recommended Action Concerns	QTY/Area	Rating
Building Code	See separate Building Code Review ABC Group A Division 2 - School. 1956 original building & 1960 addition are two storey, combustible & non-combustible construction, unsprinklered. 1063 addition is one storey, non-combustible construction, unsprinklered. Georgian Wired Glass can be found on many doors within the facility			
Barrier - Free	No Auto door opener at main entrances , washrooms were upgraded with barrier free stalls and sinks in 1999, RAM 2 person 500kg handicapped lift provides access to 2nd Floor and was installed in 1998. Corridors are wide enough to accommodate wheelchair use, but not all areas of school accessible. Handicap accessible water closets provided but some require additional grab bars to be installed. Door hardware – most locksets / latchsets have round knobs	Generally speaking the school embraces the intent of being barrier free, although it may not meet specific requirements of A.B.C. 2014. Replace all locksets / latchsets with lever handle hardware. Install barrier free operators at main entrances. Replace ramp with ramp that meets Code requirements		2 2 2 2
Hazardous Materials	Refer to HAZMAT Report			

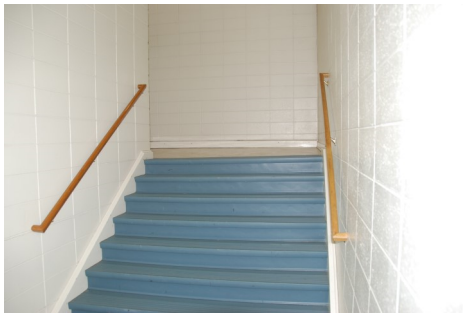
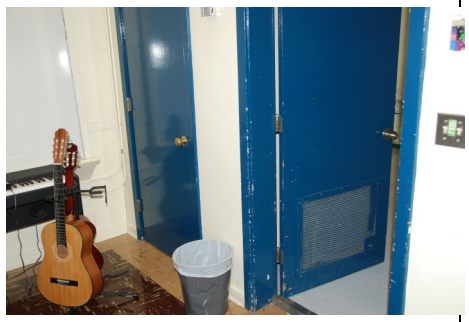
FACILITY EVALUATION PHOTOGRAPHS

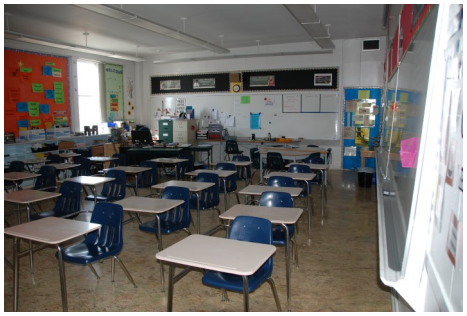
1. west elevation of 1956 bldg 	2. main entry in SW corner of 1956 bldg 	3. South elevation of 1956 section of school 	4. south elevation of one storey 1963 addition
5. SE corner of 1963 addition 	6. north side of 1963 addition – service entrance 	7. view of north end of 1963 addition/gymnasium 	8. view of NE side of1960 addition

9. view of north and est side of 1956 bldg 	10. entry doors in 1963 addition 	11. infill panels of original windows of 1956 bldg 	12. typical downspout condition – all need to be replaced – alsop air movement staining along window
13. west entry to school and Montessori programme area 	14. cracking settlement of 1956 bldg 	15. typical condition of exposed grade beam of 1956 bldg 	16. ext canopy at 1956 exit door

17. infill panels at original window locations need replacing 	18. infill panels at original window locations need replacing 	19. Cracking/settlement in exterior wall/foundations near NW school entry 	20. exhaust from home ec room near front entrance
21. Cracking/settlement slab at main entrance doors 	22. typical main floor classroom in 1963 addition 	23. typical main floor classroom in 1963 addition 	24. Cracking/settlement in washrooms of 1963 addition

25. typical interior millwork condition: structurally sound but needs refinishing 	26. view looking west in 1963 addition – entrance on right side of photo 	27. view looking north in 1963 addition 	28. view of ramp up to 1963 addition floor level
29. typical vanity detail main and upper floor 1960 addition 	30. metal clad door to 1960 addition – no fire labels 	31. view of corridor in 1960 addition 	32. typical classroom

33. landing uneven in NW stair of 1960 addition 	34. folding partition in lower floor 1960 addition 	35. typical wood door and frame condition – needs refinishing 	36. Home Ec room – main floor 1956 bldg: very good condition
37. Note damage to floor and step up to main gym floor level 	38. 1956 locker rooms – good condition 	39. typical upper floor classroom 1956 bldg. 	40. science lab upper floor 1956 bldg

41. Typical upper floor classroom, 1056 bldg 	42. Ponding on roof of 1963 addition 	43. Cracking/settlement in ME stair of 1960 addition 	44. Ramp up to new floor level of main gymnasium
45. Main gymnasium: new floors, good condition space 			

FACILITY EVALUATION TEMPLATE

SITE NAME: Britannia School

BUILDING NAME: Britannia School

Evaluation Date: March 23, 2016

Evaluated By: Williams Eng Mechanical – Zheng Ling

Notes:
Four ratings are listed

- 1 = Critical: Unsafe, high risk of injury or system failure.
- 2 = Operating at minimum capacity. Significant deficiencies. Above average operating maintenance costs.
- 3 = Reached end of life cycle. Still operating adequately.
- 4 = as new, state of the art meets present and foreseeable requirements.

System	Description	Recommended Action Concerns	QTY/Area	Rating
MECHANICAL **HEATING** Heating Plant	One original Beaver Boiler (BG600, 600 MBH input) hot water heating boilers with pumps, expansion tanks and accessories are located in the mechanical room service the building. Whole system is in poor condition.	A new boiler plant including boilers, pumps, tanks, flues, combustion air and controls should be provided.	600 MBH input	3
Terminal Heating Units and Distribution Systems	Terminal ventilator or fan coil units in classrooms and offices provide heating.	Existing fan coil system should be replaced with a brand new terminal heating system for heating purpose when new ventilation system is provided.	20,000 sqft	3

System	Description	Recommended Action Concerns	QTY/Area	Rating
VENTILATION AND AIR CONDITIONING Air Handling Units	One original indoor indirect gas fired AHU (350 MBH input) in west mechanical room. The unit is on poor condition. Furnaces in some classrooms and east mechanical room are in fair condition.	The existing ventilation units is nearing life expectancy. It should be replaced. Some units are close to life expectancy but still operating. Replacement is only recommended when malfunction or deficiency is experienced or observed.	1 15	3 3
Individual room ventilators	Individual room unit ventilators serve south facing exterior classrooms and offices.	Unit ventilators are beyond life expectancy and do not meet ASHARE ventilation requirements. Demolish all the unit ventilators. Provide a new MAU unit to serve the classrooms to meet ASHRAE and AI design guide. Mechanical cooling and energy recovery are optional.	1@7500 cfm S/A & E/A ductwork & diffusers	2
Exhaust Fans	Washroom and building exhaust is provided by several rooftop exhaust fans.	The exhaust fans are in acceptable condition. Their anticipated life span will not be adequate for a new/expansion building and should be replaced for any future school renovations.	4	3
Duct Distribution, Grilles and Inlets/Outlets	Ductwork associated with AHU units are either in concealed space or exposed.	Duct distribution and grilles are in acceptable condition.		3
Humidification	There are no humidifier in air system.	All air systems should be provided with new humidification systems and associated controls.	2	3
Packaged Air Conditioning Units	The server room has DX unit providing cooling.	The unit is in good condition.		4

System	Description	Recommended Action Concerns	QTY/Area	Rating
BUILDING SYSTEM CONTROLS Energy Management Control Systems	The existing system consists of pneumatic and electric controls. There is an air compressor in the main mechanical room that serves the pneumatic system.	The pneumatic/electric controls systems should be replaced with a DDC system to optimize energy utilization and provide accurate control of systems and remote access and monitoring. All terminal control devices (valves, thermostats, dampers, etc.) should also be replaced with electronic devices.	1/5758 sqm	3
PLUMBING SYSTEMS Domestic Hot Water	Two gas-fired water heaters located in each mechanical room and serve the building.	The domestic hot water heating system is in acceptable condition. Replacement is only recommended when malfunction or deficiency is experienced or observed.	2	3
Plumbing Fixtures	Standard plumbing fixtures are provided in washrooms and public areas per design	All fixtures are in acceptable condition. Refer to Architectural section for any required modification.	2	3
Domestic Water Piping, Valves and Insulation	Most domestic water line is original condition.	The domestic piping system and valves are in acceptable condition. Piping insulation should be investigated for asbestos content. Water content analysis is recommended for potential contamination.	1	3
Sanitary and Vent Piping System	Existing piping system for the sanitary and vent seems adequate.	The sanitary and vent systems are in acceptable condition. A video camera investigation of the underground sanitary system should be conducted.	1	3
Storm Piping System	Building storm system is original.	The storm system is in acceptable condition. A video camera investigation of the underground storm system should be conducted.	1	3
Domestic Water Service	One water meter is located in east mechanical room. There is no back flow preventer upstream of water meter.	Backflow preventer shall be provided before water meter. The incoming water service should be reviewed and upgraded for a new sprinkler system should one be required.	1	1
Natural Gas Service	The gas meter is located inside west mechanical room.	The existing gas service is in acceptable condition. It is recommended to relocate gas meter to outdoor per gas company's requirement. Gas loads should be reviewed if new gas fired equipment is added.	1	3

System	Description	Recommended Action Concerns	QTY/Area	Rating
FIRE PROTECTION SYSTEMS Wet Protection Systems	There is no fire sprinkler system.	Local authorities should be consulted as to if a new wet sprinkler system is required.	1	3
Fire Extinguishers and Cabinets	Wall hung exposed fire extinguishers are provided throughout the building.	Semi-recessed extinguisher with cabinet should be provided in lieu of surface mounted to prevent damage or accidental initiation of the extinguisher.	10	3

File No. 034952

April 13, 20166

Attention: Bill Vance

Subject: Britannia School
Facility Evaluation Summary

16018 104 AVE
Edmonton AB

Introduction

Williams Engineering visited the site on March 23, 2016 to review the existing mechanical systems.

Existing condition summary and required upgrades

- Services – Original water meter resides in the east mechanical room and serves the building domestic system. Backflow preventer is required before water meter per current ABC. The low pressure gas meter is within west mechanical room. The gas meter should be located outdoors in a fenced lockable enclosure. Both sanitary and storm line exit building separately and tie into services on site.

- Plumbing – Total two domestic hot water heaters installed inside each mechanical room service the building. Standard plumbing fixtures are provided in washrooms and public areas per design. Fixtures are properly maintained and in good condition. It is suggested doing a water content analysis and check if any contamination exists inside drinking water.

- Heating/Cooling – One original Beaver Boiler (BG600, 600 MBH input) was installed in east mechanical room and serve heating terminals inside building. One original obsolete chiller in east mechanical room should be removed. The server room has a DX cooling unit providing cooling. The existing boiler plant should be replaced as most original equipment is close to end of life cycle. This will include boilers, pumps, associated piping in mechanical room, combustion air, flues, etc. Fan coil units are installed along exterior wall and should be removed with ventilation upgrade. Brand new terminal heating system should be provided to replace the fan coil system. Some classrooms have dedicated furnace in each room that has no need to upgrade.

- Ventilation – There is one indoor indirect gas fired AHU in west mechanical room serve some classrooms and central common areas. The unit is in poor condition and should be replaced. Some classrooms and offices along exterior wall rely on wall grilles as fan coil unit O/A intake. There is no effective way to maintain required O/A air flow to each area. Three furnaces (Carrier 58CTA090 @2, Lennox 80UHG-45 @ 1) in east mechanical room serve old Gym area and adjacent common area.

- Fire Protection – The building is equipped with surface mounted fire extinguishers. The extinguisher unit should be inside cabinet in public area.

- Controls – The School is served by original pneumatic controls connected to a DDC system. A new DDC control system is recommended to ensure all systems operate as efficiently and effectively as possible per AI design guide.

Building Code review requirements and required upgrades

- Services – Underground sanitary and storm services should be scoped with a video camera to check any damage and leakage. Water service size should be increased if a sprinkler system is required per AHJ.

- Plumbing – Refer to Architect for any required modification.

- Ventilation – The classrooms and offices along exterior wall rely on wall grilles as direct O/A intake for each fan coil unit. The required O/A flow rate per ASHRAE62 can't be maintained due to freezing protection in winter season. Existing fan coil ventilating units system should be removed and replaced with a new central ventilation unit to ensure proper air change rates, ventilation rates per ASHRAE standards, and avoid the operating noise from existing fan coil unit in each classroom. Existing central AHU unit in west mechanical room should be replaced and air system should be rebalanced to make sure proper O/A flow rate and indoor air change are maintained per ASHRAE62 and AI design guide.

- Heating/Cooling – All the fan coil units and associated piping will be removed with new ventilation system installed.

- Fire Protection – Local Authorities should be consulted regarding fire protection requirements. A new sprinkler system may be mandatory if proposed renovation leads to code compliance issue that requires whole building to conform to ABC 2014.

Costing Summary

Conclusions

In general, the mechanical components are in fair to poor condition. Replacement of central AHU unit and the boiler plant is required as these components are near or beyond life expectancy, do not meet code requirements and/or are energy inefficient. Terminal ventilators or fan coils should be replaced per ventilation standards. Fire protection requirements should be reviewed by Local Authorities to ensure code compliance. A new DDC control system is recommended.

Yours truly,
Williams Engineering Canada Inc.

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FACILITY EVALUATION

SITE NAME: Britannia Junior High School

BUILDING NAME: Britannia Junior High School

Evaluation Date: March 23, 2016

Evaluated By: Williams Engineering Canada Inc.
Pawel Stefanczyk

Notes:
Four ratings are listed

- 1 = Critical: Unsafe, high risk of injury or system failure.
- 2 = Operating at minimum capacity. Significant deficiencies. Above average operating maintenance costs.
- 3 = End of Life Cycle, performing adequately
- 4 = as new, state of the art meets present and foreseeable requirements.

System	Description	Recommended Action Concerns	QTY/Area	Rating
BUILDING ELECTRICAL				
POWER DISTRIBUTION				
SERVICE ENTRY	Pole mounted transformer	No concerns (equipment is EPCOR's property)	n/a	n/a
	Underground feeders	Condition not assessed, given age of the equipment recommended replacement	1	n/a
	Babco Electric Main Distribution Panel 800AT/800AF 3P main breaker 800A 120/208V 3Ph 4W distribution Panel	Replacement panel was installed in 1982, appearing to operate and to be in good condition	1	3
SUB-PANELS, CONDUIT AND WIREWAYS	Federal Pioneer 120/208V branch circuit panels installed throughout the building	Replacement panel were installed in 1982, appearing to operate and to be in good condition	1	3
	Panels A, CP, P, 2nd floor east	Panel installed during original building construction in 1956, breakers worn out, replacement parts not	1	2

System	Description	Recommended Action Concerns	QTY/Area	Rating
		available		
APPLIANCES/RECEPTACLES	Power receptacles installed throughout the building	Low number of receptacles. It is recommended to supplement system with additional devices.	300	2
GROUNDING AND STATIC CONTROL	Building Ground	System not assessed, however given age of the building is recommended to replace building ground grid.	1	n/a
LIGHTING				
Building Exterior	Exterior lighting comprised of building mounted High Pressure Sodium fixtures Exterior lights controlled utilizing mechanical timer	Exterior lighting replaced in 1990 is appearing to operate adequately Controller was installed in 1956	20 	3 2
Building Interior	Interior lighting is primarily T8 fluorescent lighting with electronic ballasts Gymnasium T5HO fixtures Lights controlled by line voltage switches	Interior lighting replaced in 1998 is appearing to operate and to be in good condition Gymnasium lighting replaced in 2005 Switches installed in 1956	1000 	4 4 2
EMERGENCY SYSTEMS				
EXIT/EMERGENCY LIGHTING	Emergency lighting is provided by battery packs and remote lighting heads throughout the building Gymnasium exit signs	Fixtures installed in 2005 are in good condition. Original building signs installed in 1956	50 4	4 2
FIRE ALARM AND DETECTION	Edward 6636, hardwired	System installed in 1990 is at end of its service life. Recommended replacement.	1	2
SECURITY	Intrusion detection – Magnum Alert Security System	System installed in 2000, appears to be in good condition.	1	4
COMMUNICATIONS				
TELEPHONE SYSTEM	Nortel Norstar System	System installed in 2000, appears to be in good condition.	1	4
T.V./COMPUTER	Incoming Supernet service. Ethernet system throughout the school utilizing Cat. 5 cabling	No concerns (property of Bell Axia). System installed upgraded in 2005, appears to be in good condition.	1 150	n/a 4
INTERCOM/PUBLIC ADDRESS	Bogen TPU 1008 integrated with	System installed in 1996, at end of its service live	1	3

System	Description	Recommended Action Concerns	QTY/Area	Rating
	telephone system	span. Recommended system replacement.		
CLOCK AND PROGRAM SYSTEM	Various clocks throughout facility	Clocks installed throughout the facility do not compose a system. Installation of centrally controlled clock system would be recommended.	50	2
COMMUNICATIONS - OTHER	Personal Voice Amplification system installed in classrooms. Stage Sound System	Standalone units currently installed in selected classrooms. No action required. Sound system appears to be outdated. Recommended system replacement.	28 1	4 3

File No. 034952.00

April 10, 20146

Attention: Bill Vance

Subject: Britannia Junior High School
Facility Evaluation Summary

16018 - 104 Avenue
Edmonton AB

Introduction

Williams Engineering visited the site on March 23rd, 2016 to review the existing electrical systems.

Observations

Topic

- Services – The building is currently serviced by u/g electrical service originating from a pad mounted transformer located on west side of the building. Telephone service comes through u/g conduit from line mounted on the power line poles.
- Electrical distribution – system consists of 800A 120/208V 4 wire Babco Electric Main Distribution Panel, branch circuit panels, motor starters, and branch wiring. Main distribution equipment and subdistribution panels were installed during school overhaul in 1982. These panels are approaching end of their service life.
- Panels A, CP, P, 2nd floor east were installed during original building construction in 1956, breakers worn out, and replacement parts not available.
- Lighting System – system is primarily comprised of fluorescent light fixtures. Majority of light fixtures uses T8 lamps. The system was upgraded in 1998 and 2005 and is in good condition.
- Life Safety System – system contains hardwired Edwards 6638 panel installed in 1990, battery operated emergency lighting and exit signage installed in 2005 in the building.
- Communications system – intrusion detection, telephone system, LAN system and PA system are installed in the building. Those systems were installed in 1996 and 2005 and being in good condition.

Recommendations

1. Services – incoming services to the building are being maintained by the respective utility companies and are in good condition. No necessities for any immediate changes or upgrades of those systems currently exist.

2. Electrical distribution – the main distribution panel is in fair condition; however is approaching end of its service life. The panels are past their service life and should be replaced. Given age of the branch wiring system is at the end of its service life.

3. Lighting system – luminaires are generally in good condition. The lighting was upgraded with newer technology fluorescent lamps back in 1996 and 2005.

4. Life safety system – fire alarm system is at end of its life cycle and replacement of the system is recommended. Emergency lighting and exit signage is in good condition.

5. Communications system – the system appears to be in good condition.

Conclusions

In general, the electrical components are in various conditions. Replacement of electrical distribution equipment and fire alarm system is highly recommended. Also, it would be recommended to replace building wiring when major renovation in the building happens.

Yours truly,

Williams Engineering Canada Inc.

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Electrical

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PJS/pjs

Q:\2016\16.704 EPSB Value Study\B Management\B80 Research & Reports\B88 Field Reports\B88.2 Site Reviews\B88.2a Architectural\160321 Mayfield School\160418 DRAFT Report\WE Material\Britannia_summary.docx

FACILITY EVALUATION

SITE NAME: Britannia Junior High School

BUILDING NAME: Britannia Junior High School

Evaluation Date: April 1, 2016

Evaluated By: Williams Engineering Canada Inc.
Jatinder Jassal

Notes:
Four ratings are listed

- 1 = Critical: Unsafe, high risk of injury or system failure.
- 2 = Operating at minimum capacity. Significant deficiencies. Above average operating maintenance costs.
- 3 = End of Life Cycle, performing adequately
- 4 = as new, state of the art meets present and foreseeable requirements.

System	Description	Recommended Action Concerns	QTY/Area	Rating
Site Grading and Pavement Structures				
Cracks in Sidewalk	Longitudinal and transverse cracks observed on site concrete sidewalks	Seal cracks or replace concrete sidewalks		2
Pot Holes and Ruts in Asphalt	There were areas where potholes, ruts, cracks and alligator cracking observed in the asphalt	Crack Sealing and pot hole repairs. In certain areas, entire asphalt structure needs to be replaced		2
Organics Growing in Asphalt	Organics growing in the asphalt was observed, which illustrates a structure failure	Replace structure		2
Negative/Low spots at building	Low spots around the building were observed, which does not allow for positive drainage away from the building	Revise Grading		2
Site Landscaping	There were areas where no grass was going, due to vehicles driving on top of landscaping	Landscaping Required		2
Curbs deteriorating	Curbs being deteriorated were observed	Replace Curbs		2

Appendix A

Building Code Overview

This section is an overview related to issues of compliance with the Alberta Building Code (A.B.C.) 2014 Edition. It is not all-encompassing and a thorough Code review (and confirmation with the City Code Authority) needs to be undertaken before any modifications are contemplated and construction documents produced.

Conformance to the 2014 A.B.C. is not a requirement as construction or condition that lawfully existed before May 01 2015 is acceptable, provided it does not constitute an unsafe condition. It is assumed that Britannia Junior High School conforms to Codes in effect at the time of its original construction and at the time of the two subsequent additions.

The 1956 original building and the 1960 and 1963 additions are reviewed together.

General Characteristics:

Major Occupancy: Group A Division 2 Schools

Multiple Occupancies: No

Building Areas:	1956 Building	3770 m2
	1960 Addition	1075 m2
	1965 Addition	912 m2
	Total	5757 m2

Facing 1 Streets

Combustible and Non Combustible Construction

No Sprinklers

Partial 2 Storeys High and Partial One Storey

3.2.2 Building Size and Construction Relative to Occupancy

Britannia Junior High School does not conform to any specific classification within the A.B.C. 2014. Requirements related to maximum area allowable, sprinklers, fire-separation between floor levels, fire-resistance rating of structural elements, characteristics of exits, fire separations between classrooms and corridors, permitted travel distances to exits were considerably different at the time of construction of the original building in 1956 and the additions in 1960/1063. It is not reasonable to assess Britannia Junior High against the 2014 code.

Installation of sprinklers would improve the fire safety of the building but in itself would not upgrade it to confirm to current Building Code.

In the absence of a program or statement of objectives for a modernized Britannia Junior High School, detailed analysis of every aspect of the school that does not meet code is of little value. As

stated at the outset of this commentary, compliance is not a requirement if the school remains as is.

3.8 Barrier-Free Design

The requirements of this section apply to the school.

3.8.1.2.1 50% of the entrances to the school are required to be barrier-free, therefore 2 of the 3 required

3.8.1.3 These two entrances will require barrier-free path of travel from the City sidewalk & on-site parking.

At present only none of the entrances have power door openers and the main entrance has a set of stairs with no ramps or lift.

3.8.2.3 Washrooms are required to be barrier-free

School does have stalls that are intended to be Barrier-Free, although they may not meet every detailed requirement of 2014 Code.

A handicap lift at Britannia provides access to 2nd Floor Level.

3.8.3 Design Standards

3.8.3.1 Accessibility signage is required identifying barrier-free entrances & washrooms, incorporating the international symbol of accessibility for persons with disabilities.

3.8.3.2 Exterior walks may need upgrading to conform to specific detail requirements of 3.8.3.2.

3.8.3.3.1 Existing doors appear to be of sufficient width to provide the required 850mm clear opening

3.8.3.3.3 Door operating devices (locksets /latchsets with round knobs) will need to be replaced with lever handle hardware, so as not to require tight grasping or twisting of the wrist.

3.8.3.3.5 Power door opener required to all barrier-free entrances

None provided at present.

3.8.3.8 , 3.8.3.9 & 3.8.3.10 Washrooms may need further modifications to conform fully (Water Closet Stalls, Water Closets, Urinals, Lavatories, Mirrors, Grab Bars, Etc.)

3.8.3.16 At least one barrier-free Drinking Fountain is required.

3.7.2.2 Water Closets

3.7.2.2 7) - one WC per 30 boys / per 25 girls

23 classrooms of 30 students = 690 students (345 boys, 345 girls)

Need 345/30 = 12 WCs for boys (8 urinals, 4 WCs)

Need 345/25 = 14 WCs for girls

13 WC's , 3 urinals provided for boys.

13 WC's provided for girls.

There are an additional two staff WC.'s (men's and women's) and two additional WC's in the Montessori programme area

Provision of washrooms for students appears to be just short for girls and over for boys.

Overall provision of washrooms seems to almost satisfy 3.7.2.2

Other

Although not an Alberta Building Code issue, it was noted that Georgian Wire Glass (GWG) can be found in many doors/sidelights throughout the school. EPSB requested that presence of GWG be identified and replaced with clear tempered or laminated glass

No open handrails where spacing of elements might permit an object to fall through or rails to low, constituting a safety concern were observed in the building

EDMONTON PUBLIC SCHOOLS

NO.	REVISION	BY	DATE

ADDRESS
16018 - 104 AVENUE
EDMONTON, AB T5P 0S3

SCHOOL BRITANNIA JUNIOR HIGH

PROJECT

SCALE 1/16" = 1'-0"

CO-ORDINATOR TERRI

DRAWING MAIN FLOOR PLAN

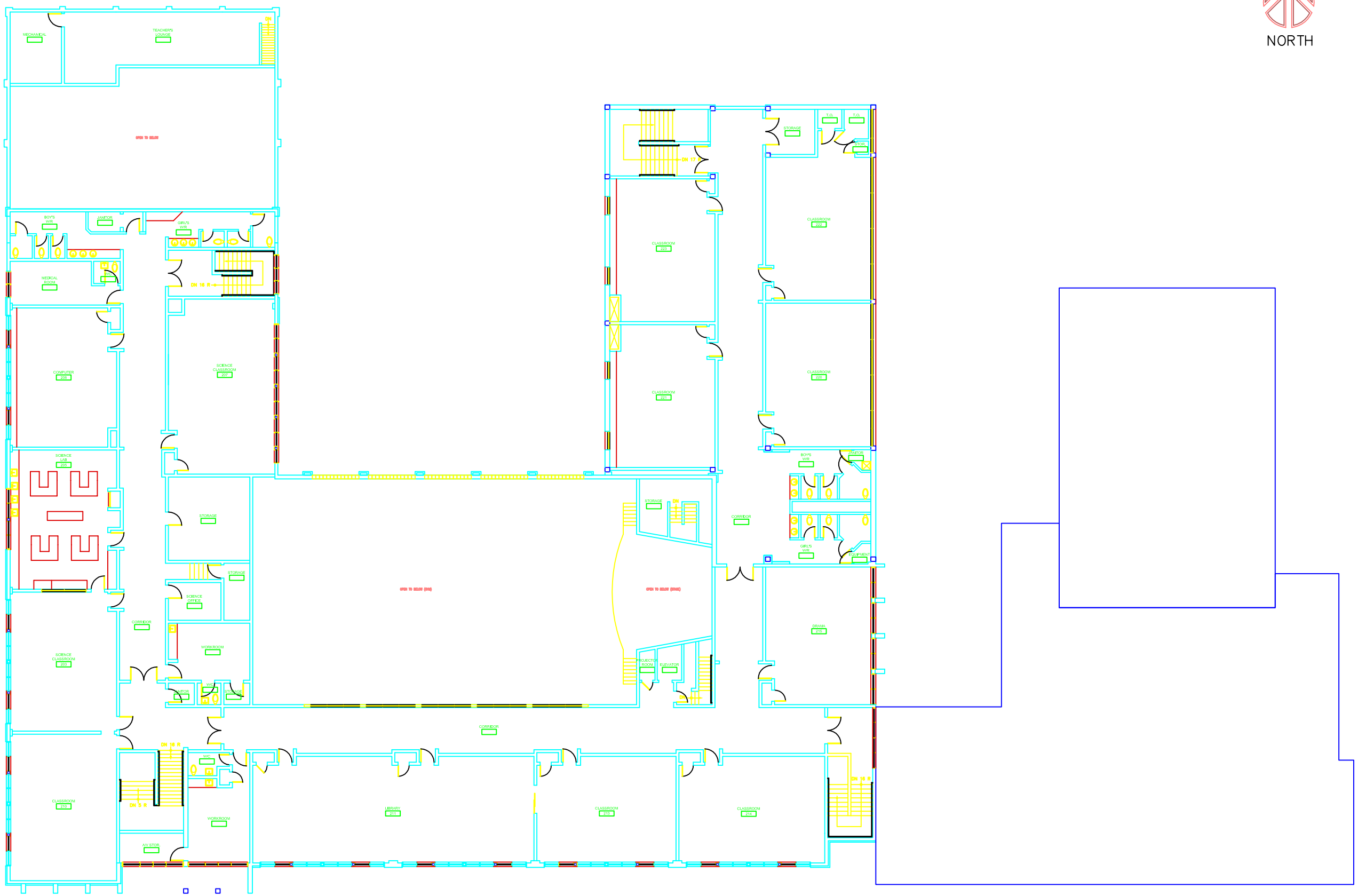
DRAWN C.L.

REVISION

DATE 2015-06-10

SHEET OF 1 2

DRW'G. NO. 551-1



EDMONTON PUBLIC SCHOOLS

NO.	REVISION	BY	DATE

ADDRESS
16018 104 AVE
EDMONTON, AB T5P 0S3

SCHOOL BRITANNIA JUNIOR HIGH

PROJECT

SCALE	CO-ORDINATOR	DRAWING	
1/16" = 1'-0"	TERRI	SECOND FLOOR PLAN	
DRAWN	**REVISION**	**DATE**	**SHEET OF** / **DRW'G. NO.**
C.L.		2015-06-10	2 2 / 551-2

Uniformat Listing	Theoretical Life
B2010.01.06.03 Metal Siding**	40
B2010.01.06.04 Wood Siding**	40
B2010.01.06.05 Vinyl Siding**	30
B2010.01.11 Joint Sealers (caulking): Ext. Wall**	20
B2010.01.13 Paints (& Stains): Exterior Wall**	15
B2020.01.01.01 Steel Windows (Glass & Frame)**	40
B2020.01.01.02 Aluminum Windows (Glass & Frame)**	40
B2020.01.01.05 Wood Windows (Glass & Frame)**	35
B2020.01.01.06 Vinyl, Fibreglass &Plastic Windows**	40
B2020.02 Storefronts: Windows**	40
B2020.03 Glazed Curtain Wall**	40
B2030.01.01 Aluminum-Framed Storefronts: Doors**	30
B2030.01.02 Steel-Framed Storefronts: Doors**	30
B2030.01.05 All Glass Entrances and Storefronts: Doors**	30
B2030.01.06 Automatic Entrance Doors**	30
B2030.01.10 Wood Entrance Door**	30
B2030.02 Exterior Utility Doors**	40
B3010.02.01.01 Asphalt Shingles**	25
B3010.02.01.07 Wood Shingles**	30
B3010.02.01.08 Wood Shakes**	30
B3010.02.02 Roofing Tiles**	30
B3010.04.01 Built-up Bituminous Roofing (Asphalt & Gravel)**	25
B3010.04.02 Cold-Applied Bituminous Roofing**	25
B3010.04.03 Roll Roofing**	25
B3010.04.04 Modified Bituminous Membrane Roofing (SBS)**	25
B3010.04.05 Membrane Roofing (Single Ply, EPDM, PVC, TPO)**	25
B3010.04.06 Fluid-Applied Roofing**	25
B3010.04.07 Coated Foamed Roofing**	25
B3010.04.08 Membrane Roofing (Inverted/ Protected)**	30
B3010.05 Traffic Coatings: Exterior**	15
B3010.07 Sheet Metal Roofing**	40
B3010.08.02 Metal Gutters and Downspouts**	30
B3020.01 Skylights**	25
C1010.03 Interior Operable Folding Panel Partitions**	30
C1030.01 Visual Display Boards**	20
C1030.02 Fabricated Compartments(Toilets/Showers)**	30
C1030.10 Lockers**	30
C2020.05 Resilient Stair Finishes**	20
C2020.06 Carpet Stair Finishes**	10
C3010.02 Wall Paneling**	30
C3010.06 Tile Wall Finishes**	40
C3010.09 Acoustical Wall Treatment**	20
C3020.02 Tile Floor Finishes**	50
C3020.04 Wood Flooring**	30
C3020.07 Resilient Flooring**	20
C3020.08 Carpet Flooring**	15
C3020.09 Access Flooring**	25
C3020.13 Traffic Coating: Interior**	25
C3030.06 Acoustic Ceiling Treatment (Susp.T-Bar)**	25
D1010.01.01 Electric Traction Passenger Elevators**	30
D1010.01.02 Hydraulic Passenger Elevators**	30

Uniformat Listing	Theoretical Life
D1010.01.03 Electric Traction Freight Elevators**	30
D1010.01.04 Hydraulic Freight Elevators**	30
D1010.02 Lifts**	25
D1020 Escalators and Moving Walks**	25
D2010.04 Sinks**	30
D2010.05 Showers**	30
D2010.06 Bathtubs**	30
D2010.08 Drinking Fountains / Coolers**	35
D2010.10 Washroom Fixtures (WC, Lav, Urnl)**	35
D2020.01.02 Valves: Domestic Water**	40
D2020.01.03 Piping Specialties (Backflow Preventors)**	20
D2020.02.02 Plumbing Pumps: Domestic Water**	20
D2020.02.03 Water Storage Tanks**	30
D2020.02.04 Domestic Water Conditioning Equipment**	20
D2020.02.06 Domestic Water Heaters**	20
D2090.01 Compressed Air Systems (Non Controls)**	30
D2090.02 Deionized Water Systems**	30
D2090.03 Distilled Water Systems**	30
D2090.10 Nitrous Oxide Gas Systems**	30
D2090.11 Oxygen Gas Systems**	30
D2090.12 Reverse Osmosis Systems**	30
D2090.13 Vacuum Systems (Medical)**	30
D2090.14 Acid Waste Systems**	30
D2090.15 Pool & Fountain Equipment**	20
D3020.01.01 Heating Boilers & Accessories: Steam**	35
D3020.01.03 Chimneys (&Comb. Air) : Steam Boilers**	35
D3020.02.01 Heating Boilers and Accessories: H.W.**	35
D3020.02.02 Chimneys (&Comb. Air): H.W. Boiler**	35
D3020.03.01 Furnaces**	25
D3020.04.01 Fuel-Fired Duct Heaters**	30
D3020.04.02 Fuel-Fired Radiant Heaters**	30
D3020.04.03 Fuel-Fired Unit Heaters**	30
D3030.01 Absorption Water Chillers**	25
D3030.02 Centrifugal Water Chillers**	25
D3030.03 Reciprocating Water Chillers**	25
D3030.04 Rotary-Screw Water Chillers**	25
D3030.05 Cooling Towers**	25
D3030.06.01 Refrigeration Compressors**	25
D3030.06.02 Refrigerant Condensing Units**	25
D3030.07 Heat Pumps**	15
D3040.01.01 Air Handling Units: Air Distribution**	30
D3040.01.06 Air Terminal Units: Air Distribution (VAV Box)**	30
D3040.02 Steam Distribution Systems: Piping/Pumps**	40
D3040.03.01 Hot Water Distribution Systems**	40
D3040.03.02 Chilled Water Distribution Systems**	40
D3040.04.01 Fans: Exhaust**	30
D3040.05 Heat Exchangers**	30
D3050.01.01 Computer Room Air Conditioning Units**	30
D3050.01.02 Packaged Rooftop Air Conditioning Units (& Heating Units)**	30
D3050.01.04 Unit Air Conditioners**	30
D3050.02 Air Coils**	30

Uniformat Listing	Theoretical Life
D3050.03 Humidifiers**	25
D3050.05.01 Convectors**	40
D3050.05.02 Fan Coil Units**	30
D3050.05.03 Finned Tube Radiation**	40
D3050.05.04 Induction Units**	30
D3050.05.06 Unit Heaters**	30
D3050.05.07 Unit Ventilators**	30
D3050.05.08 Radiant Heating (Ceiling & Floor)**	35
D3060.02.01 Electric and Electronic Controls**	30
D3060.02.02 Pneumatic Controls**	40
D3060.02.05 Building Systems Controls (BMCS, EMCS)**	20
D4090.02 Carbon Dioxide Fire Extinguishing Systems**	40
D4090.03 Clean Agent Extinguishing Systems**	40
D4090.04 Dry Chemical Fire Extinguishing Systems (Kitchen Hood)**	40
D4090.05 Halon Extinguishing Systems**	40
D4090.06 Smoke Protection & Exhaust Fans**	40
D5010.01 Main Electrical Transformers**	40
D5010.02 Secondary Electrical Transformers (Interior)**	40
D5010.03 Main Electrical Switchboards (Main Distribution)**	40
D5010.05 Electrical Branch Circuit Panelboards (Secondary Distribution)**	30
D5010.07.01 Switchboards, Panelboards, and (Motor) Control Centers**	30
D5010.07.02 Motor Starters and Accessories**	30
D5010.07.03 Variable Frequency Drives**	30
D5020.02.02.02 Interior Florescent Fixtures**	30
D5020.02.03.02 Emergency Lighting Battery Packs**	20
D5030.01 Detection and Fire Alarm**	25
D5030.02.02 Intrusion Detection**	25
D5030.02.03 Security Access**	25
D5030.02.04 Video Surveillance**	25
D5030.04.03 Call Systems**	25
D5030.05 Public Address and Music Systems**	20
D5090.01 Uninterruptible Power Supply Systems**	30
D5090.02 Packaged Engine Generator Systems (Emergency Power System)**	35
E2010.02 Fixed Casework**	35
E2010.03.01 Blinds**	30
E2010.03.06 Curtains and Drapes**	30
E2010.05 Fixed Multiple Seating**	35
F1010.02.04 Portable and Mobile Buildings**	30
F1010.02.05 Grandstands and Bleachers**	30
G2010.02.02 Flexible Pavement Roadway (Asphalt)**	25
G2010.04 Rigid Roadway Pavement (Concrete)**	25
G2020.02.02 Flexible Paving Parking Lots(Asphalt)**	25
G2020.04 Rigid Parking Lot Pavement (Concrete)**	25
G2030.02.02 Asphalt Pedestrain Pavement**	20
G2030.03 Pedestrian Unit Pavers**	20
G2030.04 Rigid Pedestrian Pavement (Concrete)**	25
G2040.02.05 Wood Fences and Gates**	30
G2040.03 Athletic and Recreational Surfaces**	25

Apendix B – Costs

Costs – Introduction

The overall estimate summary amount is greater than the sum of the individual items because various project costs are added in order to generate a Total Project Cost (i.e. as if EPS were to include all the scope items into a single project and take it from the initial stages of design through construction completion).

For example:

- Contractor's General Conditions and Fee - to pay for site supervision, safety, office trailer, temporary power/heat, tools, etc. and to allow a fair and reasonable profit to the work
- Contingencies:
    - Project Contingency (or Design Allowance) - An allowance for design changes during the development of the design. The allowance is to cover unforeseen items during the design phase that do not change the project scope. The allowance, which is included in the primary stages, is ultimately absorbed into the design and quantified work as more detailed information becomes available and is therefore normally reduced to zero at tender stage
    - Construction Contingency - An allowance for changes to the contract price during construction. The allowance is to cover unforeseen items during the construction period which will result in change orders
    - Phasing Contingency - An allowance for increased requirements for projects being executed in multiple phases. This restriction leads to increased costs due to increased temporary protection requirements, etc.
- Soft/Other Costs:
    - Project Admin - costs associated with EPS's administration of the project (could be an internal PM, etc.)
    - Design Fees - costs for design and contract administration of the project
    - Furnishings & Equipment - typical allowance in order to furnish the modernized school with new Furnishings and Equipment
- Non-refundable GST - typically, school boards do not pay full amount of GST, so these costs are shown in order to illustrate the full cost of the project

The reason each of these add-ons are not applied to each individual scope item is that particular approach isn't truly realistic for smaller individual scopes of work (i.e. a site trailer would not be brought on site to execute a minor scope item). But when all scopes are packed into a larger project and the timeline becomes longer term then economies of scale may be realized in terms of individual items' pricing with a slight offset in General conditions. In the long run, it should be cheaper and faster to do all the scopes in one large project rather than piece-meal.

For mathematical sake, it should also be noted that on the summary page the sum of the sections A. Demolition and B. Preservation/Modernization equals the sum of the individual items for all schools.

PROGRAM AREA (m²)	A Demolition	B Preservation	C New	D Modulars	E Other	Total (B+C+D+E)
Architectural	0	5,758	0	0	0	5,758
Mechanical	0	5,758	0	0	0	5,758
Electrical	0	5,758	0	0	0	5,758
Civil / Site	0	5,758	0	0	0	5,758
Modulars	0	0	0	0	0	0
Demo - Selective	5,758	0	0	0	0	0
TOTAL :	**5,758**	**5,758**	**0**	**0**	**0**	**5,758**

CAPITAL COST

A Demolition				
Demo - Selective	5,758 m²	$100.00		$575,800
Hazmat - Selective	5,758 m²	$50.00		$287,900
A Demolition Net :				**$863,700**
B Preservation/Modernization				
Architectural	5,758 m²	$700.60		$4,034,078
Mechanical	5,758 m²	$512.26		$2,949,611
Electrical	5,758 m²	$201.53		$1,160,381
Civil / Site	5,758 m²	$52.97		$305,000
B Preservation/Modernization Net :				**$8,449,070**
C New/Expansion				
New Construction	0 m²	$0.00		$0
C New/Expansion Net :				**$0**
D Modular's				
Construction	0 m²	$0.00		$0
D Modular's Net :				**$0**
E Other				$9,312,770
GC's & Fee		15.0%		$1,396,915
Other Net :				**$1,396,915**
Z Contingencies				$10,709,685
Project		5.0%		$535,484
Construction		7.0%		$749,678
Phasing		3.0%		$321,291
Z Contingencies Net :				**$1,606,453**
(A+B+C+D+E+Z) Construction Net :				**$12,316,138**
Soft/Other Costs				
Project Admin		2.0%		$246,323
Design Fees		10.0%		$1,231,614
Furnishings & Equipment		4.0%		$492,646
Soft/Other Net :				**$1,970,582**
SUB-TOTAL				**$14,286,720**
Non-refundable GST		1.60%		$228,588
CAPITAL COST TOTAL (April 2016 $)				**$14,515,308**
Escalation				$0
CAPITAL COST TOTAL				**$14,515,308**

SITE NAME: Britannia Junior High School Site

BUILDING NAME: Britannia Junior High School

BUILDING AREA (m2): 5,758

System	Description	Recommended Action Concerns	QTY/Area	Rating	Upgrade Replacement Cost	TCCL Assumed Scope	TCCL QTY	TCCL Unit	TCCL Rate	TCCL Sub-Total Construction
ARCHITECURAL										
Building General Summary	Grades 7-9 School, original built in 1956, original area - 3770 m2, two storey, combustible & non- combustible construction, non sprinklered; First Addition in 1960, area – 1075 m2, two storey, combustible & con combustible construction, non sprinklered; Second addition in 1963, are 912 m2, single storey, non-combustible construction, unsprinklered Gross Area 5758 m2 The school has had the following upgrades: 1956 bldg: Admin area was renovated in 1983 and refinished in 2004 1956 bldg: Library was renovated in 1997. 1956 bldg: Industrial shop became Phoenix Day Care in 2001 and then Montessori Programme area in 2014 The school contains 12 general classrooms (not including the space utilized for the Montesorri programme), 2 science classroom2 with one prep room, a library, a music room, a drama room, an art room, three computer rooms, sewing room, home economics room & two gymnasiums , and administration & support spaces	Overall building condition currently acceptable though building envelope is poor (windows, walls etc) and many interior components though in very good condition, are nearing the end of their design lifecycle and								
Building Site Summary	School faces two streets, 161 Street on the west and main entrance facing 104 avenue on the south. Bus loading and pick up zone is along 104 Avenue. An asphalt paved service lane is along the east side of the property with and asphalt staff parking area on the west side immediately adjacent to the school. There is a small gravel parking area on the east side of the building. Sidewalks are provided along the north, west and south sides of the school Site is generally flat with grassed playfields & play equipment to the north and lawn immediately adjacent around the perimeter of the school building. Mature trees grow on the south side of the school. Site has a number of mature trees & shrubs around the building and throughout site.					See Civil details below				
Structure Summary	1956 Section – Concrete block on concrete foundation walls on concrete strip footings along perimeter and interior corridor walls with concrete slab on grade floor. Gymnasium roof has structural stramit panels on purlins and laminated wood beams on load bearing concrete block. Typical roof has structural stramit panels on concrete beams on load bearing concrete blocks. Mezzanine for Stage area has wood joists on wood stud walls. Second floor structure is wood joists on light weight concrete block bearing walls					No scope required	0	ea	$0	$0
	1960 Addition – concrete block walls on concrete grade beams on concrete piles along the perimeter and concrete piles for interior load bearing walls; concrete slab on grade floor. Second floor and roof are concrete double tees on precast concrete beams along the perimeter.	Evidence of settling in north west stairwell that needs to be addressed		2	$4,000	Remove and replace SOG	40	m2	$94	$3,760
	1963 Addition – concrete block on concrete grade beams on concrete piles along the perimeter and along the interior load bearing walls, concrete slab on grade floor. Roof is concrete double tees on precast concrete beams along perimeter.			2		No scope required	0	ea	$0	$0

SITE NAME: Britannia Junior High School Site

BUILDING NAME: Britannia Junior High School

BUILDING AREA (m2): 5,758

System	Description	Recommended Action Concerns	QTY/Area	Rating	Upgrade Replacement Cost	TCCL Assumed Scope	TCCL QTY	TCCL Unit	TCCL Rate	TCCL Sub-Total Construction
Building Envelope Summary	BUR on two sections of the building (1956 and 1963) with SBS roofing on the 1960 addition. Minimal roof insulation (1956 -50 mm stramit, 1960/1963 – 38mm rigid insulation) Exterior walls: painted concrete block with sections of face brick and some exposed precast concrete beams. No indication of any insulation in the block and only minimal in walls (1956 – none, 1960-25mm rigid in minimal areas only, 1963-38mm batt insulation in minimal areas only) Some areas of 1956 building have had windows removed and infilled with wood framing and painted wood exterior finish with batt insulation in walls assembly. Windows primarily aluminum - complete units in 1960/1963 additions and inserts into original wood window frames in the 1956 areas. Single glazing in most windows			2		Details below				
Roofing	1956: BUR installed in 1987 and needs to be replaced as at end of lifespan and to upgrade insulation. School also reports leaking in several areas of this portion of the school 1960: SBS roofing installed in 2000 nearing end of lifespan and should be replaced with upgraded insulation 1063: BUR installed in 1963 and well past anticipated lifespan and with minimal insulation.	All roof membranes should be replaced along with upgrading of insulation.	1885 537.5 912	2 2 2	$646,000	Re-roof	3,335	m2	$194	$646,476
Walls	1956: Exterior concrete block and areas of face brick masonry. Some areas of vertical metal siding and some of painted wood cladding over infilled windows that have been removed from 1956 building. All exterior materials in very good condition, but there is little to no insulation in any of the wall assemblies. Evidence of air leakage in many areas of the 1956 building	Metal siding panels dented at west wall Replace siding at gymnasium		2 2	$34,000 $54,000	Replace metal siding Replace metal siding	150 240	m2 m2	$225 $225	$33,750 $54,000
Windows	1956: original wood windows in most locations; aluminum inserts were installed within 36 of the original wood frames in 2003. 1960: most of the original windows were replaced with aluminum windows in 2003, still some wood hoper windows remain. 1963: original aluminum double hung windows remain	All windows in the school should be replaced		2 2 2	$257,000	Replace windows	5,758	m2 GFA	$45	$257,095
Exterior Doors & Openings	All exterior openings were replaced in 2008. Most are metal doors with and frames with three primary entrances being steel framed storefronts with clear glass sidelights and doors with clear glass panels.	Doors and entrances in good condition with only minor repairs required (ie hardware and paint touchups)		3	$14,000	Misc Repairs and Paint	5,758	m2 GFA	$2.5	$14,395
Special Purpose Doors						N/A				
Special Features	Canopies (8 in total) typically wood framed over structure and have painted plywood finish. Most need to be repainted/replaced			2	$34,000	Replace wood canopies	8	ea	$5.9	$33,828
Envelope - Other						N/A				

SITE NAME: Britannia Junior High School Site

BUILDING NAME: Britannia Junior High School

BUILDING AREA (m2): 5,758

System	Description	Recommended Action Concerns	QTY/Area	Rating	Upgrade Replacement Cost	TCCL				
						Assumed Scope	QTY	Unit	Rate	Sub-Total Construction
Building Interior Summary	**1956 bldg**: original building typically has wood stud interior partitions, plaster walls and ceilings; Classrooms: suspended t-bar or fibre board ceiling tiles; vinyl tile, sheet vinyl or carpet flooring Gymnasium: painted stramit ceilings; painted concrete walls and wood flooring Corridors/Washrooms: suspended t-bar ceiling system, sheet vinyl tile flooring Shower areas: gypsum board ceilings with ceramic tile on walls and floors Wood doors and frames typical throughout. **1960 addition**: wood stud interior partitions, plaster walls and ceilings, fibre board ceilings and painted concrete double tee ceilings. Classrooms have VAT or carpet flooring; corridors have sheet vinyl flooring and textured celings; Washrooms have gypsum board ceilngs, fibreglass wall finishes and sheet vinyl flooring. Wood doors and metal frames typical. **1963 addition**: glazed concrete block interior partitions; fibre board ceiling and painted concrete double tees ceilings and cement tile flooring in the Gymnasium. VAT flooring in the locker rooms; gypsum board ceiling and ceramic tile flooring in washrooms; fibre board ceiling and painted concrete double tees with VAT flooring in the corridors; Wood doors and metal frames typical.	Overall interior condition currently acceptable but many finishes are nearing the end of their design lifecycle				Details below				
Partitions	**1956 bldg**: wood stud interior partitions **1960 addition**: wood stud interior partitions **1963 addition**: glazed concrete block interior partitions			3 3 3	$1,340,000	Partitions	5,758	m2 GFA	$233	$1,339,599
Interior Finishes	Walls: Plaster walls, painted gypsum Board, painted concrete block, painted concrete structural elements, ceramic wall tile, Floors: VAT, sheet vinyl, carpet, ceramic floor tile, cement tile (1963 Gym only) wood floor (1956 gym and stage) Ceilings: suspended acoustic tile in T-bar, suspended GWB, exposed structure painted.					Details below				

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System	Description	Recommended Action Concerns	QTY/Area	Rating	Upgrade Replacement Cost	TCCL Assumed Scope	TCCL QTY	TCCL Unit	TCCL Rate	TCCL Sub-Total Construction
Floors	**Tile floors**: located in all 3 sections and in generally good condition	Performing adequately		3	$58,000	Floor tile	350	m2	$165	$57,750
	Wood flooring: in 1956 gym and stage areas was installed in 1998 and is in acceptable condition	Performing adequately		3	$91,000	Gym Floor	521	m2	$175	$91,175
	VAT flooring: located in all three sections of the school and though original flooring products and close to or well beyond the anticipated lifespan, are in remarkable condition	Mostly good with only a couple of rooms needing replacement		3	$195,000	Vinyl Sheet Floor	3,000	m2	$65	$195,000
	Sheet vinyl flooring: mostly original products with some having being replaced in 1981 and 1984.	Although well past anticipated life span, in very good shape with only a few rooms needing to be replaced		3						
	Carpet:									
	Some installed in 1956/1960/1963:	should be replaced.		2	$123,000	Carpet	1,887	m2	$65	$122,655
	Installed in 2001/2004 carpet:	should be replaced.		2						
	Installed in 1984/1992:	should be replaced.		2						
Walls	Painted plaster or gypsum board on wood stud partitions & painted or glazed concrete block walls			3	$237,000	Wall Finishes	5,758	m2 GFA	$41	$236,798
Ceilings	Fibre board tiles adhered to farming material or suspended acoustic tile in T-bar installation in most areas of 1956 bldg.	Water stained ceiling tiles noted in only a couple of locations. Some chipped tiles noted, but very few.		3						
	Fibre board ceilings combined with painted concrete double tees' in the most areas of the 1960 and 1963 additions.	Replace all stained/damaged ceiling tiles.			$58,000	Ceiling Finishes (allow 20%	1,152	m2 GFA	$51	$58,185
	Suspended GWB in select locations e.g. washrooms, storage rms. In all three areas									
Interior Openings	1956 bldg: solid wood doors and wood frames (+/- 60)	Most doors in good condition with only painting/refinishing required		3						
	1960 Addition: solid core wood doors and wood frames.									
	1963 Addition: hollow core wood doors with metal frames with some having wired glass sidelights.									
	Fire doors: Doors/Frames requiring to be rated (mech room, storage rooms, janitor rooms, etc.) are not labelled though are metal clad wood or metal doors in metal frames so not evident if complying with Code.	Fire doors/frames should be replaced with new labelled doors/frames		2						
	Other doors:				$183,000	Interior Doors & Glazing	5,758	m2 GFA	$32	$182,673
	-accordion door in 1956 home ec classroom	In good condition		3						
	-folding partition in 1960 addition between computer room 40 and classroom 43	In good condition		3						
	Interior glazing:									
	1956 bldg: metal/wood framed windows with either clear glass or wired glass	Openings with wired glass should be replaced with clear tempered or laminated glass		2						
	1960 addition: metal framed storefront with clear glass			3						
	1063 metal framed storefront with clear glass top panel and sidelights									

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						TCCL				
System	**Description**	**Recommended Action Concerns**	**QTY/Area**	**Rating**	**Upgrade Replacement Cost**	Assumed Scope	QTY	Unit	Rate	Sub-Total Construction
Furnishings & Equipment	Much of the millwork in the school appears to be original with the phase of construction other than some new in the admin areas that were most recently upgraded.									
Casework Items	Typical casework in all areas is painted wood shelving along the exterior walls. Most needs to be refinished and or replaced. Changes to mech items may necessitate this replacement as well.	Some shelving has paint chipped Older style casework/shelving requires painting in some areas		2	$474,000	Fixed Furnishings	5,758	m2 GFA	$82	$473,596
	Display cabinets: in serviceable condition	Repaint casework/shelving as required.		3						
	Vanities: although nearly all are original to the phase of project and are in serviceable conditions with only minor repairs and/or replacement required			2						
Equipment Items	Dishwashers, fridges, microwave & stoves in staff room and kitchen. boot racks at student entrances. Smart boards in most classrooms.			4	$86,000	Equipment	5,758	m2 GFA	$15	$86,370
Window Treatments	Most exterior windows in the facility are equipped with vertical plastic or fabric blinds installed in 2003. Generally in adequate condition though showing wear.	Functioning adequately		3	$14,000	Window Blinds	288	m2	$50	$14,395
	Horizontal/roller blinds: installed in 1956 and 1960 phases and need replacement	Replace blinds (+/- 42 in total)		2						
	Curtains: one classroom has fabric curtains (8) that should be replaced	Replace with blinds		2						
Interior - Other	Lockers: all lockers are original to the phase of construction and need to be replaced			2	$75,000	Lockers	300	ea	$250	$75,000
Building Code	See separate Building Code Review ABC Group A Division 2 - School. 1956 original building & 1960 addition are two storey, combustible & non-combustible construction, unsprinklered. 1063 addition is one storey, non-combustible construction, unsprinklered. Georgian Wired Glass can be found on many doors within the facility					N/A				
Barrier - Free	No Auto door opener at main entrances , washrooms were upgraded with barrier free stalls and sinks in 1999, RAM 2 person 500kg handicapped lift provides access to 2nd Floor and was installed in 1998. Corridors are wide enough to accommodate wheelchair use, but not all areas of school accessible. Handicap accessible water closets provided but some require additional grab bars to be installed. Door hardware – most locksets / latchsets have round knobs	Generally speaking the school embraces the intent of being barrier free, although it may not meet specific requirements of A.B.C. 2014.		2	$58,000	Barrier Free (Allowance)	5,758	m2 GFA	$10	$57,580
		Replace all locksets / latchsets with lever handle hardware.		2						
		Install barrier free operators at main entrances.		2						
		Replace ramp with ramp that meets Code requirements		2						
Demolition	Demolition - Selective				$576,000	Demolition - Selective	5,758	m2	$100	$575,800
Hazardous Materials	Refer to HAZMAT Report				$288,000	Hazmat (Allowance)	5,758	m2 GFA	$50	$287,900
									Sub-Total =	$4,897,778

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System	Description	Recommended Action Concerns	QTY/Area	Rating	Upgrade Replacement Cost	TCCL Assumed Scope	TCCL QTY	TCCL Unit	TCCL Rate	TCCL Sub-Total Construction
MECHANICAL										
HEATING										
Heating Plant	One original Beaver Boiler (BG600, 600 MBH input) hot water heating boilers with pumps, expansion tanks and accessories are located in the mechanical room service the building. Whole system is in poor condition.	A new boiler plant including boilers, pumps, tanks, flues, combustion air and controls should be provided.	600 MBH input	3	$237,000	Heat Generation and Refrigeration	5,758	m2 GFA	$41	$236,798
Terminal Heating Units and Distribution Systems	Terminal ventilator or fan coil units in classrooms and offices provide heating.	Existing fan coil system should be replaced with a brand new terminal heating system for heating purpose when new ventilation system is provided.	20,000 sqft	3	$643,000	Terminal & Packaged Units	5,758	m2 GFA	$112	$642,737
VENTILATION AND AIR CONDITIONING										
Air Handling Units	One original indoor indirect gas fired AHU (350 MBH input) in west mechanical room. The unit is on poor condition. Furnaces in some classrooms and east mechanical room are in fair condition.	The existing ventilation units is nearing life expectancy. It should be replaced. Some units are close to life expectancy but still operating. Replacement is only recommended when malfunction or deficiency is experienced or observed.	1 15	3 3		Included above Included above				
Individual room ventilators	Individual room unit ventilators serve south facing exterior classrooms and offices.	Unit ventilators are beyond life expectancy and do not meet ASHARE ventilation requirements. Demolish all the unit ventilators. Provide a new MAU unit to serve the classrooms to meet ASHRAE and AI design guide. Mechanical cooling and energy recovery are optional.	1@7500 cfm S/A & E/A ductwork & diffusers	2		Included above Included above				
Exhaust Fans	Washroom and building exhaust is provided by several rooftop exhaust fans.	The exhaust fans are in acceptable condition. Their anticipated life span will not be adequate for a new/expansion building and should be replaced for any future school renovations.	4	3	$2,000	New exhaust fans	4	ea	$450	$1,800
Duct Distribution, Grilles and Inlets/Outlets	Ductwork associated with AHU units are either in concealed space or exposed.	Duct distribution and grilles are in acceptable condition.		3	$812,000	Ductwork	5,758	m2 GFA	$141	$811,878
Humidification	There are no humidifier in air system.	All air systems should be provided with new humidification systems and associated controls.	2	3		Included above				
Packaged Air Conditioning Units	The server room has DX unit providing cooling.	The unit is in good condition.		4		Included above				

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System	Description	Recommended Action Concerns	QTY/Area	Rating	Upgrade Replacement Cost	TCCL Assumed Scope	TCCL QTY	TCCL Unit	TCCL Rate	TCCL Sub-Total Construction
BUILDING SYSTEM CONTROLS										
Energy Management Systems	The existing system consists of pneumatic and electric controls. There is an air compressor in the main mechanical room that serves the pneumatic system.	The pneumatic/electric controls systems should be replaced with a DDC system to optimize energy utilization and provide accurate control of systems and remote access and monitoring. All terminal control devices (valves, thermostats, dampers, etc.) should also be replaced with electronic devices.	1/5758 sqm	3	$271,000	Instrumentataion & Controls Testing & Balancing	5,758	m2 GFA	$47	$270,626
PLUMBING SYSTEMS										
Domestic Hot Water	Two gas-fired water heaters located in each mechanical room and serve the building.	The domestic hot water heating system is in acceptable condition. Replacement is only recommended when malfunction or deficiency is experienced or observed.	2	3	$30,000	Water heater	2	ea	$15,000	$30,000
Plumbing Fixtures	Standard plumbing fixtures are provided in washrooms and public areas per design	All fixtures are in acceptable condition. Refer to Architectural section for any required modification.	2	3	$189,000	Fixtures	5,758	m2 GFA	$33	$189,438
Domestic Water Piping, Valves and Insulation	Most domestic water line is original condition.	The domestic piping system and valves are in acceptable condition. Piping insulation should be investigated for asbestos content. Water content analysis is recommended for potential contamination.	1	3	$101,000	Domestic Water Distribution	5,758	m2 GFA	$18	$101,485
Sanitary and Vent Piping System	Existing piping system for the sanitary and vent seems adequate.	The sanitary and vent systems are in acceptable condition. A video camera investigation of the underground sanitary system should be conducted.	1	3	$101,000	Sanitary	5,758	m2 GFA	$18	$101,485
Storm Piping System	Building storm system is original.	The storm system is in acceptable condition. A video camera investigation of the underground storm system should be conducted.	1	3	$88,000	Storm	5,758	m2 GFA	$15	$87,953
Domestic Water Service	One water meter is located in east mechanical room. There is no back flow preventer upstream of water meter.	Backflow preventer shall be provided before water meter. The incoming water service should be reviewed and upgraded for a new sprinkler system should one be required.	1	1	$45,000	Backflow Preventer	1	ea	$45,000	$45,000
Natural Gas Service	The gas meter is located inside west mechanical room.	The existing gas service is in acceptable condition. It is recommended to relocate gas meter to outdoor per gas company's requirement. Gas loads should be reviewed if new gas fired equipment is added.	1	3	$8,000	Relocate Gas Meter	1	ea	$7,500	$7,500

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System	Description	Recommended Action Concerns	QTY/Area	Rating	Upgrade Replacement Cost	TCCL Assumed Scope	TCCL QTY	TCCL Unit	TCCL Rate	TCCL Sub-Total Construction
FIRE PROTECTION SYSTEMS										
Wet Protection Systems	There is no fire sprinkler system.	Local authorities should be consulted as to if a new wet sprinkler system is required.	1	3	$415,000	Sprinklers (w/ Ceiling Finishes)	5,758	m2 GFA	$72	$415,411
Fire Extinguishers and Cabinets	Wall hung exposed fire extinguishers are provided throughout the building.	Semi-recessed extinguisher with cabinet should be provided in lieu of surface mounted to prevent damage or accidental initiation of the extinguisher.	10	3	$8,000	Fire Extinguishers	10	ea	$750	$7,500
									Sub-Total =	$2,949,611
ELECTRICAL										
POWER DISTRIBUTION										
Service Entry	Pole mounted transformer	No concerns (equipment is EPCOR's property)	n/a	n/a	$257,000	Service & Distribution	5,758	m2 GFA	$45	$257,095
	Underground feeders	Condition not assessed, given age of the equipment recommended replacement	1	n/a						
	Babco Electric Main Distribution Panel 800AT/800AF 3P main breaker 800A 120/208V 3Ph 4W distribution Panel	Replacement panel was installed in 1982, appearing to operate and to be in good condition	1	3						
Sub-Panels, Conduit, and Wireways	Federal Pioneer 120/208V branch circuit panels installed throughout the building	Replacement panel were installed in 1982, appearing to operate and to be in good condition	1	3						
	Panels A, CP, P, 2nd floor east	Panel installed during original building construction in 1956, breakers worn out, replacement parts not available	1	2						
Appliances/Receptacles	Power receptacles installed throughout the building	Low number of receptacles. It is recommended to supplement system with additional devices.	300	2						
Grounding and Static Control	Building Ground	System not assessed, however given age of the building is recommended to replace building ground grid.	1	n/a						

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LIGHTING										
Building Exterior	Exterior lighting comprised of building mounted High Pressure Sodium fixtures	Exterior lighting replaced in 1990 is appearing to operate adequately	20	3						
	Exterior lights controlled utilizing mechanical timer	Controller was installed in 1956		2						
Building Interior	Interior lighting is primarily T8 fluorescent lighting with electronic ballasts	Interior lighting replaced in 1998 is appearing to operate and to be in good condition	1000	4	$575,000	Lighting & Branch Wiring	5,758	m2 GFA	$100	$575,080
	Gymnasium T5HO fixtures	Gymnasium lighting replaced in 2005		4						
	Lights controlled by line voltage switches	Switches installed in 1956		2						
EMERGENCY SYSTEMS										
Exit/Emergency Lighting	Emergency lighting is provided by battery packs and remote lighting heads throughout the building	Fixtures installed in 2005 are in good condition.	50	4	$29,000	Emergency Lighting	5,758	m2 GFA	$5	$28,790
	Gymnasium exit signs	Original building signs installed in 1956	4	2						
Fire Alarm and Detection	Edward 6636, hardwired	System installed in 1990 is at end of its service life. Recommended replacement.	1	2	$86,000	Fire Alarm	5,758	m2 GFA	$15	$86,370
Security	Intrusion detection – Magnum Alert Security System	System installed in 2000, appears to be in good condition.	1	4	$46,000	Security	5,758	m2 GFA	$8	$46,064
COMMUNICATIONS										
Telephone System	Nortel Norstar System	System installed in 2000, appears to be in good condition.	1	4	$0	Included in Data				
T.V./Computet	Incoming Supernet service.	No concerns (property of Bell Axia).	1	n/a	$6,000	Data	5,758	m2 GFA	$1	$5,758
	Ethernet system throughout the school utilizing Cat. 5 cabling	System installed upgraded in 2005, appears to be in good condition.	150	4	$115,000	Data	5,758	m2 GFA	$20	$115,160
Intercom/Public Address	Bogen TPU 1008 integrated with telephone system	System installed in 1996, at end of its service live span. Recommended system replacement.	1	3	$29,000	P.A. System	5,758	m2 GFA	$5	$28,790
Clock and Program System	Various clocks throughout facility	Clocks installed throughout the facility do not compose a system. Installation of centrally controlled clock system would be recommended.	50	2	$17,000	Clock System	5,758	m2 GFA	$3	$17,274
Communications - Other	Personal Voice Amplification system installed in classrooms.	Standalone units currently installed in selected classrooms. No action required.	28	4						
	Stage Sound System	Sound system appears to be outdated. Recommended system replacement.	1	3	$0	Included in PA System	5,758	m2 GFA	$0	$0
									Sub-Total =	$1,160,381

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System	Description	Recommended Action Concerns	QTY/Area	Rating	Upgrade Replacement Cost	TCCL Assumed Scope	TCCL QTY	TCCL Unit	TCCL Rate	TCCL Sub-Total Construction
CIVIL										
SITE GRADING AND PAVEMENT STRUCTURES										
Cracks in Sidewalk	Longitudinal and transverse cracks observed on site concrete sidewalks	Seal cracks or replace concrete sidewalks		2	$85,000	Demo and replace site concrete	500	m2	$170	$85,000
Pot Holes and Ruts in Asphalt	There were areas where potholes, ruts, cracks and alligator cracking observed in the asphalt	Crack Sealing and pot hole repairs. In certain areas, entire asphalt structure needs to be replaced		2	$150,000	Demo and replace site asphalt	1,500	m2	$100	$150,000
Organics Growing in Asphalt	Organics growing in the asphalt was observed, which illustrates a structure failure	Replace structure		2						
Negative/Low spots at building	Low spots around the building were observed, which does not allow for positive drainage away from the building	Revise Grading		2	$50,000	Grade away from building	1,000	m2	$50	$50,000
Site Landscaping	There were areas where no grass was going, due to vehicles driving on top of landscaping	Landscaping Required		2	$20,000	Landscaping	1,000	m2	$20	$20,000
Curbs deteriorating	Curbs being deteriorated were observed	Replace Curbs		2	$0	Demo and replace site concrete - included above				
									Sub-Total =	$305,000

TOTAL					$9,310,000					$9,315,000

Item	ESTIMATED Square Footage	Cost per	Total removal cost
Duct Insulation Canvas Nail Parging	??	$ 15.00 / sq ft	$ -
Duct Insulation	200 ft	$ 15.00 / ft	$ 3,000.00
Floor Tile	10,525 sq ft	$ 2.50 /sq ft	$ 26,312.50
Mud Parging	65 sq ft	$ 15.00 / sq ft	$ 975.00
Pipe Fittings	72 units	$ 45.00 / unit	$ 3,240.00
Sheet Flooring	1,975 sq ft	$ 8.00 / sq ft	$ 15,800.00
Spray Texture	2,000 sq ft	$ 8.00 / sq ft	$ 16,000.00
			$ 65,327.50