School Name:	Minchau Elementary School		School Code:	7274
Location:	3615 Millwoods Road East, Edmonton, Alberta		Facility Code:	1288
Region:	Edmonton		Superintendent:	Mr. Emery Dosdall
Jurisdiction:	Edmonton Public Schools		Contact Person:	Mr. Bob Clark
	District #7		Telephone:	(780) 429-8511
Grades:	K-6		School Capacity:	500

Building Section	Year of Compl.	No. of Floors	Gross Bldg Area (Sq.M.)	Type of Construction (i.e., structure, roof, cladding)	Description of Mechanical Systems (incl. major upgrades)	Comments/Notes
Original Building	1983	1	2,959.60	Steel frame structure, brick and cedar siding exterior, concrete strip foundations, flat and sloped roof.	The central heating plant consists of ten modular hot water boilers. Classroom, staff and other areas are heated and air conditioned by unitary heat pumps. The heat pump primary piping circuit is heated by the boiler plant in the winter and cooled by a cooling tower in the summer. The building is fully sprinklered. The water supply to the sprinkler heads is taken from the heat pump primary circuit. This piping circuit is used for both the sprinklers and the heat pumps. Outdoor air ventilation is provided by two central ventilation systems.	

Additions/ Expansions		N/A			No addition/ expansion to main building - see portables.		
						Evaluator's Name:	Tonu Mitra
						& Company:	Lotus Architecture

Upgrading/ Modernization (identify whether minor or major)				No modernization/upgrading.		
Portable Struct. (identify whether attached/perman. or free-standing/ relocatable)	1988	1	453.70	One set of four portables (pod), permanently attached to south-east portion of main building. Wood frame on concrete pad footings, flat roof, prefinished metal siding.	Heated and ventilated by gas fired forced air furnaces. A separate furnace has been provided for each classroom.	Four additional portables are noted in the Standard Assessment and Utilization Report. Of these four, two portables have been removed and the remaining two freestanding portables have been taken off inventory due to poor condition. The total building area and the total capacity have been adjusted accordingly.
	1992	1	453.70	One set of four portables (pod), permanently attached to north-east portion of main building. Wood frame on concrete pad footings, flat roof, stucco exterior.	Heated with hot water and ventilated with central ventilation unit.	
List of Reports/ Supplementary Information	Updated mini-plans. No other reports are available.					

	Evaluation Components	Summary Assessment		Estim. Cost
1	**Site Conditions**	Top soil and seeding in bald areas of grass. Repair and re-slope swale. Repair cracks and settlements in asphalt aprons and resurface for positive drainage. Re-build and re-slope concrete slabs and sidewalks near entrances.		$ 61,500.00
2	**Building Exterior**	Replace flat roof of main building and repair front canopy. Replace asphalt shingles in sloped roof. Replace deteriorated cedar siding.		$ 134,000.00
3	**Building Interior**	Replace carpet in high traffic areas of main building.		$ 21,000.00
4	**Mechanical Systems**	The building has sprinkler fire protection system. The piping used to supply water to the sprinkler heads is also used as the primary heating/cooling piping circuit for the unitary heat pumps. The piping circuit should be reviewed in further detail with regards to proper operation for both purposes and code implications. A backflow preventor or vacuum breakers are required for the irrigation hose bibbs. The washroom vanity sinks and the domestic water heater require replacement. Problems of inadequate heating have been reported in several areas of the school. the heating requirements for the school should be re-calculated on a room by room basis and compared to the installed capacities for the heat pumps, piping circuits, pumps, boilers and control strategies employed. Several heat pumps have been replaced and failures are on-going. Consideration should be given to replacing all the units or converting to a different heating system. the air supply diffusers in the classrooms are noisy and should be checked for proper sizing. all air systems should be re-balanced including the heat pumps. All EMCS control strategies should be reviewed for proper operation and optimization.		$ 49,500.00
5	**Electrical Systems**	Replace fire alarm system panel with new panel; upgrade lighting in classrooms, provide additional receptacles in classrooms; upgrade the PA/Intercom and telephone systems, provide surge suppression system and fillers for breaker panels.		$ 65,700.00
6	**Portable Buildings**	Replace carpet in 1988 pod. Since the pods are heated by hot water system and ventilated by central ventilation unit, coonditions and costs are included in the mechanical systems of the main building. Electrical systems in pods are in satisfactory condition. Lighting levels are satisfactory.		$ 18,500.00
7	**Space Adequacy:**			
	7.1 Classrooms	Excessive	+187.90	
	7.2 Science Rooms/Labs	Deficient	-95.95	
	7.3 Ancillary Areas	Deficient	-144.05	
	7.4 Gymnasium	Excessive	+48.94	
	7.5 Library/Resource Areas	Excessive	+47.43	
	7.6 Administration/Staff Areas	Deficient	-102.43	
	7.7 CTS Areas	N/A	—	
	7.8 Other Non-Instructional Areas (incl. gross-up)	Deficient	-58.05	
	Overall School Conditions & Estim. Costs	Deficient	-116.21	$ 350,200.00

Section 1	Site Conditions	Rating	Comments/Concerns	Estim. Cost
1.1	**General Site Conditions**			
1.1.1	Overall site size.	4	Adequate.	
1.1.2	Outdoor athletic areas.	3	Bald areas on east side of swale and on mound near south entrance. Top soil and seeding required. Asphalt play area on south is in good condition.	$ 10,500.00
1.1.3	Outdoor playground areas, including condition of equipment and base.	4	The community playground to the north of parking lot is used - good condition, including sand base.	
1.1.4	Site landscaping.	4	Landscaping provided in front, back (south) and on west side. Good condition.	
1.1.5	Site accessories (i.e., perimeter and other fencing, guard rails, bike stands, flag poles).	4	No fences. Bike stands located on north and south side, on asphalt pavements - good condition. Flag pole provided near main entrance.	
1.1.6	Surface drainage conditions (i.e., drains away from building, signs of ponding).	3	Excellent surface drainage, except the following which should be corrected: - Negative slopes in asphalt pavement along north and east walls of both pods - resurface with asphalt for positive drainage. - Three large cracks on asphalt apron on east side - repair cracks with asphalt. - Swale along east and south sides of asphalt aprons does not slope properly and bottom of swale is in poor condition for proper drainage and is unsafe - Repair and regrade swale, provide top soil and seeding. - A continuous shallow channel has been created along south and west walls of the building to divert water coming from adjacent landscaped berms. This channel is made of top soil. Grading of this channel with proper slopes, weed barrier and pavers or similar hard material is recommended. -The front patio with pavers has negative slope to the building - Re-build patio surface with positive slope. See also 1.3.5 for concrete surface drainage.	$ 42,000.00
1.1.7	Evidence of sub-soil problems.	3	Millcreek is adjacent to playing fields; high water table is a possibility. - There is no evidence of building structure movements. - Asphalt apron at south-east corner of north pod has sunk. It appears to have been repaired before. - Asphalt in front of exit door of south pod annex (south-east of gymnasium), has settled. - The east wooden deck of north pod has heaved. Repair the above. Provide proper slopes in asphalt repair surfaces.	Included in 1.1.6
1.1.8	Safety and security concerns due to site conditions.	2	Flooding of water in swale and developing sink holes are safety issues.	Included in 1.1.6
Other				

Section 1	Site Conditions	Rating	Comments/Concerns	Estim. Cost
1.2	**Access/Drop-Off Areas/Roadways/Bus Lanes**			
1.2.1	Vehicular and pedestrian access points (i.e., size, number, visibility, safety).	4	Three pedestrian access points; one each from 36 Avenue (south), Mill woods Road (west) and community parking lot (north). Parents drop-off and pick-up at 36 Avenue or at the parking lot. Bus loading and unloading is at Millwoods Road. No major problems but 36 Avenue gets crowded; some no parking zones will help.	
1.2.2	Surfacing of on-site road network (note whether asphalt or gravel).	4	Access to parking lot from Miiwoods Road is asphalt. No other on-site road network.	
1.2.3	Bus lanes/drop-off areas (note whether on-site or off-site).	4	Off-site, on Millwoods Road (west side).	
1.2.4	Fire vehicle access.	4	Available on three sides.	
1.2.5	Signage.	4	Provided on the front wall. A freestanding signage/message board is located at south-west corner.	
Other				

Section 1	Site Conditions	Rating	Comments/Concerns	Estim. Cost
1.3	**Parking Lots and Sidewalks**			
1.3.1	Number of parking spaces for staff, students and visitors (including stalls for disabled persons).	4	24 stalls; one stall for the handicapped - adequate. All energized. The parking lot is shared with the community.	
1.3.2	Layout and safety of parking lots.	4	No problems.	
1.3.3	Surfacing and drainage of parking lots (note whether asphalt or gravel).	4	Good drainage to a catch basin in the middle. Some asphalt surface damage around catch basin.	
1.3.4	Layout and safety of sidewalks.	4	No problems.	
1.3.5	Surfacing and drainage of sidewalks (note type of material).	2	Concrete surfaces and drainage is generally good except the following: - The elevation of concrete slab at the main entrance is lower than the sidewalks around it. Water enters the office area from under the main entrance doors. Re-build concrete slab to proper elevation and re-build portions of sidewalks for positive drainage. - The sidewalk on the south side is also higher than the south entrance concrete slab. Re-build a portion of the sidewalk to lower elevation for positive drainage. - Re-build asphalt apron in front of north-east exit at annex of south pod for positive drainage. - Lower level of concrete sidewalk on east portion of north wall. Re-slope grass area.	$ 9,000.00
1.3.6	Curb cuts and ramps for barrier free access.	4	Curb cuts provided on street sidewalks. The building entrances are at grade.	
Other				
	Overall Site Conditions & Estimated Costs			$ 61,500.00

Section 2	Building Exterior	Rating	Comments/Concerns		Estim. Cost
2.1	**Overall Structure**		**Bldg. Section**	**Description/Condition**	
2.1.1	Floor structure and beams (i.e., signs of bending, cracking, heaving, settlement, voids, rust, stains).	4	1983	Concrete slab on grade - good condition.	
2.1.2	Wall structure and columns (i.e., signs of bending, cracking, settlement, voids, rust, stains).	4	1983	Steel frame structure, cavity walls consisting of 152mm steel studs, rigid insulation and face brick and cedar siding - good condition; no visible signs of stress.	
2.1.3	Roof structure (i.e., signs of bending, cracking, voids, rust, stains).	4	1983	Open web steel joists and steel deck - no visible signs of stress.	
Other					

Section 2	Building Exterior	Rating	Comments/Concerns		Estim. Cost
2.2	**Roofing and Skylights** ***Identify the availability of an up-to-date inspection report or roofing program. Note if roof sections are of different ages and/or in varying***		**Bldg. Section or Roof Section**	**Description/Condition/Age**	
2.2.1	Based on the inspection report (and to the extent possible, direct observation), assess and rate roof conditions and estimate costs for required improvements (i.e., covering materials, membrane, insulation, other components).	3	1983	Asphalt and gravel built-up roofing and low sloped asphalt shingles with ice dams on sloped roofs at clearstorey windows. Water from sloped roofs is carried via gutter and downspouts to the flat roof. Splashpads are missing at the bottom of downspouts and roof surfaces are bald at these locations. The flat roof generally is in poor condition. Ponding along roof drains, vegetation growth near access door, bubbles, soft spots and bald areas. Strainer caps of roof drains are missing. It appears the roof is not draining properly and roof leaks have been reported. Replace flat roof. Asphalt shingles are in fair condition. The low roof has been accessible from outside and there are indications of vandalism on the roof, including torn asphalt shingles, ripped cedar boards and damaged gutters. Some barriers to climbing have been installed recently.	$ 110,000.00
2.2.2	Roof accessories (i.e., ladders, stairs, hatches, masts, exhaust hoods, chimneys, gutters, downspouts, splashpads).	3	1983	Provide splashpads at downspouts from high sloped roofs. Replace damaged gutters. Other accessories are in good condition. Paint peeling from hoods and canopies.	Included in 2.2.1
2.2.3	Control of ice and snow falling from roof.	3	1983	Water at main entrance canopy corner does not drain properly and backs up in gutter and ice builds up. Damages to cedar fascia is also evident. Repair canopy drainage.	Included in 2.2.1
2.2.4	Skylights (i.e., signs of distress, leaks, ice build-up, condensation, deteriorated materials/seals).	4	1983	No skylights but a series of clearstorey windows appear to be in good condition. No water leaks in light wells or condensation reported.	
Other					

Section 2	Building Exterior	Rating	Comments/Concerns		Estim. Cost
2.3	**Exterior Walls/Building Envelope**		**Bldg. Section**	**Description/Condition**	
2.3.1	Exterior wall finishes (i.e., signs of deterioration, cracks, brick spalling, effluorescence, water stains).	4	1983	See 2.3.2 below for comments on cedar boards. Face bricks are in good condition. Caulking on some control joints has deteriorated. The joints should be cleaned and caulked as regular maintenance.	
2.3.2	Fascias, soffits, parapets (i.e., signs of looseness, stains, rust, peeling paint).	3	1983	Cedar boards on fascias and soffits are stained. Some cedar boards on west side of high roof have deteriorated. On a portion of low west wall cedar fascia fungus/vegetation was observed. Replace damaged cedar boards and stain. These boards should then be monitored for any deterioration in the future; specifically due to internal moisture migration. All other cedar surfaces are in good condition. See 2.2.3 for comments on main entrance canopy.	$ 24,000.00
2.3.3	Building envelope (i.e., evidence of air infiltration/ exfiltration through the exterior wall or ice build up on wall, eaves, canopy).	4	1983	No evidence of envelope leaks.	
2.3.4	Interface of roof drainage and ground drainage systems.	4	1983	See 2.2.1. The flat roof has interior roof drains tied to City main.	
2.3.5	Inside faces of exterior walls (i.e., signs of cracks, water stains, dust spots).	4	1983	No visible signs.	
Other					

Section 2	Building Exterior	Rating	Comments/Concerns		Estim. Cost
2.4	**Exterior Doors and Windows**		**Bldg. Section**	**Description/Condition**	
2.4.1	Doors (i.e., signs of deterioration, rusting metal, glass cracks, peeling paint, damaged seals, sealed unit failure).	4	1983	Hollow metal and solid core wood doors on pressed steel frames - good condition. Weatherseals on some classroom exterior doors should be replaced as regular maintenance.	
2.4.2	Door accessories (i.e., latches, hardware, screens, locks, alarms, holders, closers, security devices).	4	1983	Good condition - being maintained.	
2.4.3	Exit door hardware (i.e., safety and/or code concerns).	4	1983	Good condition - being maintained.	
2.4.4	Windows (i.e., signs of deterioration, rusting metal, glass cracks, peeling paint, damaged seals, sealed unit failure).	4	1983	Aluminum windows; sealed double glazed units - good condition. Perimeter of window frames should be caulked as regular maintenance.	
2.4.5	Window accessories (i.e., latches, hardware, screens, locks, alarms, holders, closers, security devices).	4	1983	Good condition.	
2.4.6	Building envelope (i.e., signs of heavy condensation on doors or windows).	4	1983	None reported.	
Other					
	Overall Bldg Exterior Condition & Estim Costs				$ 134,000.00

Section 3	Building Interior - Overall Conditions	Rating	Comments/Concerns		Estim. Cost
3.1	**Interior Structure**		**Bldg. Section**	**Description/Condition**	
3.1.1	Interior walls and partitions (i.e., signs of cracks, spalling, paint peeling).	4	1983	None visible.	
3.1.2	Floors (i.e., signs of cracks, heaving, settlement).	4	1983	None visible.	
Other					
3.2	**Materials and Finishes**		**Bldg. Section**	**Description/Condition**	
3.2.1	Floor materials and finishes.	3	1983	Carpet and vinyl tiles. Vinyl tiles are in good condition. Carpet in library and other high traffic areas has worn out - replace carpet. Mechanical room concrete floor is in good condition. Wood floor in gymnasium is in good condition.	$ 21,000.00
3.2.2	Wall materials and finishes.	4	1983	Painted drywall and vinyl faced panels - good condition.	
3.2.3	Ceiling materials and finishes.	4	1983	Suspended acoustic tile ceilings - good condition. Cedar boards on high sloped ceilings - good condition. Open web steel joists and steel deck, painted in gymnasium - good condition.	

Section 3	Building Interior - Overall Conditions	Rating	Comments/Concerns		Estim. Cost
3.2	**Materials and Finishes (cont'd)**		**Bldg. Section**	**Description/Condition**	
3.2.4	Interior doors and hardware.	4	1983	Solid core wood and hollow metal doors on pressed steel frames, painted - good condition. Hardware being maintained or replaced regularly.	
3.2.5	Millwork	4	1983	Good condition.	
3.2.6	Fixed/wall mounted equipment (i.e., writing boards, tackboards, display boards, signs).	4	1983	Greenboards and tackboards throughout - good condition.	
3.2.7	Any other fixed/mounted specialty items (i.e., CTS equipment, gymnasium equipment).	4	1983	Fixed basketball hoops and climbing apparatus are in good condition.	
3.2.8	Washroom materials and finishes.	4	1983	Floors: 50x50mm mosaic tiles. Walls: 100x100mm ceramic tiles, full height. Ceilings: Drywall painted. All of the above are in good condition. Vanities and toilet partitions are in good condition.	
Other					

Section 3	Building Interior - Overall Conditions	Rating	Comments/Concerns		Estim. Cost
3.3	**Health and Safety Concerns --- *Intent is to identify renovations considered necessary to meet applicable codes, primarily due to safety concerns. Basis of evaluation should be an up-to-date inspection report from the authority having jurisdiction together with direct observations as appropriate. Evaluator should note if in his opinion a comprehensive code evaluation is***		**Bldg. Section**	**Description/Condition**	
3.3.1	Building construction type - combustible or non-combustible, sprinklered or non-sprinklered.	4	1983	Sprinklered, non-combustible.	
3.3.2	Fire separations (i.e., between buildings, wings, zones if non-sprinklered).	4	1983	Sprinklered.	
3.3.3	Fire resistance rating of materials (i.e., corridor walls and doors).	4	1983	Appear to be compliant.	
3.3.4	Exiting distances and access to exits.	4	1983	Appear to be compliant.	
3.3.5	Barrier-free access.	4	1983	The building is barrier-free accessible. A stair rail lift to the music room upstairs provided. Barrier-free washrooms provided. The exterior wooden ramp on south-east exit of north pod requires handrails - provide wooden handrails as regular maintenance.	
3.3.6	Availability of hazardous materials audit (i.e., evidence of safety concerns with respect to asbestos, PCB's, chemicals).	4	1983	Samples from tiles, piping and piping elbow insulation were taken out recently for testing. Results are not yet available. Appears to be no serious concerns.	
3.3.7	Other health and safety concerns (i.e., evidence of excessive noise conditions, air quality problems)	4	1983	No other problems.	
Other					
	Overall Bldg Interior Condition & Estim Costs				$ 21,000.00

Section 4	Mechanical Systems	Rating	Comments/Concerns		Estim. Cost
4.1	**Mechanical Site Services**				
4.1.1	Site drainage systems (i.e., surface and underground systems, catch basins).	4	1983 1988 1992	There is one catch basin in the parking lot.	
4.1.2	Exterior plumbing systems (i.e., irrigation systems, hose bibs).	4	1983 1988 1992	No irrigation system. Several non-freeze hose bibbs along school perimeter.	
4.1.3	Outside storage tanks.	N/A	1983 1988 1992	No known tanks.	
Other					
4.2	**Fire Suppression Systems**		**Bldg. Section**	**Description/Condition**	
4.2.1	Fire hydrants and Siamese connections.	4	1983 1988 1992	There is a Siamese connection on the west end of the building. There are fire hydrants on the west and south sides of the building.	
4.2.2	Fire suppression systems (i.e., pumps, sprinklers, piping, reservoirs, hoses, stand pipes, CO2 systems).	F.I.	1983	There is a fire protection sprinkler system throughout. The piping which supplies water to the fire protection system is also used to supply water to the unitary heat pumps throughout the school. The code implications and the pressure and flow implications of the system should be reviewed in further detail. The present concerns that any maintenance which requires draining or isolating the heating system also disables the fire protection system, should also be reviewed in detail.	
		4	1988 1992	There are no sprinklers in the two attached portable sections of the school. (North and south pods.)	
4.2.3	Hand extinguishers, blankets and showers (i.e., in CTS areas).	4	1983 1988 1992	Portable hand extinguishers located throughout.	
4.2.4	Other special situations (e.g., flammable storage areas, science labs, CTS areas).	4	1983	Some materials such as chemicals, photo copy supplies and cleaning solutions are stored in the old compactor room. Propane and gasoline are stored in a storage room which has a door which opens directly to the outdoors. These rooms have a transfer grille opening to the outdoors.	
Other					

Section 4	Mechanical Systems	Rating	Comments/Concerns		Estim. Cost
4.3	**Water Supply and Plumbing Systems**		**Bldg. Section**	**Description/Condition**	
4.3.1	Domestic water supply (i.e., pressure, volume, quality - note whether municipal or well supply).	4	1983 1988 1992	Water from City of Edmonton main. Pressure and volume are adequate.	
4.3.2	Water treatment system(s).	N/A	1983 1988 1992	No water treatment.	
4.3.3	Pumps and valves (including backflow prevention valves).	3	1983 1988 1992	No main pumps. A backflow preventor has been provided for boiler make-up. A backflow preventor has also been provided for the combined sprinkler and heating system. A backflow preventor or individual vacuum breakers should be added for the irrigation hose bibbs.	$ 3,000.00
4.3.4	Piping and fittings.	4	1983 1988 1992	No problems apparent or reported.	
4.3.5	Plumbing fixtures (i.e., toilets, urinals, sinks)	3	1983 1988 1992	Plumbing fixtures in the student's washrooms consist of vanity sinks with self closing faucets, floor mounted water closets with flush valves and semi-recessed urinals with flush valves. The vanity sinks are rusted and require replacement.	$ 15,000.00
4.3.6	Domestic hot water system (i.e., heater, storage tanks, failure alarms, pressure, volume, recirculation).	3	1983 1988 1992	The domestic water heater is a A.O. Smith Model BT365H-7705 with a recovery of 1044 L/hr and a storage capacity of 284 L. The heater requires replacement. The recirculation pump appears to be in reasonable condition.	$ 4,000.00
4.3.7	Sanitary and storm sewers, including sumps and pits (note whether sewage system is municipal or septic).	4	1983 1988 1992	Sewers are connected to the City mains. See Section 4.1.1.	
Other					

Section 4	Mechanical Systems	Rating	Comments/Concerns		Estim. Cost
4.4	**Heating Systems**		**Bldg. Section**	**Description/Condition**	
4.4.1	Heating capacity and reliability (including backup capacity).	F.I.	1983 1992	There are 10 packaged Hydro Therm Multi Temp hot water boilers, Model MR15006, each with a 1500 MBH input. The boilers operate at a pressure of 520 kPa. The boilers appear to be in reasonable condition. A problem in lack of heat is being experienced throughout the school. See Section 4.4.12.	
		4	1988	The south attached portable is heated by gas fired forced air furnaces. Automatic pilot igniters were recently added to the furnaces. Other than frequent maintenance requirements, the heating system appears to be adequate.	
4.4.2	Heating controls (including use of current energy management technology.	4	1983 1992	A Barber Colman Network 8000 EMCS system controls the boilers.	
4.4.3	Fresh air for combustion and condition of the combustion chimney.	4	1983 1988 1992	The chimneys appears to be in reasonable condition. There is also a combustion air supply into the boiler room.	
4.4.4	Treatment of water used in heating systems.	4	1983 1992	Chemical treatment is provided through a pot feeder. A side arm filter has also been installed in the heating piping. A backflow preventor has been provided for the boiler make-up. A glycol fill drum and hand transfer pump has been provided for the glycol supply to the air system heating coils.	
4.4.5	Low water cutoff/pressure relief valves and failure alarms (i.e., hot water heating).	4	1983 1992	Each boiler has a low water cut-off and a pressure relief valve. The low water cutouts are very difficult to access for maintenance.	
4.4.6	Heating air filtration systems and filters.	N/A	1983 1992	See 4.5.8.	
4.4.7	Heating humidification systems and components.	N/A	1983 1992	See 4.5.9.	

Section 4	Mechanical Systems	Rating	Comments/Concerns		Estim. Cost
4.4	**Heating Systems (cont'd)**		**Bldg. Section**	**Description/Condition**	
4.4.8	Heating distribution systems (i.e., piping, ductwork) and associated components (i.e., diffusers, radiators).	4	1983 1992	The hot water heating distribution system appears to be in reasonable condition. See Section 4.2.2 for interconnection of primary heating system to the fire protection system.	
4.4.9	Heating piping, valve and/or duct insulation.	4	1983 1988 1992	The piping and ductwork insulation appears to be in reasonable condition. All heating piping and ductwork has been recently tested for asbestos The results are not yet available.	
4.4.10	Heat exchangers.	4	1983 1992	There are two heat exchangers, a Supercharger plate and frame for the cooling tower and an Armstrong shell and tube for the glycol air system heating coils.	
4.4.11	Heating mixing boxes, dampers and linkages.	N/A	1983 1988 1992	Not applicable.	
4.4.12	Heating distribution/circulation in larger spaces (i.e., user comfort, temperature of outside wall surfaces).	F.I.	1983	Several classrooms are cold in the winter. At times the students are required to wear coats in class. Also the principal's office and the staff washroom is found to be cold. The heating loads for the school should be re-calculated and compared to the capacities of the installed equipment. The scheduling of the primary water temperatures to the heat pump units should also be verified.	
		4	1988 1992	The heating distribution in the two pods appears to be adequate.	
4.4.13	Zone/unit heaters and controls.	F.I.	1983	In general, the school is heated and air conditioned by unitary heat pumps. Problems of lack of heat have been reported throughout the school. The heating loads for all areas in the school should be calculated and compared to the installed equipment. The scheduling of the primary water temperature to the heat pumps by the EMCS should also be checked for optimization and proper capacity. There have been a large number of heat pump failures. Replacement costs are approximately $2000 per unit. Replacing all the heat pumps or converting to a different system type should be given consideration.	
Other					

Section 4	Mechanical Systems	Rating	Comments/Concerns		Estim. Cost
4.5	**Ventilation Systems**		**Bldg. Section**	**Description/Condition**	
4.5.1	Air handling units capacity and condition.	4	1983	Outdoor air ventilation is provided by two main air handlers, APU#1 and APU#2. APU#1 which supplies air to the return air at all the heat pumps operates on 100% outdoor air. APU#2, which provides ventilation for the gym has a return air fan, mixed air section and a heating coil. This unit is capable of operating at 100% outdoor air for summer ventilation. Both ventilation units have glycol heating coils.	
		4	1992	The north pod is heated by wall radiators and ventilated by a central ventilation unit. The ventilation unit has a mixed air section and a heating coil.	
		4	1988	The south pod is heated and ventilated by gas fired furnaces. Each classroom has a separate furnace.	
4.5.2	Outside air for the occupant load (if possible, reference CFM/occupant).	4	1983	The outdoor ventilation rate of APU-1 (supplies classrooms) is 1675 L/s or 5.6 L/s per student. APU-2 which supplies the gym is capable of providing 3540 L/s of outdoor air ventilation. The above data is based on design values and not measured values.	
		4	1988 1992	The outdoor ventilation rates for the two pods is unknown. No problems have been reported.	
4.5.3	Air distribution system (if possible, reference number of air changes/hour).	4	1983 1988 1992	See Section 4.5.2.	
4.5.4	Exhaust systems capacity and condition.	4	1983 1988 1992	Washrooms have exhaust fans. Capacities are unknown. There are no known problems.	
4.5.5	Separation of out flow from air intakes.	4	1983 1988 1992	No known problems of cross contamination of outdoor air intakes and building exhausts. Air intakes are through sidewall louvers and exhausts are generally at the roof. Separation from exhausts appears adequate.	
4.5.6	Special/dedicated ventilation and/or exhaust systems (i.e., kitchen, labs, CTS areas).	N/A	1983 1988 1992	Not applicable	
Other		N/A		Not applicable	

Section 4	Mechanical Systems	Rating	Comments/Concerns		Estim. Cost
4.5	**Ventilation Systems (cont'd)**		**Bldg. Section**	**Description/Condition**	
	Note: Only complete the following items if there are separate ventilation and heating systems.				
4.5.7	Ventilation controls (including use of current energy management technology).	4	1983	An EMCS system is used to control the air systems.	
4.5.8	Air filtration systems and filters.	4	1983 1988 1992	The air filters are a low efficiency. No problems have been reported.	
4.5.9	Humidification system and components.	4	1983	Humidification is provided by a Hydrotherm steam boiler and injection nozzles at the air systems.	
4.5.10	Heat exchangers.	4	1983	A water to glycol shell and tube heat exchanger is used to heat glycol which is used for heating air at the ventilation units. This piping circuit is open to atmosphere.	
4.5.11	Ventilation distribution system and components (i.e., ductwork, diffusers, mixing boxes, dampers, linkages).	3	1983	Air is supplied into the classrooms through overhead diffusers. There are problems with excessive noise in several classrooms. The air volumes and diffuser sizes should be verified and the heat pump air distribution should be rebalanced.	$ 12,500.00
Other					

Section 4	Mechanical Systems	Rating	Comments/Concerns		Estim. Cost
4.6	**Cooling Systems**		**Bldg. Section**	**Description/Condition**	
4.6.1	Cooling system capacity and condition (i.e., chillers, cooling towers, condensers).	4	1983	A heat pump air conditioning system is used. An indoor cooling tower through a plate and frame heat exchanger provides cooling for the heat pump circuit.	
		4	1988 1992	The two pods are not air conditioned.	
4.6.2	Cooling distribution system and components (i.e., ductwork, diffusers, mixing boxes, dampers, linkages)	4	1983	Individual heat pumps are used for cooling.	
4.6.3	Cooling system controls (including use of current energy management technology).	2	1983	The EMCS system controls the cooling system. At an outdoor condition of -8C, both the boilers and the cooling tower were operating. The EMCS control strategies should be fully checked to ensure proper operation of the central plant and optimum scheduling of the primary heat pump water temperature. On several occasions, the cooling coils have been frozen resulting in water leakage into the classrooms. The controls of the heat pump units should also be checked for proper settings, calibration and operation.	$ 15,000.00
4.6.4	Special/dedicated cooling systems (i.e., labs, CTS areas).	N/A	1983	Not applicable.	
Other					
4.7	**Building Control Systems**		**Bldg. Section**	**Description/Condition**	
4.7.1	Building wide/system wide control systems and/or energy management systems.	2	1983	Control air is provided by a duplex air compressor which appears to be in reasonable condition. There is a central Barber Colman Network 8000 EMCS system. All the control strategies should be reviewed for optimum and proper operation. See Sections 4.6.3, 4.4.12 and 4.4.13.	Included in 4.6.3
	Overall Mech Systems Condition & Estim. Costs				$ 49,500.00

Section 5	Electrical Systems	Rating	Comments/Concerns		Estim. Cost
5.1	**Site Services**				
5.1.1	Primary service capacity and reliability (i.e., access, location, components, installation, bus sizes - note whether overhead or underground).	4		Underground service from on-site pad mounted transformer. Installation is satisfactory.Main switchboard: 800A,120/208V, 3PH., 4W. Condition of switch board is satisfactory. Electrical room being used as storage room; clear up "clutter" in front of the switchboard and from around the generator set. Spare breaker capacity.	
5.1.2	Site and building exterior lighting (i.e., safety concerns).	4		Building mounted fixtures around the perimeter. Coverage is generally adequate; no, safety concerns expressed any about dark spots. Exterior lighting is photo-cell an and time clock controlled.	
5.1.3	Vehicle plug-ins (i.e., number, capacity, condition).	4		Approx. 25 energized parking stalls have been provided. Plug-ins are rail mounted and are in good condition. Plug-ins are time clock and temperature controlled. Number of energized stalls provided appears adequate.	
Other					
5.2	**Life Safety Systems**		**Bldg. Section**	**Description/Condition**	
5.2.1	Fire and smoke alarm systems (i.e., safety concerns, up-to-date technology, regularly tested).	3	All	Simplex 2001 system. Zoned, supervised and monitored. . Condition is good and system is tested annually, however, Simplex advises that this model is no longer manufactured, and parts availability is already a problem. Recommend that the system panel be replaced with a current model compatible with existing devices.	$ 5,000.00
5.2.2	Emergency lighting systems (i.e., safety concerns, condition).	4	All	Selected fixtures have been connected to the emergency power system as supplied by an emergency generator. Coverage is adequate.	
5.2.3	Exit lighting and signage (i.e., safety concerns, condition).	4	All	Illuminated exit signs have been provided over each required exit as per the requirements of the building code. Exit signs are of the incandescent type and in satisfactory condition and all signs are connected to emergency power.	
Other					

Section 5	Electrical Systems	Rating	Comments/Concerns		Estim. Cost
5.3	**Power Supply and Distribution**		**Bldg. Section**	**Description/Condition**	
5.3.1	Power service surge protection.	3		None provided.	$ 3,500.00
5.3.2	Panels and wireways capacity and condition.	2	1983	Breaker panels have been provided throughout the school for utilization of power. All panels are in satisfactory condition, well identified, and c/w directories. All panels have spare breaker spaces, however, fillers are missing from some of the panels which pose a safety hazard.	$ 200.00
5.3.3	Emergency generator capacity and condition and/or UPS (if applicable).	4	1983	60 kW engine generator set has been provided for emergency power. Engine is natural gas fired. System is c/w a battery charger and automatic transfer switch. System is tested regularly. Installation and operation are satisfactory. Room being used as storage room; a lot of "clutter" around the genset. is blocking access to the genset. and needs to be cleared up.	
5.3.4	General wiring devices and methods.	3	1983	Receptacles of the duplex type have been provided throughout the school including classrooms. Receptacles are in satisfactory condition. Concerns expressed about breakers tripping in some classrooms due to circuits overloading. Also, not enough receptacles have been provided in the library or the music room. Extension cords are commonly being used.	$ 2,000.00
5.3.5	Motor controls.	4		Siemens Motor Control Centre (MCC) has been provided for motor control. Installation and operation are satisfactory. There is spare capacity in the MCC for addition of new motor starters.	
Other					

Section 5	Electrical Systems	Rating	Comments/Concerns		Estim. Cost
5.4	**Lighting Systems**		**Bldg. Section**	**Description/Condition**	
5.4.1	Interior lighting systems and components (i.e., illumination levels, conditions, controls).	3	1983	Fluorescent fixtures have been provided throughout the school except the gym where metal halide fixtures have been provided.. Fluorescent fixtures are c/w T12 lamps and standard ballasts. Fixtures are in good condition. Levels are fairly low in most areas especially in the classrooms.. Average levels in typical areas are as follows: Classrooms: 250 to 500 lux (500 lux was in classrooms with skylights) Hallways: 200 lux to 300 lux Washrooms: 300 lux lux. Staff Rooms: 600 lux Gymnasium: 550 lux Library: 300 to 1200 lux: Library has a skylight... Music:400 lux. Administration: 600 to700 lux. Computer Lab : 450 lux Science/Art: 500 lux . Upgrade knighting in classrooms.	$ 10,000.00
5.4.2	Replacement of ballasts (i.e., health and safety concerns).	4	All	Standard ballasts. Unlikely that any ballasts contain PCB's. No safety concerns expressed.	
5.4.3	Implementation of energy efficiency measures and recommendations.	4	All	Some measures in place, such as controlled parking stalls. Recommend that as existing fixtures fail and need replacing, they be replaced with fixtures utilizing T8 lamps and electronic ballasts. Existing exit lights be replaced with LED type exit lights as the existing exit lights need replacing.	
Other					

Section 5	Electrical Systems	Rating	Comments/Concerns		Estim. Cost
5.5	**Network and Communication Systems**		**Bldg. Section**	**Description/Condition**	
5.5.1	Telephone system and components (i.e., capacity, reliability, condition).	3		Older telephone system. Only 2 lines available. System full to capacity and falls short of present needs.	$ 15,000.00
5.5.2	Other communication systems (i.e., public address, intercom, CCTV, satellite or cable TV).	3	All	Rauland MCI 200A PA/intercom system has been provided. System is obsolete, prone to frequent breakdowns and parts are hard to obtain.	$ 25,000.00
5.5.3	Network cabling (if available, should be category 5 or better).	4	All	Cat 5 cabling has been provided; data outlets have been provided in each classroom; classrooms are networked.	
5.5.4	Network cabling installation (i.e., in conduit, secured to walls or tables).	4		Data cabling installation is satisfactory.	
5.5.5	Wiring and telecommunication closets (i.e., size, security, ventilation/cooling, capacity for growth).	4		Data patch panels are wall mounted in a secure room. Room for growth, room is ventilated, and installation is satisfactory.	
5.5.6	Provision for dedicated circuits for network equipment (i.e., hubs, switches, computers).	3		Dedicated circuits have been provided for the hubs, etc but not computers in most classrooms. Provide dedicated circuits for computers in the classrooms.	$ 5,000.00
Other					

Section 5	Electrical Systems	Rating	Comments/Concerns		Estim. Cost
5.6	**Miscellaneous Systems**		**Bldg. Section**	**Description/Condition**	
5.6.1	Site and building surveillance system (if applicable).			N/A	
5.6.2	Intrusion alarms (if applicable).	4	All	Intrusion alarm has been provided. System consists of motion sensors, door contacts, etc. System is monitored and operation is satisfactory.	
5.6.3	Master clock system (if applicable).	4	All	No master clock system provided. Electric clocks have been provided in all areas.	
Other					
5.7	**Elevators/Disabled Lifts (If applicable)**				
5.7.1	Elevator/lift size, access and operating features (i.e., sensing devices, buttons, phones, detectors).	4		Electric wheelchair lift has been provided for handicap access to the second floor. Electrical installation is satisfactory.	
5.7.2	Condition of elevators/lifts.			N/A	
5.7.3	Lighting and ventilation of elevators/lifts.			N/A	
Other					
	Overall Elect. Systems Condition & Estim Costs				$ 65,700.00

Section 6	Portable Buildings	Rating	Comments/Concerns	Estim. Cost
	Note: Separate sheets can be completed, if necessary, for portable buildings of different ages and/or conditions.		**1988 - 4 ATTACHED PORTABLES (POD) ON SOUTH - EAST**	
6.1.1	Foundation and structure (i.e., signs of bending, cracking, settlement, rust, voids, stains).	4	Concrete pad footings - no signs of stress.	
6.1.2	Roof materials and components (i.e., signs of deterioration, leaks, ice build-up).	4	Asphalt and gravel built-up roofing. Interior drain. Some ponding evident but roof generally appears to be in good condition. Prefinished flashing in good condition.	
6.1.3	Exterior wall finishes (i.e., signs of deterioration, cracks, water stains).	4	Prefinished metal siding - good condition. Skirting painted - fair condition. Only two vents in skirting; add two more on north side as maintenance. Wooden steps at exterior doors should be painted as maintenance.	
6.1.4	Doors and windows (i.e., signs of deterioration, rusting hardware, glass cracks, peeling paint, damaged seals).	4	Solid core wood doors and hollow metal doors on steel frames - good condition. Residential type sliding aluminum windows - functional.	
6.1.5	Interior finishes (i.e., floors, walls, ceiling).	3	Floors: vinyl tiles - good condition. Carpets: worn out - replace. Walls: Vinyl faced panels - good condition. Ceilings: Suspended ceilings - good condition.	$ 18,500.00
6.1.6	Millwork (i.e., counters, shelving, vanities, cabinets).	4	Original millwork - functional.	
6.1.7	Fixed/wall mounted equipment (i.e., writing boards, tackboards, display boards, signs)	4	Greenboards and tackboards - adequate.	
6.1.8	Heating system.	4	Portables are heated and ventilated by individual gas fired furnaces. For more details see Section - 4.	
6.1.9	Ventilation system.			
6.1.10	Electrical, communication and data network systems.	4	Electrical systems in the portables are in satisfactory condition. Lighting levels are satisfactory.	
6.1.11	Health and safety concerns (i.e., fire and smoke alarms, fire protection systems, exiting, fire resistance rating of materials).	4	Fire extinguishers provided. Second exits from classrooms provided. No concerns.	
6.1.12	Barrier-free access.	4	Access provided via a wooden ramp from the main building.	
	Overall Portable Bldgs Condition & Estim Costs			$ 18,500.00

Section 6	Portable Buildings	Rating	Comments/Concerns	Estim. Cost
	Note: Separate sheets can be completed, if necessary, for portable buildings of different ages and/or conditions.		**1992 - 4 ATTACHED PORTABLES (POD) ON NORTH - EAST**	
6.1.1	Foundation and structure (i.e., signs of bending, cracking, settlement, rust, voids, stains).	4	Concrete pad footings - good condition.	
6.1.2	Roof materials and components (i.e., signs of deterioration, leaks, ice build-up).	4	Asphalt and gravel built-up roofing; interior drain - good condition. The rain water leader outlet is flush with skirting. Water flows through the tarmac and collects under the pod. Vents on skirting are sealed (see 6.1.3). Extend rain water leader as maintenance.	
6.1.3	Exterior wall finishes (i.e., signs of deterioration, cracks, water stains).	4	Stucco - some hairline cracks but generally in good condition. Damaged areas are repaired regularly. The asphalt around skirting has negative slope (see 1.1.6). Water from roof flows under the pod. All vents in skirting are blocked. Provide four vents on skirting as maintenance work. Skirting painted - in fair condition. Wooden steps with landings provided on east and west exterior doors. These steps are not permanently attached. The landings are at the same level as doors, allowing water to flow under doors. Paint on steps has deteriorated. Lower height of steps by about 650mm, permanently attach to portables and paint steps as regular maintenance.	
6.1.4	Doors and windows (i.e., signs of deterioration, rusting hardware, glass cracks, peeling paint, damaged seals).	4	Solid core and hollow metal doors on steel frames - good condition. Aluminum windows with top awning sections - good condition,	
6.1.5	Interior finishes (i.e., floors, walls, ceiling).	4	Floors: vinyl tiles - some tile joints are open. Replace these tiles as regular maintenance. Carpets - good condition. Walls: Vinyl faced panels - good condition. Ceilings - suspended ceilings - good condition.	
6.1.6	Millwork (i.e., counters, shelving, vanities, cabinets).	4	Good condition.	
6.1.7	Fixed/wall mounted equipment (i.e., writing boards, tackboards, display boards, signs)	4	Greenboards and tackboards - adequate.	
6.1.8	Heating system.	N/A	Since the attached portables are heated by hot water system and ventilated by central ventilation unit, the mechanical systems description, conditions and costs are included with the main building report in Section - 4.	
6.1.9	Ventilation system.			
6.1.10	Electrical, communication and data network systems.	4	Electrical systems in the portables are in satisfactory condition. Lighting levels are satisfactory.	
6.1.11	Health and safety concerns (i.e., fire and smoke alarms, fire protection systems, exiting, fire resistance rating of materials).	4	Fire extinguishers provided; second exits provided. No concerns.	
6.1.12	Barrier-free access.	4	Access provided via a wooden ramp from main building. An exterior wooden ramp also provided.	
	Overall Portable Bldgs Condition & Estim Costs			$ -

Section 7	Space Adequacy	This Facility			Equiv. New Facility			Surplus/ Deficiency	Comments/Concerns
		No.	Size	Total Area	No.	Size	Total Area		
7.1	Classrooms	16		1,307.90	14	80	1,120	187.90	
7.2	Science Rooms/Labs	1		94.05	2	95	190	-95.95	Science room is now being used as ECS space.
7.3	Ancillary Areas (i.e., Art, Computer Labs, Drama, Music,)			255.95	1 3	130 90	400	-144.05	
7.4	Gymnasium (incl. gym storage)	1 1	488.66 33.28	521.94	1 1	430 43	473	48.94	
7.5	Library/Resource Areas	1		267.43	1		220	47.43	
7.6	Administration/Staff, Physical Education, Storage Areas			408.67			511.10	-102.43	
7.7	CTS Areas								
	7.7.1 Business Education	N/A					—		
	7.7.2 Home Economics	N/A					—		
	7.7.3 Industrial Arts	N/A					—		
	7.7.4 Other CTS Programs	N/A					—		
7.8	Other Non-Instructional Areas (i.e., circulation, wall area, crush space, wc area)			1,011.06			1,069.11	-58.05	
	Overall Space Adequacy Assessment			3,867.00			3,983.21	-116.21	

Evaluation Component/ Sub-Component	Additional Notes and Comments

Evaluation Component/ Sub-Component	Additional Notes and Comments

Evaluation Component/ Sub-Component	Additional Notes and Comments

Evaluation Component/ Sub-Component	Additional Notes and Comments

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