School Facility Evaluation Project

Part I - Facility Profile and Summary

School Name:	Montgomery Junior High School	School Code:	9642
Location:	2116 MacKay Road N.W., Calgary	Facility Code:	1624
Region:	South	Superindendent:	Dr. Donna Michaels
Jurisdiction:	Calgary Board of Education	Contact Person:	Leanne Soligo
	District No. 19	Telephone:	(403) 214-1123
Grades:	7 to 9	School Capacity:	760

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 Montgomery School Building	1955	Two	1,808.90	Foundation: concrete Floors: ground concrete slab on grade, upper floor wood deck on wood joists Walls: concrete block with stucco cladding Roof: wood deck on wood joists with 20 year BUR	Heat and ventilation by unit ventilators with mixing sections served by new boiler (1992)	
Montgomery School Additions/ Expansions	1956	Two	1598.7	Foundation: concrete Floors: ground concrete slab on grade, upper floor concrete slab on open web steel joists Walls: concrete block Roof: 2" cedar deck on open web steel joists with 20 year BUR		
Link	Link 1982	One	197.12	Foundation: concrete, Floor: slab on grade Walls: concrete block Roof: Plywood deck on 2x8 wood joists		
Original Mackay School	1952	One	2,811.37	Foundation: concrete Floors: concrete slab on grade Walls: 2x6 wood studs with stucco cladding Roof: wood deck on 2x14 wood joists with BUR	New rooftop heating/ventilation unit	The original MacKay School was built independently of the Montgomery School The two were joined by a link in 1982. The MacKay section is treated separately here because it is physically separate and substantially different in character and quality.

Evaluator's Name:	Doug Campbell
& Company:	Carruthers & Associated Architects Inc.

Mackay School Additions/ Expansions	1960 1966 **8,148.1**	One One	960.3 771.7	Foundation: concrete Floor: concrete slab on grade Walls: concrete block Roof: wood deck on 2x10 wood joists Foundation: concrete Floor: concrete slab on grade Walls: concrete block Roof: wood deck on open web steel joists with BUR	Two supply fans with duct furnaces ducted beneath slab.	South wing East wing
Upgrading/ Modernization (identify whether minor or major)						
Portable Struct. (identify whether attached/perman. or free-standing/ relocatable)				None		

List of Reports/ Supplementary Information	Asbestos report by Environmental Health Professionals for the Calgary Board of Education September 30, 1997 Roof plan showing replacement dates of all roof areas

	Evaluation Components	Summary Assessment	Estim. Cost
1	**Site Conditions**	The site is too small. Paved athletic areas are badly cracked and uneven. Turf areas are worn out. Drainage swales are needed to channel runoff around the building. Gravel parking areas become icy in winter and muddy in spring.	$217,000
2	**Building Exterior**	Some serious structural issues are apparent in the settlement of the link and separation of joining walls between wings. Windows and doors in the original wings are deteriorating due to weather and are nor up to current standards. They should be replaced. Also, deterioration of finishes indicates building envelope failures. These must be corrected before refinishing is done.	$895,000
3	**Building Interior**	Finishes are well past their useful lives, and interior doors and fire separations must be upgraded. The original MacKay school is a highly flammable building. Without proper fire separations and sprinklers it is a safety hazard.	$772,000
4	**Mechanical Systems**	Generally all portions of the school require new ventilation systems. A new boiler is needed in the 1962 (MacKay) wing. Steam distribution system should be replaced throughout. New control technology is recommended.	$560,000
5	**Electrical Systems**	Provide new subdistribution, branch circuit wiring, and lighting upgrades required throughout. Existing life safety (fire alarm, emergency lighting, and exit signs) need to be upgraded.Energy efficiency performance will be improved with new lighting and LED exit signs.	$309,000
6	**Portable Buildings**	None	
7	**Space Adequacy:**		
	7.1 Classrooms	Deficiency: 72.9m2	
	7.2 Science Rooms/Labs	Surplus: 79.3	
	7.3 Ancillary Areas	Deficiency: 172.7	
	7.4 Gymnasium	Deficiency: -68.6	
	7.5 Library/Resource Areas	Surplus: 92.5	
	7.6 Administration/Staff Areas	Surplus:222.7m2	
	7.7 CTS Areas	Deficiency:94.8m2	
	7.8 Other Non-Instructional Areas (incl. gross-up)	Surplus: 167m2	
	Overall School Conditions & Estim. Costs		$2,753,000

Section 1	Site Conditions	Rating	Comments/Concerns	Estim. Cost
1.1	**General Site Conditions**			
1.1.1	Overall site size.	F. I.	Total site area of 40,439.3 sq. m. (4.04 hectares) is not adequate for a school of this size.	
1.1.2	Outdoor athletic areas.	2	Asphalt-paved basketball court has 2 hoops. Playing surface is badly cracked and eneven. Regrade and repave.	$20,000
		3	Grass playing fields are worn to bare soil and rutted. Regrade and resurface.	$30,000
1.1.3	Outdoor playground areas, including condition of equipment and base.	2	Asphalt surface is deeply cracked and surface has settled unevenly. There is a danger of tripping. Grass play areas are also worn and uneven. Refer to photos # 40, 41 and 42.	$40,000
1.1.4	Site landscaping.	3	Primarily grass, with some shrubs and trees along the west (street) side of the building. Fair condition	$15,000
1.1.5	Site accessories (i.e., perimeter and other fencing, guard rails, bike stands, flag poles).	3	Perimeter fence of welded tube steel along the west property line is rusting and weak at some joints. It does not meet building code standards for guards.	$10,000
1.1.6	Surface drainage conditions (i.e., drains away from building, signs of ponding).	2	High hills on the north and east drain down into the school yard. A gravel drive on these sides intercepts this water, but a heavy rain or snowmelt could flow against the foundations. Runoff from the hills flows over the playing fields and compound. The east wing of the MacKay block has a serious drainage concern - there is a continuous 1.5 m. high bank draining directly against the east wing, receiving runoff from the entire northeast playground. Also, runoff from the east flows onto an asphalt sidewalk and against the building face, causing icing and deterioration of the wall finishes. Subsidance of the soil beside the link (to the north block) causes some drainage against the building. Also, runoff from the lawn and parking lot at the west of the building flows onto the sidewalk.	$20,000
1.1.7	Evidence of sub-soil problems.	F.I.	Settlement of both paved surfaces and the building foundation along the link with the MacKay wing indicates underlying soil movement or settlement.	
1.1.8	Safety and security concerns due to site conditions.	3	Icing of the east playing fields and compound, and of the west sidewalk ia a safety hazard. Steps have no railings.	$10,000
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).	3	Pedestrian access by three sidewalks from MacKay Road N.W. Vehicle access: north and south entries to north parking lot, single drive into south parking lot. The north driving ramp to the parking lot is too steep - cars can slide into traffic when the ramp is slippery in winter. See 1.3.3 below. There is no wheelchair-accessible sidewalk - all walks have steps from the sidewalk.	See 1.3.3
1.2.2	Surfacing of on-site road network (note whether asphalt or gravel).	3	Gravel. Resurfacing cost included in 1.3.3 below.	See 1.3.3
1.2.3	Bus lanes/drop-off areas (note whether on-site or off-site).	4	No on-site bus drop-off or street lay-by. Drop-off occur on MacKay Road.	
1.2.4	Fire vehicle access.	F. I.	One street. Limited emergency vehicle access by the north gravel drive - further study needed.	
1.2.5	Signage.	3	Signs are required to identify the main entry door. Bus and car drop-off signs are needed.	$4,000
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	55 stalls in north staff lot; 20 stalls in south student lot Parking capacity is adequate No marked and paved handicapped stall	
1.3.2	Layout and safety of parking lots.	3	Manoeuvring into stalls is difficult in slippery conditions because the lot is sloped. Resurfacing cost included in 1.3.3	See 1.3.3
1.3.3	Surfacing and drainage of parking lots (note whether asphalt or gravel).	3	Gravel parking lots - regrading, resurfacing and improved drainage are recommended. Ponding occurs in ruts of parking lot; Some water drains down entry drives, leading to ice-build-up in winter.	$40,000
1.3.4	Layout and safety of sidewalks.	3	Concrete panels have heaved, causing trip ledges, paricularly along the heavily-used west side. West sidewalks are not wide enough to handle heavy traffic of students moving between classes. Widen.	$20,000
1.3.5	Surfacing and drainage of sidewalks (note type of material).	4	Most sidewalks concrete; some asphalt. Front (west) sidewalk ices because of runoff from the lawn.	
1.3.6	Curb cuts and ramps for barrier free access.	2	None at the street - all three entry sidewalks have steps. There is a ramp up from the entry sidewalk to the main entry, but there is a set of stairs from the MacKay Road sidewalk to the entry sidewalk. Thus, there is no wheelchair access to the wheelchair ramp.	$8,000
Other				
	Overall Site Conditions & Estimated Costs			$217,000

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).	F. I.	Mont. 1955	Floors in the south stairwell are sloped toward the southwest, indicating differential settlement.	
		F. I.	MacKay 1966	Gymnasium - NW and SW corners: cracks in foundation wall. North gymnasium exit - soil has eroded from under concrete stairs, leaving them cantilevered from the foundation.	
2.1.2	Wall structure and columns (i.e., signs of bending, cracking, settlement, voids, rust, stains).	3	Mont. 1962	Exterior walls of the washrooms and sewing rooms (northeast corner) have cracks in the mortar joints of the concrete block walls. North concrete block wall - science room - Expansion joint separating - need recaulking.	$10,000
		F. I.	1981 Link	Link to the MacKay wing shows serious signs of differential settlement. Connecting wall of link is separating from the south wall of the original Montgomery Junior High, leaving a gap that widens at the top. Foundation of link shows cracks. East wall of link is leaning outward at the top.	
		3	MacKay	West wall - crack in exterior wall between offices and classroom - patch.	$2,000
2.1.3	Roof structure (i.e., signs of bending, cracking, voids, rust, stains).	4			
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 states of repair.***		**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).	4	Mont.	Roof was replaced as follows: 1982 - Gymnasium, northeast class wing 1984 - Industrial Arts shop, south class wing 1989 - offices, washrooms Washroom and office roof sections show significant ponding.	
		4	MacKay	Roof was installed in 1990 (see attached roof plan). Some ponding occurs.	
2.2.2	Roof accessories (i.e., ladders, stairs, hatches, masts, exhaust hoods, chimneys, gutters, downspouts, splashpads).	4		OK	
2.2.3	Control of ice and snow falling from roof.	N/A		Flat Roofs	
2.2.4	Skylights (i.e., signs of distress, leaks, ice build-up, condensation, deteriorated materials/seals).	N/A		None	
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).	2	Mont.	**Original school**: West wall - extensive peeling paint on wood panels, fascias and frames indicates poor drainage, thermal control and possibly exfiltration. Some window frames show rot from water penetration. **1956 classroom wing**: NE and NW corners - cracking paint and staining indicates water running down the concrete block wall from the roof; north wall - security screens are rusting, staining the wall. East wall (Home Economics Room) - peeling paint; South wall (Home Economics room) - extensive peeling paint on window frames, wood panels and fascia; East wall (washrooms) - step-cracks in concrete block wall. West wall: paint peeling from wood clapboard cladding. See photos 49 to 60 inclusive.	$150,000
		2	MacKay	Stucco at base of walls cracked and spalling on north and west sides, indicating water penetration. Peeling paint on stucco walls of original building, particularly on the west wall at the central entry. North wall of east wing: water running down the face of the building and surface runoff against the wall have caused water staining, peeling paint and deterioration of mortar joints of the concrete block wall. East wall of east wing: peeling paint at the foundation due to inproper drainage (see 1.1.6 above). Refer to Photos 64 to 68 inclusive.	$80,000
2.3.2	Fascias, soffits, parapets (i.e., signs of looseness, stains, rust, peeling paint).	3	Mont.	Peeling paint at several areas of fascia - east, west and south sides. Costs included in 2.3.1 above.	See 2.3.1 above
		3	MacKay	Peeling paint at several areas of fascia. Costs included in 2.3.1 above.	See 2.3.1 above
2.3.3	Building envelope (i.e., evidence of air infiltration/ exfiltration through the exterior wall or ice build up on wall, eaves, canopy).	2	Mont.	Peeling paint on concrete block walls noted above indicates water exfiltration and poor drainage of rainwater. Costs included in 2.3.1 above.	See 2.3.1 above
		2	MacKay	Stucco is cracking on original wing due to thermal stress due to poor insulation. Peeling paint on concrete block walls indicates poor drainage of rainwater. Costs included in 2.3.1 above.	See 2.3.1 above
2.3.4	Interface of roof drainage and ground drainage systems.	4	Mont.	Roof perimeters drain through leaders to grade; most have splash pads, but several of these have sunk so that they no longer drain away from the building. NE corner of Industrial Arts - end spout missing from rainwater leader.	

Section 2	Building Exterior	Rating	Comments/Concerns		Estim. Cost
		4	MacKay	Roof drains into the storm sewer.	
2.3.5	Inside faces of exterior walls (i.e., signs of cracks, water stains, dust spots).	3	Mont.	Gymnasium - columns separating from concrete block walls. Northwest doors - crack in concrete block wall from floor to ceiling.	$14,000
			MacKay	Cracks are evident in the classroom walls. Underlying structural cause must be addressed. Cost here is to patch and repaint.	$16,000
Other					
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).	3	Mont.	Typical exterior doors are wood with metal skins. Extensive paint peeling. Weather seals require replacement.	$30,000
		3	MacKay	Typical exterior doors are wood. Weather seals require replacement.	$25,000
2.4.2	Door accessories (i.e., latches, hardware, screens, locks, alarms, holders, closers, security devices).	3	Mont.	All hardware is original, and past life span. Included in 2.4.1	
		3	MacKay	All hardware is original -worn and past useful life - requires replacement. Included in 2.4.1	
2.4.3	Exit door hardware (i.e., safety and/or code concerns).	3	Mont.	Worn - requires upgrading.	$10,000
		3	MacKay	Exit hardware is original - past useful life - requires replacement.	$8,000
2.4.4	Windows (i.e., signs of deterioration, rusting metal, glass cracks, peeling paint, damaged seals, sealed unit failure).	2	Mont.	The majority of windows are original - wood frame with double-pane unsealed units and blinds between the panes. Most have extensive paint peeling and water-damaged frames. Several have condensation between panes, indicating failure of the putty seals. Many of the blinds are seized and unworkable. Exterior sills are not properly sloped for drainage. South stairwell wall - extensive peeling of window and water staining of wall indicates that water from the roof is overflowing or entering the wall through a broken flashing. New windows with fibreglass frames on the north wall are in good condition. Most windows have been boarded up with plywood due to vandalism.	$300,000

Section 2	Building Exterior	Rating	Comments/Concerns		Estim. Cost
		3	MacKay	Windows are original wood frame, with double-pane unsealed units. Peeling paint on the exterior, interior and between windows, as well as rotting of wood indicates longstanding moisture problems: poor drainage and condensation.	$250,000
2.4.5	Window accessories (i.e., latches, hardware, screens, locks, alarms, holders, closers, security devices).	3	Mont.	Original Security screens on the north, west and south sides. Included in 2.4.4	See 2.4.4 above
		3	MacKay	Original - worn and broken - replace. Cost included in 2.4.4	See 2.4.4 above
2.4.6	Building envelope (i.e., signs of heavy condensation on doors or windows).	3	Mont.	As dscussed above.	See 2.3 and 2.4 above
Other		3	MacKay	As discussed above.	See 2.3 and 2.4 above
	Overall Bldg Exterior Condition & Estim Costs				$895,000

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).	F. I.	Mont.	Gymnasium - separation between columns and concrete block infill walls. Link east wall is leaning. See photos #33 to 35 and 71.	
			MacKay		
3.1.2	Floors (i.e., signs of cracks, heaving, settlement).	3	Mont.	Cracks in floor slabs in corridor lobby to SE entry. Ground floor slab in original wing has differential settlement. Link ground floor and upper stair landing (north end) show significant slope, indicating settlement. Uneven floor at upper corridor - east wing.	$20,000
		F. I.	MacKay	Original wing - west classroom floors are sloping down toward the outside wall, indicating differential settlement. Cracks in floor at the southwest end of the corridor, across classroom thresholds.	
Other					
3.2	**Materials and Finishes**		**Bldg. Section**	**Description/Condition**	
3.2.1	Floor materials and finishes.	2	Mont.	VAT floor tiles - worn and contain asbestos.-100,000 Library - carpet is worn and stained. -20,000 Tiles cracking and lifting at north link entry. Industrial Arts shop - wood parquet floor is slippery and needs non-slip material in work areas, particularly around machines.-20,000	$140,000
		2	MacKay	Vinyl asbestos tiles - worn, and some lifting.-70,000 Music room carpet worn.-7,000 Gymnasium - wood floor needs sanding and refinishing.-35,000 West of gymnasium flooring has evidence of separation.	$112,000

Section 3	Building Interior - Overall Conditions	Rating	Comments/Concerns		Estim. Cost
3.2.2	Wall materials and finishes.	4	Mont.	Typical walls painted concrete block in north addition and plaster on wood studs in original building.	
		3	MacKay	Original wing - corridor walls are wood to 2 m. with "tentest" fibreboard panels above - a weak, flammable and unsuitable material.	$50,000
3.2.3	Ceiling materials and finishes.	3	Mont.	Gymnasium - many acoustic tiles missing or loose; a more durable ceiling is required.-20,000 Computer lab and science rooms have water stains on ceilings. Acoustic tiles in corridors and classes - many tiles stained or damaged.-75,000	$95,000
		3	MacKay	Typically acoustic tile. Gymnasium has many missing and loose ceiling tiles.	$10,000
3.2	**Materials and Finishes (cont'd)**		**Bldg. Section**	**Description/Condition**	
3.2.4	Interior doors and hardware.	3	Mont.	Typical wood hollow core; metal-covered wood doors at fire separations. Hardware is original - worn condition. Handles are mostly round - no lever handles for handicapped access. Replace doors and hardware	$30,000
		3	MacKay	Wood throughout. Hardware is original - worn condition. Handles are round - no lever handles for handicapped access.	$25,000
3.2.5	Millwork	3	Mont.	Millwork is original - wood cabinets with p-lam or copmposite countertops - worn and battered. NW Science room - worktables have original ceramic sinks, which are chipped and worn, and do not drain properly. NE Home Economics rooms - cabinets are of residential quality - not sturdy enough for constant classroom use. They should be replaced.	$70,000
		3	MacKay	Millwork is original - wood cabinets with p-lam countertops. Worn and battered.	$15,000

Section 3	Building Interior - Overall Conditions	Rating	Comments/Concerns		Estim. Cost
3.2.6	Fixed/wall mounted equipment (i.e., writing boards, tackboards, display boards, signs).	3	Mont.	Original wood-framed blackboards in classes.	$50,000
		3	MacKay	Typically original wood-framed blackboards in classes.	$40,000
3.2.7	Any other fixed/mounted specialty items (i.e., CTS equipment, gymnasium equipment).	4	Mont.	Basketball hoops fixed. Limited equipment storage.	
		4	MacKay	Fixed basketball hoops.	
3.2.8	Washroom materials and finishes.	3	Mont.	Ground floor washrooms - extensive peeling paint on ceilings, and suspended ceiling tile system battered and deformed. Original ceramic fixtures still in place.	$8,000
		3	MacKay	Walls show paint cracking. Original fixtures and stall partitions.	$8,000
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 required.***		**Bldg. Section**	**Description/Condition**	
				Asbestos removal/encapsulation programme required **Barrier-free access required - entry ramps, doors, hardware.**	
3.3.1	Building construction type - combustible or non-combustible, sprinklered or non-sprinklered.		Mont.	Original building (south wing): combustible - wood frame walls, wood beams and roof deck. 1956 wing - partially - combustible - concrete block walls with steel beams and concrete upper floor. Roof has steel beams with unknown roof deck type. Industrial Arts room has concrete block walls, open web steel joists and a wood roof deck. Non-sprinklered.	
			MacKay	Combustible - wood frame walls, wood beams and roof deck. Non-sprinklered.	
3.3.2	Fire separations (i.e., between buildings, wings, zones if non-sprinklered).	F. I.	Mont.	As shown on attached plan. 45-minute doors at fire walls between original and 1956 addition.	
		F. I.	MacKay	None. The doors, frames and windows do NOT meet code requirements. There is a serious fire hazard in this school because of the flammability of the materials and the lack of proper fire separations.	
3.3.3	Fire resistance rating of materials (i.e., corridor walls and doors).	4	Mont.	Corridors typically wood frame with plaster finish in original building and painted concrete block in the 1956 addition.	
		F. I.	MacKay	Corridor walls in the original addition are of flammable materials. In east addition corridor walls are concrete block.	

Section 3	Building Interior - Overall Conditions	Rating		Comments/Concerns	Estim. Cost
3.3.4	Exiting distances and access to exits.	F. I.		Study required.	
3.3.5	Barrier-free access.	3	Mont.	Interior stairs make all areas inaccessible from the lobby except the office, gym and washrooms. Accessible stalls needed in washrooms. Shower thresholds make them inacessible. No lever door handles. Elevator required to provide access to upper floor.	$80,000
		3	MacKay	Doors do not meet current code dimension requirements. No lever door handles; no accessible washroom stalls.	See 3.2.4 above
3.3.6	Availability of hazardous materials audit (i.e., evidence of safety concerns with respect to asbestos, PCB's, chemicals).	F. I.		Asbestos report prepared for Calgary Board of Education. Asbestos present in VAT flooring, pipe elbows and ceiling fireproofing in mechanical room. Asbestos present in flooring, mechanical equipment and some ceiling spaces. Classroom baseboards may have exposed lead paint.	
3.3.7	Other health and safety concerns (i.e., evidence of excessive noise conditions, air quality problems)	3	Mont.	No dust collection system in Industrial Arts shop. Gaps in flooring in link entry cause tripping hazard.	$15,000
		3	MacKay	Music room has insufficient sound damping material.	$4,000
Other					
	Overall Bldg Interior Condition & Estimated Costs				$772,000

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		Site drainage consists of grading to catch basins and swalls to tie to street services.	
4.1.2	Exterior plumbing systems (i.e., irrigation systems, hose bibs).	4		Building has exterior hose bibbs.	
4.1.3	Outside storage tanks.	N/A		Not applicable.	
Other					
4.2	**Fire Suppression Systems**		**Bldg. Section**	**Description/Condition**	
4.2.1	Fire hydrants and siamese connections.	4		Street hydrant is located in front of school.	
4.2.2	Fire suppression systems (i.e., pumps, sprinklers, piping, reservoirs, hoses, stand pipes, CO2 systems).	4		Fire protection consists of 40 mm hose and valve system in cabinets tied to building service.	
4.2.3	Hand extinguishers, blankets and showers (i.e., in CTS areas).	4		Hand extinguishers located throughout.	
4.2.4	Other special situations (e.g., flammable storage areas, science labs, CTS areas).			Not applicable.	
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	All Sections	100 mm service from street service to 1956 portion with 50 mm meter to service 1956 and 1962 portions. South 1950 wing has separate 50 mm service with 40 mm meter.	
4.3.2	Water treatment system(s).	N/A		Not applicable.	
4.3.3	Pumps and valves (including backflow prevention valves).	5		Backflow protection on all services recently completed.	
4.3.4	Piping and fittings.	4		All piping on domestic is copper and is in good shape for age of facility.	
4.3.5	Plumbing fixtures (i.e., toilets, urinals, sinks)	4		Fixtures are adequate, require on going maintenance as necessary.	
4.3.6	Domestic hot water system (i.e., heater, storage tanks, failure alarms, pressure, volume, recirculation).	4		One self contained hot water heater gas fired in each of the three boiler rooms. Heaters all in good shape due to regular replacement.	
4.3.7	Sanitary and storm sewers, including sumps and pits (note whether sewage system is municipal or septic).	N/A		Not applicable.	
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).	4		1956 portion had new low pressure boiler installed in 1992 (Rite Boiler 3755, Serial 23157) single unit.	
		3		The 1962 section has existing hot water cast iron sectional boiler (National US Radiation #12-66, with 2750 MBH input) This unit is operating well for its age, no back-up.	$75,000
		3		The old McKay school section has a hot water cast iron sectional boiler (Well McLain #J-9 rated at 1200 MBH, Serial # 11097) This unit is operating well for its age, no back-up. It serves half of the McKay wing.	$90,000
4.4.2	Heating controls (including use of current energy management technology.	3		Heating controls on boilers consist of indoor/outdoor control. rest of system heating controls are pneumatic.	See 4.7.1
4.4.3	Fresh air for combustion and condition of the combustion chimney.	4		Combustion air is adequate in each room.	
4.4.4	Treatment of water used in heating systems.	4		Good treatment programs are in place.	
4.4.5	Low water cutoff/pressure relief valves and failure alarms (i.e., hot water heating).	4		Boiler controls are adequate.	
4.4.6	Heating air filtration systems and filters.	4		Fiberglass filters are in place on all systems.	
4.4.7	Heating humidification systems and components.	N/A		Not applicable.	

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		Generally distribution systems are in good shape. The 1956 wing steam and condensate is reaching its expected life span.	
4.4.9	Heating piping, valve and/or duct insulation.	4		Insulation of piping systems is in place. Duct insulation is only on outside air and exhaust.	
4.4.10	Heat exchangers.	4		Not applicable.	
4.4.11	Heating mixing boxes, dampers and linkages.	3		Unit ventilators have mixing sections in 1956 and 1962 wings are subject to problems and are unreliable.	See 4.5.1
4.4.12	Heating distribution/circulation in larger spaces (i.e., user comfort, temperature of outside wall surfaces).	3		Temperature control is inconsistent and causing complaints in many areas.	See 4.7.1
4.4.13	Zone/unit heaters and controls.	4		Unit heaters and entrance heaters are adequate.	
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.	3		1959 wing has no air system other than unit ventilators. a small roof top heat/cool unit was added for general office area in the last couple of years. (York D5CG060N08206A)	$165,000
		2		The 1962 wing has unit ventilators only which are suspect as to how much outside air is introduced.	$125,000
		4		The McKay school has had a new rooftop unit added within the last couple of years and ducted to approximately half of the classrooms. (Eng. Air DJ60 capacity 11,000 CFM, Serial # 21386RT-1). In addition the gym has a gas fired unit which serves floor supply air grilles for gym only. Unit has full outside air and mix with return air capability with mixing section.	
		2		The south leg of the McKay wing has two supply fans with duct furnaces ducted to below slab ductwork which in turn supplies classrooms on the east and west sides creating two zones. These units are old and ineffective. New ventilation and heating required.	$90,000
4.5.2	Outside air for the occupant load (if possible, reference CFM/occupant).	3		Outside air quantities per occupant are poor in the 1956 and 1962 portions and the south half of the McKay wing.	See 4.5.1
		4		One half of the McKay wing is good due to new unit.	
4.5.3	Air distribution system (if possible, reference number of air changes/hour).	3		Air changes in areas with unit ventilators are in the range of 5 to 6 A/C based on original concept.	See 4.5.1
		4		One half of the McKay wing is in the range of 8 A/C where new unit added.	
4.5	**Ventilation Systems (cont'd)**		**Bldg. Section**	**Description/Condition**	
	Note: Only complete the following items if there are separate ventilation and heating systems.				
4.5.4	Exhaust systems capacity and condition.	3		General exhaust systems for washrooms are low in capacity and air inlet locations are poor.	$10,000
4.5.5	Separation of out flow from air intakes	4		Separation of exhaust and intakes is satisfactory.	
4.5.6	Special/dedicated ventilation and/or exhaust systems (i.e., kitchen, labs, CTS areas).	2		Kitchen exhaust in lunch room is poor and inadequate.	$5,000
Other		4		Industrial Arts complete with dedicated make-up, recirculation dust collector, in addition exhaust is provided for welding, paint booth and dark room areas.	

Section 4	Mechanical Systems	Rating		Comments/Concerns	Estim. Cost
4.5.7	Ventilation controls (including use of current energy management technology).	3		All controls are pneumatic or electric based to suit individual situations. Systems operate on stop/start manually or by space thermostat if used for heating.	See 4.7.1
4.5.8	Air filtration systems and filters.	4		Systems have 50 mm fiberglass filters.	
4.5.9	Humidification system and components.	N/A		Not applicable.	
4.5.10	Heat exchangers.	3		All gas fired units on facility have exceeded their life span and should be replaced.	See 4.5.1
4.5.11	Ventilation distribution system and components (i.e., ductwork, diffusers, mixing boxes, dampers, linkages).	4		Ventilation ductwork either for supply or exhaust is minimal. But what is in place is ok.	
Other		2		Supply ducts in McKay wing below slab to be abandoned and new distribution provided with new systems.	See 4.5.1
4.6	**Cooling Systems**		**Bldg. Section**	**Description/Condition**	
4.6.1	Cooling system capacity and condition (i.e., chillers, cooling towers, condensers).	N/A		Not applicable.	
4.6.2	Cooling distribution system and components (i.e., ductwork, diffusers, mixing boxes, dampers, linkages)	N/A		Not applicable.	
4.6.3	Cooling system controls (including use of current energy management technology).	N/A		Not applicable.	
4.6.4	Special/dedicated cooling systems (i.e., labs, CTS areas).	N/A		Not applicable.	
Other		N/A		Not applicable.	
4.7	**Building Control Systems**		**Bldg. Section**	**Description/Condition**	
4.7.1	Building wide/system wide control systems and/or energy management systems.			Building controls are pneumatic, no energy management, getting old, poor control of air systems on site. Major alarms are tied to off site monitoring. School also has night set back on boilers systems.	
	Overall Mech Systems Condition & Estim. Costs			Systems are old, need upgrade to provide current acceptable operating conditions and control technology.	$560,000
				Evaluator: Dale Way, Hemisphere Engineering	

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).	3		Main distribution in 1987 phase is 800 amps, three phase, 4 wire. Fed underground, good condition with ample space for future.	$25,000
5.1.2	Site and building exterior lighting (i.e., safety concerns).	3		Main distribution in the McKay School is 400 amps, single phase, 3 wire, obsolete and should be replaced and consolidated onto the 1987 system.	
5.1.3	Vehicle plug-ins (i.e., number, capacity, condition).	3		Presently there is minimal building exterior lighting and parking lot lighting. Provide new on building and parking lot pole lighting.	$12,500
Other		3		Existing is in poor condition with 40 outlets to be upgraded along with mounting rail.	$12,000
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).	2		Existing system consists of a Simplex 4002 in the 19 wing and a Simplex 2001 in the 19 wing. System needs to be consolidated onto one system, provide additional bells and include for strobes.	$48,000
5.2.2	Emergency lighting systems (i.e., safety concerns, condition).	2		Existing emergency lighting is base building, does not meet code, and near end of life. Provide for new system throughout the building.	$21,000
5.2.3	Exit lighting and signage (i.e., safety concerns, condition).	2		Exit signs are generally base building, do not meet code, and are not connected onto emergency power. Provide for new throughout and connect onto emergency power.	$12,000
Other					

Section 5	Electrical Systems	Rating	Comments/Concerns		Estim. Cost
5.3	**Power Supply and Distribution**				
5.3.1	Power service surge protection.				
5.3.2	Panels and wireways capacity and condition.	3	1956	Most of the panels are full and obsolete. Install new panels throughout to provide required circuits for computer, existing, convenience, and future througout.	$20,000
5.3.3	Emergency generator capacity and condition and/or UPS (if applicable).	N/A	1956		
5.3.4	General wiring devices and methods.	3	1956	Existing installation is in fair condition. Several new outlets are required to meet classroom and corridor needs.	$9,500
5.3.5	Motor controls.	3	1956	Existing starters are near the end of their life and obsolete. Provide new MCC and replace all starters.	$3,500
Other		3	1956	Provide additional control and wiring for mechanical upgrades.	$5,000

Section 5	Electrical Systems	Rating	Comments/Concerns		Estim. Cost
5.4	**Lighting Systems**				
5.4.1	Interior lighting systems and components (i.e., illumination levels, conditions, controls).	3	1955	Existing lighting consists of incandescent surface and pendant fluorescent plastic blade louvres. All fixtures are over 50 years old and past their life cycle. Lighting levels in corridors are 15 - 20 fc, classrooms 30 - 55 fc. New fluorescent fixtures should be installed using T-8 lamps and electronic ballast to provide required light levels and new life cycle.	$60,000
5.4.2	Replacement of ballasts (i.e., health and safety concerns).	3	1955	Existing ballasts are at end of life cycle and may contain PCB's. Estimated cost for safe removal.	$3,000
5.4.3	Implementation of energy efficiency measures and recommendations.	3	1955	No energy efficient measures have been implemented. See Item 5.4.1 and 5.3.2	See 5.4.1 and 5.3.2
Other	Motor controls.	3		Existing starters are near the end of their life and obsolete. Provide new MCC and replace all starters.	$7,500
	Other	3		Provide additional control and wiring for mechanical system upgrades.	$12,000

Section 5	Electrical Systems	Rating		Comments/Concerns	Estim. Cost
5.5	**Network and Communication Systems**				
5.5.1	Telephone system and components (i.e., capacity, reliability, condition).	4			
5.5.2	Other communication systems (i.e., public address, intercom, CCTV, satellite or cable TV).	3		Some additional speakers are required in the 1955 and McKay School wings as well as existing amplifiers need to be upgraded	$8,000
5.5.3	Network cabling (if available, should be category 5 or better).	4			
5.5.4	Network cabling installation (i.e., in conduit, secured to walls or tables).	4			
5.5.5	Wiring and telecommunication closets (i.e., size, security, ventilation/cooling, capacity for growth).	4			
5.5.6	Provision for dedicated circuits for network equipment (i.e., hubs, switches, computers).	2		New dedicated circuits will be required to be installed throughout to meet network equipment demands.	$18,000
Other		2		There is no local area network installed to all classrooms. Two four-cable drops need to be installed in all classrooms and other designated areas.	$32,000

Section 5	Electrical Systems	Rating	Comments/Concerns	Estim. Cost
5.6	**Miscellaneous Systems**	N/A		
5.6.1	Site and building surveillance system (if applicable).	4		
5.6.2	Intrusion alarms (if applicable).	4		
5.6.3	Master clock system (if applicable).			
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).	N/A		
5.7.2	Condition of elevators/lifts.			
5.7.3	Lighting and ventilation of elevators/lifts.			
Other				
	Overall Elect. Systems Condition & Estim Costs			$309,000
			Evaluator: Gary Mctighe, Stebnicki, Robertson & Associates	

Section 7	Space Adequacy	This Facility			Equiv. New Facility			Surplus/ Deficiency	Comments/Concerns
		No.	Size	Total Area	No.	Size	Total Area		
7.1	Classrooms	18	75.9	1367.1	18	80	1440	-72.9	
7.2	Science Rooms/Labs	4	91.1	364.3	3	95	285	79.3	
7.3	Ancillary Areas (i.e., Art, Computer Labs, Drama, Music,)	4	89	357.3	2,3	130,90	530	-172.7	
7.4	Gymnasium (incl. gym storage)			828.4			897	-68.6	
7.5	Library/Resource Areas			396.5			304	92.5	
7.6	Administration/Staff, Physical Education, Storage Areas			828.4			605.7	222.7	
7.7	CTS Areas								
	7.7.1 Business Education								
	7.7.2 Home Economics	2		200.6	2	160, 100	260	-59.4	
	7.7.3 Industrial Arts			244.6			280	-35.4	
	7.7.4 Other CTS Programs								
7.8	Other Non-Instructional Areas (i.e., circulation, wall area, crush space, wc area)			1977			1810	167	
	Overall Space Adequacy Assessment			6564.2			6411.7	152.5	Net Capacity=685, Design instructional Area=3996 Reported Area=6441

Evaluation Component/ Sub-Component	Additional Notes and Comments