RECAPP Facility Evaluation Report

Aspen Regional Health Authority

Bonnyville Health Centre

B0995A

Bonnyville

Report run on: March 22, 2010 9:54 AM

Facility Details

Building Name: Bonnyville Health Centre
Address: 5001 Lakeshore Drive
Location: Bonnyville

Building Id: B0995A
Gross Area (sq. m): 12,421.00
Replacement Cost: $49,614,150
Construction Year: 1986

Evaluation Details

Evaluation Company: Koliger Schmidt architect engineer
Evaluation Date: June 26 2009
Evaluator Name: Steve Horvath

Total Maintenance Events Next 5 years: **$7,089,198**
5 year Facility Condition Index (FCI): **14.29%**

General Summary:

The hospital is a two storey building constructed in 1986 (11,740m²). A (684m²) addition was added in 1991 for the lab area including main floor and basement. The second floor was renovated in 2008 (195m²). The building has a central area with three wings. The central area consisting of main reception an elevator; waiting area; board room on the main floor; administrative offices are located on the second floor; also has 18 ward rooms and ultrasound diagnostics. A main floor wing houses 37 long term care residents and an atrium. The basement area (2435m²)houses the commercial kitchen, dining room, mechanical and storage rooms.
The hospital is generally in fair condition.

Structural Summary:

The building structure consists of deep concrete foundations consisting of pile and grade beams (assumed as no foundation details available), the superstructure consists of steel columns, beams and joist in combination with concrete block bearing walls. The floors are cast in place reinforced concrete in steel pans over steel joist. The non load bearing walls are of steel stud with gypsum board cladding. The structural elements are in fair condition.

Envelope Summary:

The exterior façade consist of brick for all sides. The windows are commercial grade sealed window units in anodized prefinished aluminum frames. The roof is built-up roofing consisting of tar and gravel for all flat roof areas; which is the majority of the roof areas. The sloped roof areas consists of painted metal which are located over the main floor area of the building. One wing roof and penthouse roof were replaced with EPDM roofing in 2008. Skylights are provided at the main floor atrium, which leak and have been problematic over the last 15 years. Painted metal canopies are provided at the perimeter of the building. The paint on the canopies is peeling.
The exterior is in fair condition.

Interior Summary:

The building interior in general is in fair condition, the flooring is worn in many areas. The interior finishes for the flooring area a combination of terrazzo and vinyl in the main corridors and ward rooms. Diagnostic rooms have vinyl. The office spaces are generally carpet. The stairs have terrazzo finishes for treads and risers on concrete stairs. The basement areas have vinyl flooring in general areas, carpet in offices and painted concrete in mechanical and storage rooms. The non load bearing partitions have painted gypsum board finish for the walls. The concrete block support walls are painted in most areas, jumbo ceramic tiles used on basement corridor walls.
Some of the vinyl base and terrazzo base is damaged also some poor joints in the vinyl flooring is evident, mostly from poor original installation.

Mechanical Summary:

The Bonnyville Healthcare Centre is heated with hot water boilers. The air handling units have preheat and heating coils, there are perimeter radiant heating panels, unit heaters and fan coil units through out the facility. There is a cooling tower and chiller feeding refrigerant to the cooling coils in the air handling units and coils in the ductwork. The laboratory area has air conditioning units. The air handling units supply VAV boxes some with heating coils and some with cooling coils. There is a steam boiler that provides steam to the nozzles in the air handling humidification sections and electric steam boilers for sterilization. There are medical compressed gas, nitrous oxide gas, vacuum , oxygen, and medical air systems. There is a diesel storage tank for the emergency generator. The domestic hot water is provided by heat exchangers, storage tanks and boilers. The mechanical systems have been well maintained and are in fair condition.

Electrical Summary:

The main power service is 2000A 120/208V 3ph 4w. CDP panels and transformers are located throughout. Branch circuit panels are located in various storage/utility rooms. There are 3 MCC's and small motor starters are used extensively. A VFD unit controls the main cooling tower motor load. All duplex receptacles are hospital grade and are color coded according to the power source. The wiring for the building is mostly conductors in conduit with BX used for lighting drops. L.V. Switching is used to control lighting in large spaces, and line voltage switches control smaller less frequented rooms. Incandescent downlighting and track lighting w/ retrofitted fluorescent lamps are used throughout. The majority of fluorescent lighting are metric type with T12 lamps and ballasts. The second floor has been recently renovated and all fixtures have been replaced with regular T8 lamps/ballasts. Emergency lighting is via various fluorescent fixtures on generator backup power, and the majority of exit signs are fluorescent with LED retrofit lamps. Exterior lighting consists of H.P.S. Wall packs, canopy fixtures, wall sconces, and fluorescent fixtures (at main entries) controlled by photocell. The fire alarm system is a Simplex multiplex system and is tied in with the clock system. The fire alarm system needs attention. A small intrusion and surveillance system is installed. The call system is manufactured by Rauland, and the original installation requires attention. The telephone system is a Toshiba PBX and is tied in with the paging speakers. Various staff panic alarm systems are installed. A small UPS system is installed for the Lab area, and one diesel 315Kw generator is installed.

Overall the electrical systems are in fair condition however the life safety systems are in poor condition.

Rating Guide	
Condition Rating	**Performance**
1 - Critical	Unsafe, high risk of injury or critical system failure.
2 - Poor	Does not meet requirements, has significant deficiencies. May have high operating/maintenance costs.
3 - Marginal	Meets minimum requirements, has significant deficiencies. May have above average operating maintenance costs.
4 - Acceptable	Meets present requirements, minor deficiencies. Average operating/maintenance costs.
5 - Good	Meets all present requirements. No deficiencies.
6 - Excellent	As new/state of the art, meets present and foreseeable requirements.

S1 STRUCTURAL

A1010 Standard Foundations* -1986

Concrete grade beams on concrete piles.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

A1010 Standard Foundations*-1991

Concrete grade beams on concrete piles.

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	100	MAR-10

A1030 Slab on Grade* - 1986

Basement floor slab and floors in crawl spaces

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

A1030 Slab on Grade* - 1991

Basement floor slab and floors in crawl spaces

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	100	MAR-10

A2020 Basement Walls (& Crawl Space)* -1986

Reinforced concrete walls

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

A2020 Basement Walls (& Crawl Space)*-1991

Reinforced concrete walls in basement area of labs

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	100	MAR-10

B1010.01 Floor Structural Frame (Building Frame)* -1986

Concrete filled steel pans supported by steel joist; steel columns and beams.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

B1010.01 Floor Structural Frame (Building Frame)*-1991

Concrete filled steel pans supported by steel joist; steel columns and beams.

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	100	MAR-10

B1010.02 Structural Interior Walls Supporting Floors (or Roof)*

Load bearing concrete block walls.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

B1010.03 Floor Decks, Slabs, and Toppings* -1986

Concrete filled steel pans supported by steel joist floors. Steel pan supported by steel joist for roofs

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

B1010.03 Floor Decks, Slabs, and Toppings* 1991

Concrete filled steel pans supported by steel joist floors. Steel pan supported by steel joist for roofs

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	100	MAR-10

B1010.06 Ramps: Exterior*

Sloped concrete walks at entries.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

B1010.07 Exterior Stairs*

Concrete steps at loading docks.

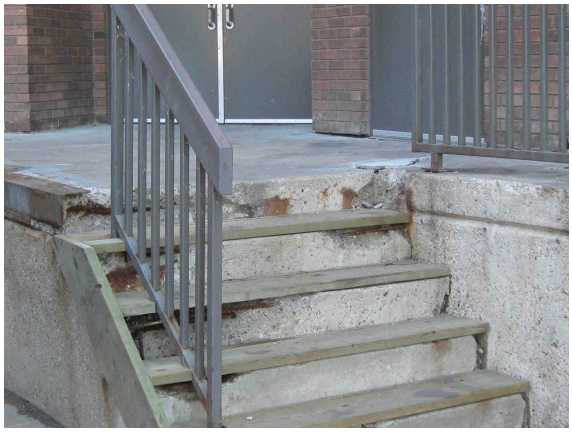
Rating	Installed	Design Life	Updated
3 - Marginal	1986	40	MAR-10

Event: Replace two sets of concrete steps(12 risers).

Concern:
Concrete flaked and deteriorated for two sets of steps at loading dock.
Recommendation:
Replace concrete steps.

Type	Year	Cost	Priority
Failure Replacement	2010	$12,000	High

Updated: MAR-10



Deteriorated concrete steps.

B1010.09 Floor Construction Fireproofing*

Firestopping not integral at floors and walls.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	50	MAR-10

Event: Budget for firestopping at pipes

Concern:
Excessive space around pipes and conduits where they pierce fire separations.
Recommendation:
Install required firestopping.

Type	Year	Cost	Priority
Code Repair	2010	$3,500	High

Updated: MAR-10

B1020.01 Roof Structural Frame* - 1986

Steel pans over steel joists utilized.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

B1020.01 Roof Structural Frame* -1991

Steel pans over steel joists utilized.

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	100	MAR-10

B1020.02 Structural Interior Walls Supporting Roofs*

Concrete block walls and steel columns and beams.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

B1020.04 Canopies*

Steel roof canopy above main entry. Also decorative sloped metal louvers at perimeter of building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

B1020.06 Roof Construction Fireproofing*

pipes at mechanical penthouse floor are sealed with concrete grout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

S2 ENVELOPE

B2010.01.02.01 Brick Masonry: Ext. Wall Skin* - 1991

Brick exterior cladding for building walls.

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	75	MAR-10

B2010.01.02.01 Brick Masonry: Ext. Wall Skin* -1986

Brick exterior cladding for building walls.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	75	MAR-10

B2010.01.02.02 Concrete Block: Ext. Wall Skin*

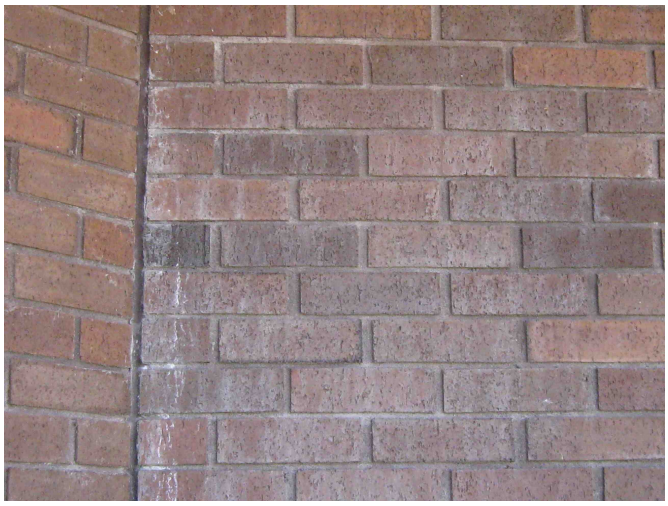
Concrete exterior walls at emergency bays and emergency power generator.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	75	MAR-10

B2010.01.09 Expansion Control: Exterior Wall Skin*

Expansion joints consist of architectural caulk.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	75	MAR-10



Cracked control joints at brick wall.

Event: Replace~ 450 lm of Expansion Joint

Concern:
Architectural sealant at expansion joints is cracked and brittle.
Recommendation:
Replace architectural sealant at expansion joints.

Type	Year	Cost	Priority
Failure Replacement	2010	$30,000	High

Updated: MAR-10

B2010.01.11 Joint Sealers (caulking): Ext. Wall**

Caulk around window and door frames at junction of exterior cladding.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	20	MAR-10

Event: Replace ~1,800 lm of caulk

Concern:
Caulk at junction of door and window frames with exterior cladding is brittle and is past its lifecycle.
Recommendation:
Replace caulk as required.

Type	Year	Cost	Priority
Failure Replacement	2010	$58,000	High

Updated: MAR-10

B2010.01.13 Paints (& Stains): Exterior Wall**

Painted metal canopies at perimeter of building.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	15	MAR-10

Event: Paint ~ 2100m² of metal louvers.

Concern:
Paint peeling for metal louver canopies above windows.
Recommendation:
Repaint affected areas.

Type	Year	Cost	Priority
Failure Replacement	2010	$92,000	Medium

Updated: MAR-10

B2010.02.03 Masonry Units: Ext. Wall Const.*

Face brick exterior wall cladding on building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

B2010.02.99 Other Exterior Wall Construction*

Non load bearing steel stud curtain wall backer for bricks.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

B2010.03 Exterior Wall Vapor Retarders, Air Barriers, and Insulation*

Polyethylene vapour barrier and batt insulation assumed in exterior steel stud walls.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

B2010.05 Parapets*

Parapets used at exterior of flat roofs.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

B2010.06 Exterior Louvers, Grilles, and Screens*

Metal exterior louvers used for mechanical exhaust and intake grilles, painted metal louver canopies over windows at perimeter above windows. The louver canopies have paint peeling, refer to exterior painting B2010.01.13.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

B2020.01.01.02 Aluminum Windows (Glass & Frame)**

Aluminum windows used at perimeter of building at patient rooms and lounges.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

Event: Replace ~450m² of windows.

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$570,000	Unassigned

Updated: MAR-10

B2020.02 Storefronts: Windows**

Aluminum storefront windows at entries, and basement lounge.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace ~ 56m² of Storefront Windows

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$76,200	Unassigned

Updated: MAR-10

B2030.01.01 Aluminum-Framed Storefronts: Doors**

Aluminum storefront doors at lounges.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 4 aluminum store front doors

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$15,000	Unassigned

Updated: MAR-10

B2030.01.06 Automatic Entrance Doors**

Automatic sliding alum. doors at front entry, emergency and access to mobile MRI.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 4 Automatic Entrance Doors

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$89,100	Unassigned

Updated: MAR-10

B2030.02 Exterior Utility Doors**

Utility doors are hollow metal doors in pressed steel frames - used at emergency exits and stairwells.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace 27 Utility Doors

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$38,600	Unassigned

Updated: MAR-10

B2030.03 Large Exterior Special Doors (Overhead)*

Overhead doors (3) at ambulance bay. One original, one 15 years old, one 1 year old.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	30	MAR-10

Event: Install one Overhead Door and operating hardware and devices

Concern:
Original 1986 installed door and operating hardware is in poor condition.

Recommendation:
Replace existing 1986 overhead door and hardware.

Type	Year	Cost	Priority
Failure Replacement	2010	$16,000	Medium

Updated: MAR-10

B3010.01 Deck Vapor Retarder and Insulation*

Built -up roofing membrane and rigid insulation.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

B3010.04.01 Built-up Bituminous Roofing (Asphalt & Gravel)** -1986

Built up tar and gravel roofing over main floor and second floor roofs.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	25	MAR-10

Event: Replace ~4630m² of built up roofing with SBS

Concern:
Existing tar and gravel roof has a lot of bubbles and is at the end of its lifecycle

Recommendation:
Replace tar and gravel roofing with EPDM membrane roofing.

Type	Year	Cost	Priority
Failure Replacement	2010	$909,300	High

Updated: MAR-10

B3010.04.01 Built-up Bituminous Roofing (Asphalt & Gravel)**-1991

Built up tar and gravel roofing over main floor at laboratory addition.

Rating	Installed	Design Life	Updated
3 - Marginal	1991	25	MAR-10

Event: Replace ~ 650 m² of built up roofing with SBS

Concern:
Existing tar and gravel roof has a lot of bubbles and is at the end of its lifecycle

Recommendation:
Replace tar and gravel roofing with EPDM membrane roofing.

Type	Year	Cost	Priority
Failure Replacement	2010	$127,700	High

Updated: MAR-10

B3010.04.04 Modified Bituminous Membrane Roofing (SBS)**

SBS membrane roofing installed for penthouse roof and part of East wing.

Rating	Installed	Design Life	Updated
4 - Acceptable	2008	25	MAR-10

Event: Replace ~ 1130m² of SBS Roofing

Type	Year	Cost	Priority
Lifecycle Replacement	2033	$222,000	Unassigned

Updated: MAR-10

B3010.07 Sheet Metal Roofing**

Metal roofing at perimeter of building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace ~5600m² of metal roofing

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$1,429,500	Unassigned

Updated: MAR-10

B3010.08.02 Metal Gutters and Downspouts**

Metal gutters and downspouts at perimeter of sloped roofs

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace ~ 850 lm of gutters and downspouts

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$20,000	Unassigned

Updated: MAR-10

B3020.01 Skylights**

Aluminum framed skylights at dining rooms and back lounge.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	20	MAR-10

Event: Repair ~4500 lm of skylight

Concern:
Skylights have been leaking for a number of years.
Recommendation:
Repair skylights with caulk at junction of frames, also rubberized sealing strips may also be required in conjunction with caulking.

Type	Year	Cost	Priority
Repair	2010	$240,000	High

Updated: MAR-10

B3020.02 Other Roofing Openings (Hatch,Vent, etc)*

Roof hatches, mechanical vent penetrations.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

S3 INTERIOR

C1010.01 Interior Fixed Partitions*

Gypsum board clad steel studs

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

C1010.05 Interior Windows*

Interior windows at offices, glass in steel frames

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	80	MAR-10

C1010.06 Interior Glazed Partitions and Storefronts*

Interior aluminum framed glazing at front entry

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	80	MAR-10

C1010.07 Interior Partition Firestopping*

Gypsum board fire stopping above interior partitions in ceiling space.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

C1020.01 Interior Swinging Doors (& Hardware)*

Wood interior doors in pressed steel frames at offices, patient rooms and general rooms.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	40	MAR-10

Event: Repair 354 interior doors

Concern:
Latching and locking hardware for interior doors worn and require replacing.

Recommendation:
Repair door hardware.

Type	Year	Cost	Priority
Repair	2010	$53,000	High

Updated: MAR-10

C1020.03 Interior Fire Doors*

Interior hollow metal doors in pressed steel frames at corridors separating wings.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

C1020.05 Interior Large Doors*

Large doors by O.R. areas

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

C1030.01 Visual Display Boards**

White boards, and tack boards in offices and conference room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

Event: Replace 4 display boards

Type	Year	Cost	Priority
Lifecycle Replacement	2013	$3,000	Unassigned

Updated: MAR-10

C1030.02 Fabricated Compartments(Toilets/Showers)**

Metal fabricated compartment at staff change and shower rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 7 Fabricated Compartments(Toilets/Showers)

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$12,000	Unassigned

Updated: MAR-10

C1030.05 Wall and Corner Guards*

Metal and vinyl wall guards at corners in corridors.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	15	MAR-10

C1030.06 Handrails*

Wood handrails with lacquer finish at corridors, brass metal railings in resident area.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Repair handrail at resident corridor.

Concern:
Floor mounted handrails at resident corridor loose on floor.
Recommendation:
Secure handrail to floor.

Type	Year	Cost	Priority
Repair	2010	$3,500	High

Updated: MAR-10

C1030.08 Interior Identifying Devices*

Plastic laminate directional signs mounted to walls and door identifiers.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

C1030.10 Lockers**

Lockers used by staff.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 200 metal lockers

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$45,000	Unassigned

Updated: MAR-10

C1030.12 Storage Shelving*

Plastic laminated fiberboard storage shelving used in kitchen, patient rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

C1030.14 Toilet, Bath, and Laundry Accessories*

Paper towel, toilet paper, grab bars used in public toilet, staff and patient toilet rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

C2010 Stair Construction*

Cast in place concrete exit stairs.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

C2020.02 Terrazzo Stair Finishes*

Terrazzo finish on exit stairs.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	60	MAR-10

C2020.08 Stair Railings and Balustrades*

Steel pipe rails for handrails and guards at stairs

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

C2030.01 Ramp Construction*

Sloped walks at entries used as ramps.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

C2030.02 Ramp Finishes*

Broom finished concrete

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

C3010.01 Concrete Wall Finishes (Unpainted)*

Unfinished concrete walls in mechanical room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	100	MAR-10

C3010.02 Wall Paneling**

Oak wall paneling in boards room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace ~50m² of oak panelling

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$12,200	Unassigned

Updated: MAR-10

C3010.04 Gypsum Board Wall Finishes (Unpainted)*

Gysum wall board finish on interior steel stud walls.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	60	MAR-10

C3010.06 Tile Wall Finishes**

Tile finishes in tub room, walls by elevators and basement corridor walls.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace ~ 20m² of wall tiles

Concern:
Wall tiles have been damage at elevator wall near dining room.
Recommendation:
Replace damaged tiles.

Type	Year	Cost	Priority
Repair	2010	$5,900	Medium

Updated: MAR-10

Event: Replace ~6500m² Tile Wall Finishes

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$1,450,000	Unassigned

Updated: MAR-10

C3010.11 Interior Wall Painting*

Paint peeling at walls of the corridors and general areas.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	10	MAR-10

Event: Paint ~7500m² of wall surfaces

Concern:
Corridor walls and common areas have paint peeling and require painting.

Recommendation:
Paint affected areas.

Type	Year	Cost	Priority
Failure Replacement	2010	$196,400	Medium

Updated: MAR-10

C3010.12.02 Vinyl Wall Covering *

Vinyl painted wall covering on second floor corridors.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	15	MAR-10

Event: Replace ~600 m² wall covering.

Concern:
De-laminating and damaged vinyl painted wall covering at second floor corridors.

Recommendation:
Replace vinyl wall covering.

Type	Year	Cost	Priority
Failure Replacement	2010	$35,000	Medium

Updated: MAR-10

C3020.01.02 Paint Concrete Floor Finishes*

Painted concrete floor in mechanical room

Rating	Installed	Design Life	Updated
3 - Marginal	1986	10	MAR-10

Event: Paint concrete floor (~200m²)

Concern:
Mechanical room concrete pitted and paint in poor condition.
Recommendation:
Repair affected area.

Type	Year	Cost	Priority
Failure Replacement	2010	$13,100	Medium

Updated: MAR-10

C3020.02 Tile Floor Finishes**

Tile floor finishes staff shower areas and kitchen.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

Event: Replace ~150m² of Tile Floor Finishes

Type	Year	Cost	Priority
Lifecycle Replacement	2036	$28,400	Unassigned

Updated: MAR-10

C3020.03 Terrazzo Floor Finishes*

Terrazzo floor finish for most areas on main floor of building except for, kitchen, change rooms, patient rooms; offices and second floor areas.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	75	MAR-10

Event: Repair ~90m² of terrazzo base.

Concern:
Terrazzo bases are damaged and requires repair.
Recommendation:
Repair affected areas.

Type	Year	Cost	Priority
Repair	2010	$38,500	Medium

Updated: MAR-10

C3020.07 Resilient Flooring**

Resilient flooring is utilized in all areas of the second floor, except offices, patient rooms and all common areas of the basement area.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	20	MAR-10

Event: Replacement ~ 6700m² Resilient Flooring

Concern:
The vinyl flooring has open seams and damaged bases in many areas and is also worn as it is original and past its life cycle.

Recommendation:
Replace all affected areas.

Type	Year	Cost	Priority
Failure Replacement	2010	$633,600	High

Updated: MAR-10

C3020.08 Carpet Flooring**

Carpet flooring is generally used in office areas.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	15	MAR-10

Event: Replace ~1,400m² of Carpet

Type	Year	Cost	Priority
Lifecycle Replacement	2013	$120,036	Unassigned

Updated: MAR-10

Event: Replace ~200m² of Carpet

Concern:
Carpet in office areas is worn and damaged.

Recommendation:
Replace affected areas.

Type	Year	Cost	Priority
Failure Replacement	2010	$16,000	Medium

Updated: MAR-10

C3030.04 Gypsum Board Ceiling Finishes (Unpainted)*

Gypsum board ceilings in electrical and equipment storage room areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	60	MAR-10

C3030.06 Acoustic Ceiling Treatment (Susp.T-Bar)**

Suspended T bar ceiling through out building accept for mechanical and equipment storage rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

Event: Replace ~9500m² Acoustic Ceiling Treatment (Susp.T-Bar)

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$479,900	Unassigned

Updated: MAR-10

D1010.01.02 Hydraulic Passenger Elevators**

Two passenger elevators

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Refurbish 2 Hydraulic Passenger Elevators

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$160,000	Unassigned

Updated: MAR-10

D1010.01.04 Hydraulic Freight Elevators**

One freight elevator is installed.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Refurbish one Hydraulic Freight Elevators

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$90,200	Unassigned

Updated: MAR-10

S4 MECHANICAL

D2010.04 Sinks**

There are stainless steel single compartment sinks, double compartment and double compartment with integral drain boards. The service sinks are floor mounted.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 61 Stainless Steel and 11 Service Sinks

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$121,000	Unassigned

Updated: MAR-10

D2010.05 Showers**

There are one piece prefab showers in most of the patient rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Add 1 Shower

Concern:
In the extended care area the central bath room does not have a shower.
Recommendation:
Add a shower.
Consequences of Deferral:
Some patients requiring assistance prefer to be showered.

Type	Year	Cost	Priority
Program Functional Upgrade	2010	$4,500	Unassigned

Updated: MAR-10

Event: Replace 40 Showers

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$183,000	Unassigned

Updated: MAR-10

D2010.06 Bathtubs**

There are central bathing rooms with tubs with lifts for bathing patients that need assistance. A few of the rooms have regular tubs. There is a sitz bath off the main central bathing room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 11 Bathtubs

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$18,000	Unassigned

Updated: MAR-10

D2010.08 Drinking Fountains / Coolers**

The facility has wall hung refrigerated drinking fountains.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	35	MAR-10

Event: Replace 6 Refrigerated Drinking Fountains

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$28,000	Unassigned

Updated: MAR-10

D2010.09 Other Plumbing Fixtures*

There are bedpan washers in the facility.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

D2010.10 Washroom Fixtures (WC, Lav, Urnl)**

The water closets are flush valve. The urinals are wall hung flush valve. The lavatories are counter mounted, the facility is in the process of replacing the faucet with a single faucet with a Toyo sensor. The lavatories are reaching the end of their life cycle some are chipped. The lavatories have an overflow which is not up to infectious disease control standards.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	35	MAR-10

Lavatory overflow.

Event: Replace 120 Water Closets, 6 Urinals and 157 Lavatories

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$334,000	Unassigned

Updated: MAR-10

Event: Replace 20 Lavatories

Concern:
Some of the lavatory are chipped.
Recommendation:
Replace the damaged lavatories. When replacing lavatories they should not have overflows.
Consequences of Deferral:
The damaged areas are a place for bacteria to develop.

Type	Year	Cost	Priority
Failure Replacement	2010	$5,500	High

Updated: MAR-10

Chipped lavatory.

D2020.01.01 Pipes and Tubes: Domestic Water*

The domestic water piping is copper.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

D2020.01.02 Valves: Domestic Water**

There are shut off valves on the domestic water main building supply and the various domestic water branch lines.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace 15 Valves

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$25,000	Unassigned

Updated: MAR-10

D2020.01.03 Piping Specialties (Backflow Preventors)**

There are 6 " backflow preventors on the domestic water service and the sprinkler line as well as a 2" backflow preventor on the water softener.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

Event: Replace 3 Backflow Preventors

Type	Year	Cost	Priority
Lifecycle Replacement	2013	$40,000	Unassigned

Updated: MAR-10

D2020.02.02 Plumbing Pumps: Domestic Water**

There are three in-line domestic water recirculation pumps.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

Event: Replace 3 Recirculation Pumps

Type	Year	Cost	Priority
Lifecycle Replacement	2013	$4,700	Unassigned

Updated: MAR-10

D2020.02.03 Water Storage Tanks**

There are three domestic hot water storage tanks.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 3 Water Storage Tanks

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$50,000	Unassigned

Updated: MAR-10

D2020.02.04 Domestic Water Conditioning Equipment**

The building has domestic water softening equipment.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

Event: Replace Domestic Water Conditioning Equipment

Type	Year	Cost	Priority
Lifecycle Replacement	2013	$15,000	Unassigned

Updated: MAR-10

D2020.02.06 Domestic Water Heaters**

The domestic water is heated in heat exchangers with steam from the boiler.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	20	MAR-10

Event: Replace the Domestic Water Heat Exchanger

Concern:
The heat exchanger is a problem as it leaks when the temperature drops.
Recommendation:
Replace the heat exchanger.
Consequences of Deferral:
The heat exchanger has to be monitored closely and does leak if the temperature is lowered causing flooding in the mechanical room.

Type	Year	Cost	Priority
Failure Replacement	2010	$92,962	High

Updated: MAR-10


Domestic hot water heat exchanger.

D2020.03 Water Supply Insulation: Domestic*

The domestic hot, cold and recirculation lines are insulated.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

D2020.03.02 Equipment Insulation: Domestic Water*

The domestic hot water storage tanks are insulated as well as the heat exchanger.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

D2030.01 Waste and Vent Piping*

The cast iron sanitary sewer piping has been splitting along the top of the pipes.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	50	MAR-10

Event: Prepare a Study of the Sanitary Sewer

Concern:
The sanitary sewer pipes are splitting along the top of the pipes and only along the top of the pipes. At present it is not known how extensive the problem is.

Recommendation:
Prepare a study to determine how severe the problem is , what is causing it and how piping needs to be replaced. The study would also need to determine how much piping has already been replaced.

Consequences of Deferral:
Sewer leaks.

Cracked Sewer Pipe.

Type	Year	Cost	Priority
Study	2010	$10,000	Unassigned

Updated: MAR-10

D2030.02.04 Floor Drains*

There are floor drains throughout the facility.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

D2030.03 Waste Piping Equipment*

There is a sump and pumps in the crawl space. The sink in the cast room has a clay trap. There is a grease interceptor for the kitchen.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

D2040.01 Rain Water Drainage Piping Systems*

The roof drains and rain gutters are tied into the storm sewer.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

D2040.02.04 Roof Drains*

The roof drains are Zurn cast iron dome type.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

D2040.02.06 Area Drains*

The building has several patios and balconies that have area drains.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

D2090.01 Compressed Air Systems (Non Controls)**

The compressor for the medical air is new.

Rating	Installed	Design Life	Updated
4 - Acceptable	2008	30	MAR-10

Event: Replace the Medical Compressed Air System Air Compressor and Dryer

Type	Year	Cost	Priority
Lifecycle Replacement	2038	$19,000	Unassigned

Updated: MAR-10

D2090.10 Nitrous Oxide Gas Systems**

There is nitrous oxide outlets in the operating rooms area.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace the Nitrous Oxide Gas Systems (60m and 5 outlets)

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$15,000	Unassigned

Updated: MAR-10

D2090.11 Oxygen Gas Systems**

There are oxygen outlets in the medical gas panels throughout the facility.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace Oxygen Gas System (120 outlets and 450 m of piping unconfirmed)

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$130,000	Unassigned

Updated: MAR-10

D2090.13 Vacuum Systems (Medical)**

There are medical vacuum outlets on the medical gas panels.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace Vacuum System (120 outlets and 450 m of piping unconfirmed)

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$150,000	Unassigned

Updated: MAR-10

D2090.15 Pool & Fountain Equipment**

There is a fountain with recirculation pumps.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

Event: Replace 3 Recirculation Pumps

Type	Year	Cost	Priority
Lifecycle Replacement	2013	$4,500	Unassigned

Updated: MAR-10

D2090.16 Medical Air System*

The medical gas panel have medical air outlets.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

D3010.01 Oil Supply Systems (Fuel, Diesel)*

There are two fuel pumps to supply diesel fuel to the emergency generator.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	60	MAR-10

D3010.01.01 Storage Equipment (Fuel Oil, Diesel)*

There is an 9,463 litre underground diesel storage tank that has diesel pumped to a smaller 200 litre tank inside the emergency generator room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

D3010.02 Gas Supply Systems*

Natural gas is piped from the meter to the boilers and kitchen equipment.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	60	MAR-10

D3020.01.01 Heating Boilers & Accessories: Steam**

There is one Well-McLaine steam boiler for humidification. There are three electric Chromolux model CCES-48 boilers for sterilization.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	35	MAR-10

Event: Replace 3 Electric Boilers

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$60,000	Unassigned

Updated: MAR-10

Event: Replace the Steam Boiler

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$20,000	Unassigned

Updated: MAR-10

D3020.01.03 Chimneys (&Comb. Air) : Steam Boilers**

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	35	MAR-10

Event: Replace the Chimney for the Steam Boiler

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$5,000	Unassigned

Updated: MAR-10

D3020.02.01 Heating Boilers and Accessories: H.W.**

The building has three Unilux 1000W hot water heating boilers.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	35	MAR-10

Event: Replace 3 Boilers

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$270,000	Unassigned

Updated: MAR-10

D3020.02.02 Chimneys (&Comb. Air): H.W. Boiler**

There is combustion air for the mechanical room complete with a unit heater connected to the ductwork.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace the Chimneys and Combustion Air

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$5,000	Unassigned

Updated: MAR-10

D3020.02.03 Water Treatment: H. W. Boiler*

The water treatment is added to the boiler through a chemical pot feeder.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

D3030.02 Centrifugal Water Chillers**

The chiller is 250 ton centrifugal liquid cooled.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

Event: Replace the Chiller

Concern:
The refrigeration system is probably charged with R-11. R-11 is no longer allowed as an environmentally acceptable refrigerant. When the chiller needs maintenance it will have to be replaced as R-11 is no longer available

Recommendation:
Replace the chiller.

Consequences of Deferral:
Loss of air conditioning and the potential for the release of a harmful substance into the environment.

Type	Year	Cost	Priority
Lifecycle Replacement	2013	$950,000	Medium

Updated: MAR-10

Existing chiller.

D3030.05 Cooling Towers**

There is a Baltimore cooling tower providing 250 tons of cooling.

Rating	Installed	Design Life	Updated
4 - Acceptable	2001	25	MAR-10

Event: Replace the Cooling Tower

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$115,000	Unassigned

Updated: MAR-10

D3040.01.01 Air Handling Units: Air Distribution**1986 Building

There are eight Pace air handling units supplying air to the building. APU-1 is made up of a supply air fan, return air fan, preheat coil, reheat coil, cooling coil, summer prefilter, winter prefilter, rigid filter and steam humidifier section. APU-1 ventilates the second floor. APU-1 is interlocked with EF-14, EF-19, EF-20, EF-21 and EF-22. APU-2 is made up of a supply air fan, return air fan, preheat coil, reheat coil, cooling coil, summer prefilter, winter prefilter, rigid filter and steam humidifier section. APU-2 is interlocked with EF-12 and EF-13. APU-2 ventilates the second floor. APU-3 is made up of a supply air fan, preheat coil, reheat coil, cooling coil, summer prefilter, winter prefilter, rigid filter, steam humidifier section, 3 HEPA filters and 3 final heating coils. APU-3 is interlocked with EF-18. APU-3 supplies 100% outside air to the Delivery Room, Patient Recovery Room and Intensive Care room. APU-4 is made up of is made up of a supply air fan, preheat coil, reheat coil, cooling coil, summer prefilter, winter prefilter, rigid filter, steam humidifier section, HEPA filter and final heating coil. APU-4 is interlocked with EF-17. APU-4 supplies 100% outside air to the operating room. APU-5 is made up of is made up of a supply air fan, preheat coil, reheat coil, cooling coil, summer prefilter, winter prefilter, rigid filter, steam humidifier section, HEPA filter and final heating coil. APU-5 is interlocked with EF-16. APU-5 supplies 100% outside air to the operating room. APU-4 and APU-5 provide backup for each other. APU-6 is made up of a supply air fan, return air fan, preheat coil, reheat coil, cooling coil, summer prefilter, winter prefilter, rigid filter and steam humidifier section. APU-6 ventilates the basement. APU-6 is interlocked with EF-9, EF-10 and EF-11. APU-7 is made up of a supply air fan, return air fan, preheat coil, reheat coil, cooling coil, summer prefilter, winter prefilter, rigid filter and steam humidifier section. APU-7 is interlocked with EF-5, EF-6 and EF-7.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 7 Air Handling Units

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$750,000	Unassigned

Updated: MAR-10

D3040.01.01 Air Handling Units: Air Distribution**1991 Lab Addition

APU-8 is a HAKKON unit made up of a supply air fan, return air fan, preheat coil, reheat coil, cooling coil, summer prefilter, winter prefilter, rigid filter and steam humidifier section. The unit is located in the basement under the Lab addition.

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	30	MAR-10

Event: Replace APU-8

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$100,000	Unassigned

Updated: MAR-10

D3040.01.01 Air Handling Units: Air Distribution**Negative Pressure Room

There is an air handling unit still in a crate on the roof that is intended for a negative pressure room.

Rating	Installed	Design Life	Updated
4 - Acceptable	2003	30	MAR-10

Event: Create Negative Pressure Room

Concern:
The equipment is sitting waiting to be used. None of the installation has been done other then lifting the unit onto the roof.

Recommendation:
Install the negative pressure room equipment and all the associated connections.

Consequences of Deferral:
This program should be put into service for the community.

Type	Year	Cost	Priority
Program Functional Upgrade	2010	$50,000	Medium

Updated: MAR-10


Negative pressure unit.

D3040.01.03 Air Cleaning Devices:Air Distribution*

The air handling units all have summer and winter pre-filters and rigid flow final filters. The air handing units for the operating room areas have HEPA filters.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

D3040.01.04 Ducts: Air Distribution*

The air distribution ductwork is galvanized sheet metal.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

D3040.01.06 Air Terminal Units: Air Distribution (VAV Box)**

The supply air in the facility is modulated by variable volume boxes.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 88 VAV Boxes

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$150,000	Unassigned

Updated: MAR-10

D3040.01.07 Air Outlets & Inlets:Air Distribution*

The supply air diffusers are the square ceiling type, linear grilles and light troffer type.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

D3040.03.01 Hot Water Distribution Systems**

The hot water heating piping is copper.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace the Hot Water Heating System (12,421 m²)

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$650,000	Unassigned

Updated: MAR-10

D3040.03.02 Chilled Water Distribution Systems**

The chilled water distribution system has four pumps that supply the chilled water to the cooling coils in the air handling units and in the ductwork.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace the Chilled Water Piping and 4 Pumps (12,241 m²)

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$200,000	Unassigned

Updated: MAR-10

D3040.03.03 Condenser Water Distribution Systems Pumps*

There are four condenser water pumps.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

D3040.04.01 Fans: Exhaust**

There are inline cabinet fans and roof mounted fans.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Install a Kitchen Range Hood

Concern:
There is a range in the recreational kitchen that does not have a range hood.
Recommendation:
Install a range hood.
Consequences of Deferral:
Cooking odors spread to other areas of the facility.

Type	Year	Cost	Priority
Indoor Air Quality Upgrade	2010	$1,500	Unassigned

Updated: MAR-10


Kitchen area.

Event: Replace 30 Exhaust Fans

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$60,000	Unassigned

Updated: MAR-10

D3040.04.03 Ducts: Exhaust*

The exhaust ducts are galvanized sheet metal.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	50	MAR-10

D3040.04.05 Air Outlets and Inlets: Exhaust*

The exhaust inlets are eggcrate grilles and the shop area has a paint hood and a welding hood. There are fume hoods in the laboratory.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

D3040.05 Heat Exchangers**

The heating system has a hot water to glycol heat exchanger.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace Heat Exchanger

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$19,000	Unassigned

Updated: MAR-10

D3040.06 Other HVAC Distribution Systems*

There is an electric snow melt system.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

D3050.01.04 Unit Air Conditioners**

There is are two rooftop condensing units with wall mounted air conditioner added for the lab area. They are Mr Slim units manufactured by Mitsibushi charged with R-22.

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	30	MAR-10

Event: Replace 2 Air Conditioners

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$40,000	Unassigned

Updated: MAR-10

D3050.03 Humidifiers**

The hospital is humidified with steam humidifier nozzles in the ventilation units supplied by a separate steam boiler.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

Event: Replace the Humidification System

Type	Year	Cost	Priority
Lifecycle Replacement	2013	$190,000	Unassigned

Updated: MAR-10

D3050.05.02 Fan Coil Units**

There are fan coil units at the entrances and in the crawl space.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 8 Fan Coil Units

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$55,000	Unassigned

Updated: MAR-10

D3050.05.03 Finned Tube Radiation**

There is some finned tube radiation in the administration areas of the main floor and a portion of the basement. The radiation cabinets on the main floor are custom wooden cabinets.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace 85 meters (unconfirmed) of Finned Tube Radiation

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$35,000	Unassigned

Updated: MAR-10

D3050.05.06 Unit Heaters**

There are unit heaters in the service areas of the building and in the crawl space.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace 35 Unit Heaters

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$150,000	Unassigned

Updated: MAR-10

D3050.05.08 Radiant Heating (Ceiling & Floor)**

The building has radiant heating panels around the perimeter.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	35	MAR-10

Event: Replace Ceiling Radiant Heating Panels (1,000m unconfirmed)

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$575,000	Unassigned

Updated: MAR-10

D3060.02.01 Electric and Electronic Controls**

Some of the controls are electric/electronic.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace the Electric and Electronic Controls (12,421 m²)

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$180,000	Unassigned

Updated: MAR-10

D3060.02.02 Pneumatic Controls**

Some of the controls are pneumatic.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace the Pneumatic Controls (12,421 m²)

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$75,000	Unassigned

Updated: MAR-10

D3060.02.05 Building Systems Controls (BMCS, EMCS)**

The BMCS is a Johnson Controls Metasys system.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

Event: Replace the Building Systems Controls (BMCS) (12,421 m²)

Type	Year	Cost	Priority
Lifecycle Replacement	2013	$350,000	Unassigned

Updated: MAR-10

D4010 Sprinklers: Fire Protection*

The building is sprinklered. There are siamese connections at the front of the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	60	MAR-10

D4030.01 Fire Extinguisher, Cabinets and Accessories*

There are dry chemical fire extinguishers in cabinets throughout the facility.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

D4090.04 Dry Chemical Fire Extinguishing Systems (Kitchen Hood)**

The kitchen range hood has a dry chemical fire extinguishing system in the range hood.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Event: Replace Kitchen Rangehood Dry Chemical Fire Extinguishing System

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$17,000	Unassigned

Updated: MAR-10

S5 ELECTRICAL

D5010.02 Secondary Electrical Transformers (Interior)** - 1986 Const.

There are 7 Federal Pioneer transformers located throughout. The transformer details are as follows;

Transformer T1 450KVA 600V 120/208V 3ph 4w (located in the main electrical room)
Transformer T2 225KVA 600V 120/208V 3ph 4w (located in room B-37)
Transformer T3 75KVA 600V 120/208V 3ph 4w (located in room B-42)
Transformer T4 75KVA 600V 120/208V 3ph 4w (located in the ambulance garage)
Transformer ET1 225KVA 600V 120/208V 3ph 4w (located in the main electrical room)
Transformer ET2 75KVA 600V 120/208V 3ph 4w (located in room B-37)
Xray transformer 150KVA 600V 220/300V 3ph 4w (located in room 1404)

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Typical federal pioneer transformer

Event: **Replace 7 Transformers**

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$110,000	Unassigned

Updated: MAR-10

D5010.02 Secondary Electrical Transformers (Interior)** - 1991 Lab

One (1) Rex power manufacturing Transformer ET2 150KVA 600 277/408V 3ph 4w is installed in the main electrical room. The transformer feeds the lab emergency power panel.

Rating	Installed	Design Life	Updated
4 - Acceptable	1990	40	MAR-10

75KVA transformer ET2

Event: Replace 1 75KVA transformer

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$10,000	Unassigned

Updated: MAR-10

D5010.03 Main Electrical Switchboards (Main Distribution)**

The main distribution switchgear and distribution panels are manufactured by federal pioneer. Panels are color coded for panel voltage, beige for 347/600V and grey for 120/208V. The main service is 2000A 347/600V 3ph 4w. The main distribution feeds 7 CDP panels located throughout the building. The details of the distribution are as follows;

MDP - 2000A 347/600V 3ph 4w (3 Spaces for future) (located in the main electrical room B-11)
CDP E6D1 - 347/600V 3ph 4w (3 spaces for future) (located in the main electrical room B-11)
CDP E2D1 - 120/208V 3ph 4w (4 spaces for future) (located in the main electrical room B-11)
CDP 6D1 - 347/600V 3ph 4w (3 spaces for future) (located in the main electrical room B-11)
CDP 6D2 - 347/600V 3ph 4w (8 spaces for future) (located in room B-19)
CDP 2D1 - 1600A 120/208V 3ph 4w (5 spaces for future) (located in the main electrical room B-11)
CDP 2D2 - 400A 120/208V 3ph 4w (2 spaces for future) (located in room B-37)
CDP 2D3 - 400A 120/208V 3ph 4w (6 spaces for future) (located in room B-42)
CDP 2D4 - 400A 120/208V 3ph 4w (7 spaces for future) (located in the ambulance garage)
CDP E2D2 - 120/208V 3ph 4w (located in room B-37)

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-10

Main distribution switchgear

Event: **Replace main switchgear and 9 CDP panels**

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$250,000	Unassigned

Updated: MAR-10

D5010.05 Electrical Branch Circuit Panelboards (Secondary Distribution)** - 1986 Const.

All branch circuit panels are manufactured by federal pioneer. There are approximately 59 branch circuit panels are located throughout the building. Where panels are located in regularly occupied areas, they are flush mounted, and surface mounted were located in utility/service areas. The panels have lockable doors and are color coded according to the voltage, 347/600V panels are beige, and 120/208V panels are gray. The building personnel report that there is approximately 25% spare capacity in the panels for future. There are approximately 7 federal pioneer isolated power panels installed in the O.R., Trauma, and I.C.U. areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Typical 120/208V 3ph 4w branch circuit panel

Event: Replace 66 Branch Circuit Panelboards

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$330,000	Unassigned

Updated: MAR-10

D5010.05 Electrical Branch Circuit Panelboards (Secondary Distribution)** - 1991 Lab

There are two (2) federal pioneer branch circuit panels installed in the Lab area. Panel M-2T is 42cct 120/208V 3ph 4w flush mounted panel. Panel M-2ED is an 84cct 120/208V 3ph 4w flush mounted panel.

Rating	Installed	Design Life	Updated
4 - Acceptable	1990	30	MAR-10

Event: Replace 2 branch circuit panels

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$10,000	Unassigned

Updated: MAR-10

D5010.07.01 Switchboards, Panelboards, and (Motor) Control Centers**

There are three (3) Klockner-Moeller Series 200 Motor Control Centres installed. The details of the MCC's are as follows;

MCC#1 4 sections 600A 600V 3ph (6 spare, 1 space) (located in room B-51)
MCC#2 - 6 sections 600A 600V 3ph (6 spare, 5 spaces) (located in the mechanical penthouse)
MCC#E2 - 6 sections 600A 600V 3ph (12 spare, 3 spaces) (located in the mechanical penthouse)

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

MCC #2 and MCC #E2

Event: Replace 3 Motor Control Centers

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$130,000	Unassigned

Updated: MAR-10

D5010.07.02 Motor Starters and Accessories**

Three (3) Telemecanique magnetic motor starters c/w hoa switches are used for steam generators. The starters are located in room B-19.

Rating	Installed	Design Life	Updated
4 - Acceptable	2001	30	MAR-10

Event: Replace 3 magnetic motor starters

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$7,000	Unassigned

Updated: MAR-10

D5010.07.02 Motor Starters and Accessories** - 1986 Const.

Small motor loads in public areas are controlled via keyed manual motor starters. Toggle manual motor starters are used in other areas. Approximately half of the starters have pilot lights. All of the manual starters are manufactured by Square D. Local disconnects located to adjacent to larger motor loads are manufactured by federal pioneer.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Typical manual motor starters

Event: Replace 100 manual motor starters

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$40,000	Unassigned

Updated: MAR-10

D5010.07.02 Motor Starters and Accessories** - 1991 Lab

There are two (2) square D magnetic motor starters c/w HOA switches installed in the basement portion of the Lab to control the air handling system supply and return fans.

Rating	Installed	Design Life	Updated
4 - Acceptable	1990	30	MAR-10

Square D magnetic motor starters

Event: Replace Motor Starters

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$9,000	Unassigned

Updated: MAR-10

D5010.07.03 Variable Frequency Drives**

One (1) MGI Technologies VFD is connected to the cooling tower motor load. The VFD is located in the mechanical penthouse. The installation dates within the last 10 years.

Rating	Installed	Design Life	Updated
4 - Acceptable	2001	30	MAR-10

MGI Technologies VFD panel

Event: Replace one Variable Frequency Drive

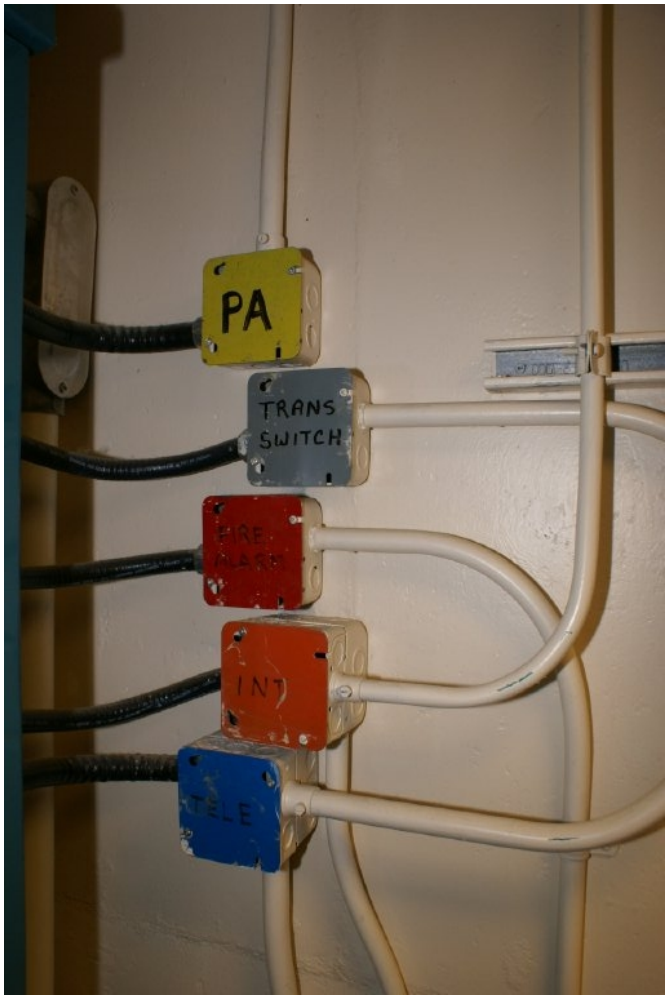
Type	Year	Cost	Priority
Lifecycle Replacement	2031	$12,000	Unassigned

Updated: MAR-10

D5020.01 Electrical Branch Wiring* - 1986 Const.

The majority of the building is wired via conductors in conduit. Armoured BX cable is used for lighting drops and very sparingly in other areas. Sealtite flex cable is used in all areas where moisture may be present (Laundry, Coolers, Dishwashing, etc.). All conduits are color coded at regular intervals. Receptacles are standard style, hospital grade with stainless steel coverplates. The receptacles are colored according to the source of the power or type (Regular Power, Emergency, UPS, Isolated Ground, etc.)

Rating	Installed	Design Life	Updated
3 - Marginal	1986	50	MAR-10



Typical color coded wiring methods for the building

Event: **Repair damaged conduits at 3 locations**

Concern:

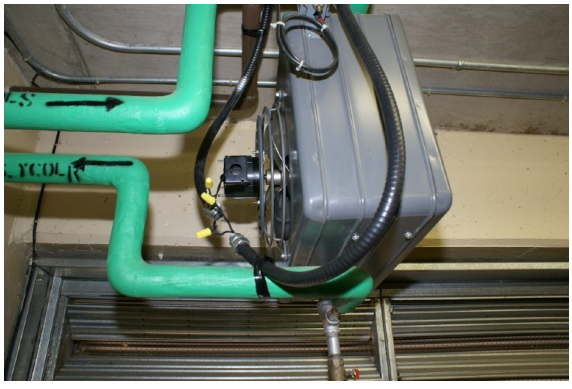
The 80% of the junction boxes located at the loading dock are damaged. The exhaust fan in the generator room is wired incorrectly.

Recommendation:

Repair damaged junction boxes in the loading dock. Provide junction box in the unit heater and wire correctly

Consequences of Deferral:

Both situations present risk of electrical shock. Water can penetrate the exposed damaged junction boxes and damage wiring.



Improper wiring of unit heater in the generator room.

Type	Year	Cost	Priority
Repair	2010	$6,000	Medium

Updated: MAR-10

D5020.01 Electrical Branch Wiring* - 1991 Lab

The majority of the lab areas is wired via conductors in conduit. Armoured BX cable is used for lighting drops. Receptacles are standard style, hospital grade with stainless steel coverplates. The receptacles are colored according to the source of the power or type (Regular Power, Emergency, UPS, Isolated Ground, etc.). A steel dual channel raceway is installed above the counter. Half of the raceway contains power, the other half contains communications.

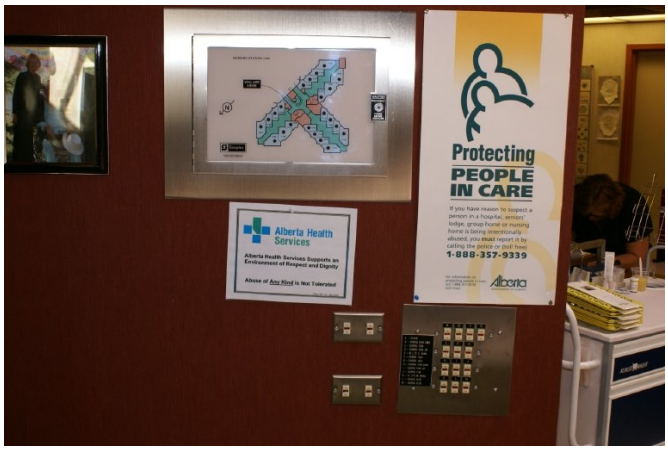
Rating	Installed	Design Life	Updated
4 - Acceptable	1991	50	MAR-10

Dual channel raceway installed above counters.

D5020.02.01 Lighting Accessories (Lighting Controls)* - 1986 Const.

The primary method of switching is via rocker style L.V. switches. Public areas are controlled from switch locations at staff areas (i.e. Nurse Stations, Front Desk, etc.) Non-public areas have local L.V. switches located at main entries/exits of the room. The majority of the building utilizes two-level switching of fixtures. Low voltage relay cabinets are located throughout the building adjacent to branch circuit panels feeding lighting. Relays and panels are manufactured by canadian general electric. Line voltage toggle switches are located in various utility and mechanical areas to switch local lighting.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10



Typical rocker style L.V. Switches in the main corridors.

D5020.02.01 Lighting Accessories (Lighting Controls)* - 2008 Reno.

Line voltage switches in the renovated second floor patient rooms have been replaced with ivory decora style switches. Slider style dimmers are installed to dim incandescent lighting in the rooms.

Rating	Installed	Design Life	Updated
5 - Good	2008	30	MAR-10

D5020.02.02.01 Interior Incandescent Fixtures* - 1986 Const.

Incandescent downlights c/w black baffles are installed throughout the building. The downlights have been retrofitted with fluorescent lamps. Incandescent track lighting is installed in the elevator lobbies, and mounted on mullions where skylights/atriums are located as well as other various locations throughout. Incandescent night lights are installed in patient rooms at walkways to the bathroom, the night lights are tied into the building management system. Recessed incandescent fixtures are installed in the patient washrooms. Square recessed halogen exam fixtures are located above patient beds. Tiffany style pendant fixtures are located in the cafeteria, library and in the long term care common area. The fixtures have been retrofitted with fluorescent lamps. Hazardous location incandescent lighting is located in the paintshop.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Typical incandescent track lighting

D5020.02.02.01 Interior Incandescent Fixtures* - 1998 Reno.

Incandescent downlights c/w clear reflectors/black baffles are installed in the 1998 renovation area.

Rating	Installed	Design Life	Updated
4 - Acceptable	1998	30	MAR-10

Incandescent downlighting in the 1998 reno area.

D5020.02.02.02 Interior Florescent Fixtures** - 1986 Const.

Fluorescent fixtures types vary throughout the hospital. All fluorescent fixtures are metric type with 12 lamps and ballasts. Public corridors have recessed fluorescent valance fixtures w/ deep cell parabolic lenses. Recessed 2x4 fixtures w/k12 lenses are installed in larger rooms. Approximately 90% of 2x4 fixtures are 3-Lamp while the remaining fixtures are 4-lamp. Both recessed and surface mounted 2-Lamp 1x4 fluorescents w/ k12 lenses are installed in smaller rooms. Patient rooms have fluorescent valances with eggcrate lenes above the washroom vanities and above the bed. Fluorescent wall bracket fixtures are installed above sinks in the locker rooms. Fluorescent striplights w/ wireguards are installed in the crawlspace. Overall lighting levels are good and as follows;

Physio Therapy - 27FC
Trama Room - 100FC
Central Bathing - 67FC
Kitchen - 20FC to 40FC
Laundry - 40FC to 50FC
CSR - 77FC
Patient room (at Bed) - 45FC

Rating	Installed	Design Life	Updated
2 - Poor	1986	30	MAR-10

Typical fluorescent valance lighting in corridors

Event: Replace Interior Florescent Fixtures (10501 sq m)

Concern:

Existing fluorescent fixtures are metric lengths and have T12 lamps and ballasts. Metric T12 lamps are very difficult and expensive to obtain. Metric T8 lamps are even more difficult to obtain. By 2011 T12 lamps and ballasts will no longer be available. Retrofitting existing metric fixtures to T8 will not be a viable option.

Recommendation:

Replace metric T12 fixtures with new T8 fixtures (non-metric)

Consequences of Deferral:

By 2011 T12 lamps and ballasts will no longer be available. Burnt out lamps will not be able to be replaced.

Type	Year	Cost	Priority
Failure Replacement	2010	$920,000	High

Updated: MAR-10

D5020.02.02.02 Interior Florescent Fixtures** - 1991 Lab

Recessed 2x4 (metric T12) 4-lamp and 1x4 2-lamp (metric T12) fixtures w/ k12 lenses are installed throughout the lab area. Fluorescent strip lights (metric T12) with wireguards are installed in the lab basement.

Rating	Installed	Design Life	Updated
2 - Poor	1991	30	MAR-10

Typical fluorescent strip lights in the Lab basement

Event: Replace Interior Florescent Fixtures (250sq m)

Concern:

Existing fluorescent fixtures are metric lengths and have T12 lamps and ballasts. Metric T12 lamps are very difficult and expensive to obtain. Metric T8 lamps are even more difficult to obtain. By 2011 T12 lamps and ballasts will no longer be available. Retrofitting existing metric fixtures to T8 will not be a viable option.

Recommendation:

Replace metric T12 fixtures with new T8 fixtures (non-metric)

Consequences of Deferral:

By 2011 T12 lamps and ballasts will no longer be available. Burnt out lamps will not be able to be replaced.

Type	Year	Cost	Priority
Failure Replacement	2010	$22,000	High

Updated: MAR-10

D5020.02.02.02 Interior Florescent Fixtures** - 1998 Reno.

Fluorescent (imperial) fluorescent valance lighting (w/ T12 lamps and ballasts) are installed in the corridor. Recessed 2x4 4-lamp fixtures are installed in the offices and supplies room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1998	30	MAR-10

Typical fluorescent valance lighting

Event: Replace Interior Florescent Fixtures (185sq m)

Type	Year	Cost	Priority
Lifecycle Replacement	2028	$16,000	Unassigned

Updated: MAR-10

D5020.02.02.02 Interior Florescent Fixtures** - 2008 Reno

Fluorescent fixtures types vary throughout the second floor (2008 Reno) area. All fluorescent fixtures have been replaced with new (imperial) T8 lamps and ballasts. Public corridors have recessed fluorescent valance fixtures w/ deep cell parabolic lenses. Recessed 2x4 fixtures w/k12 lenses are installed in larger rooms. Both recessed and surface mounted 2-Lamp 1x4 fluorescents w/ k12 lenses are installed in smaller rooms. Patient rooms have fluorescent valances with eggcrate lenes above the washroom vanities and above the bed. Lighting levels are good and as follows;

Patient room (at Bed) - 45FC
Corridor - 30FC to 50FC

Rating	Installed	Design Life	Updated
5 - Good	2008	30	MAR-10

Event: Replace Interior Florescent Fixtures (1485sq m)

Type	Year	Cost	Priority
Lifecycle Replacement	2038	$130,000	Unassigned

Updated: MAR-10

D5020.02.02.04 Interior H.P. Sodium Fixture*

H.P.S. Lighting is used in the ambulance garage. There are two (2) H.P.S. surface mounted fixtures w/ remote mounted instant re-strike ballasts. Four (4) wall pack fixtures are located on the walls of the garage.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

HID fixtures in the ambulance garage

D5020.02.03.02 Emergency Lighting Battery Packs**

Emergency lighting throughout the hospital is provided by fluorescent fixtures connected to the backup generator. However there are two (2) emergi-lite battery packs installed. One (1) is located in the main electrical room and one (1) is located in the emergency generator room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

Emergi-Lite battery pack located in the main electrical room.

Event: Replace 2 Emergency Lighting Battery Packs

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$2,500	Unassigned

Updated: MAR-10

D5020.02.03.03 Exit Signs* - 1986 const.

All exit signs are fluorescent PL type. Approximately 90% of the exit signs have been retrofitted with LED lamps. The coverage of signs is adequate and the exit signs are in good working order. The signs are circuited to an emergency circuit.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Typical exit signs in corridor

D5020.02.03.03 Exit Signs* - 2008 reno

The exit signs in the second floor 2008 renovation area are LED style. The exit signs are connected to emergency power. The signs provide good coverage of the exit pathways.

Rating	Installed	Design Life	Updated
5 - Good	2008	30	MAR-10

D5020.02.11 Operating Room Lighting*

10 - recessed 2x4 4-lamp (metric T12) fixtures w/K12 lenses are installed around the perimeter of the O.R. Rooms. Surgical lights in the O.R. Rooms are ALM Angenieux with remote light controls located on the adjacent wall. Lighting levels are very good and as follows;

Surgery O.R. - 170FC at Bed 175FC at the Perimeter

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

Typical O.R. lighting

D5020.03.01.01 Exterior Incandescent Fixtures* - 1986 Const.

Incandescent wall fixtures are mounted at the exterior generator room entrance and the at the access door from the mechanical penthouse to the roof. Incandescent wall sconces are located in the exterior gas storage area.

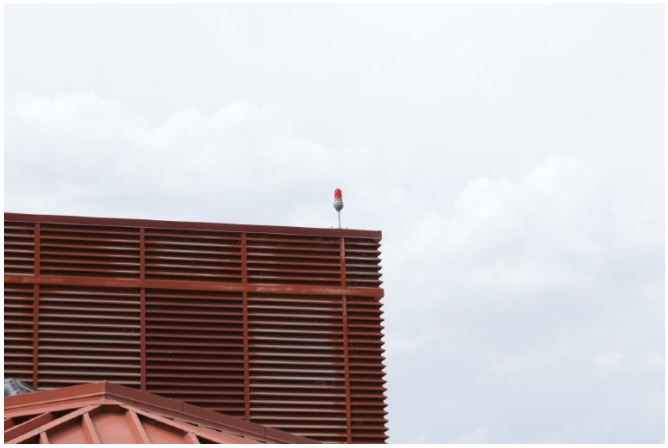
Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Exterior incandescent wall mount fixture.

D5020.03.01.01 Exterior Incandescent Fixtures* - 2008 Reno.

Incandescent aircraft clearance lamps are installed on the top of the building.

Rating	Installed	Design Life	Updated
5 - Good	2008	30	MAR-10



Aircraft clearance fixture on the top of the mechanical penthouse.

D5020.03.01.02 Exterior Florescent Fixtures*

Exterior pendant linear fluorescent lighting is installed at the main entry and rear entry canopies. Fluorescent fixtures are installed under the handrails leading up the rear entrance ramp.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Exterior fluorescent fixtures mounted under handrails

D5020.03.01.04 Exterior H.P. Sodium Fixtures*

Various types of H.P.S. Lighting is installed around the exterior of the building. All of the exterior H.P.S. Lighting is 347V. There are 7 canopy fixtures located at the loading dock, and 3 canopy fixtures outside of the cafeteria. Pendant cylinder downlights are located at the three (3) exterior patio canopies. Wall mounted cylinder downlights are mounted at secondary exits. Seven (7) wall pack fixtures are located at the ambulance parking garage.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

H.P.S. Canopy fixtures located at the loading dock

D5020.03.02 Lighting Accessories: Exterior (Lighting Controls)*

Exterior lighting is controlled via photocell w/ manual override switch. The photocell is mounted on the exterior wall of the penthouse and the manual override switch is located in the basement storage room #B-14.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Exterior photocell on mechanical penthouse wall.

D5030.01 Detection and Fire Alarm** - 1986 Const.

The fire alarm control panel is a multiplex system manufactured by Simplex. The main fire alarm control panel is located in the main electrical room. Doors in the main corridors have magnetic door holders installed. The F.A. Door holder power supply is located adjacent the main FACP panel. There are approximately 20 F.A. Transponders located throughout the hospital. Smoke detectors are located throughout the hospital in corridors, patient rooms, and rooms not covered by sprinklers. Fire alarm tamper and flow devices are installed on the main sprinkler tree. The fire alarm graphic and fire fighters main control handset at the main entry. Fire fighter handsets are located adjacent to stairwells, and the elevators. Recessed fire alarm gongs are located throughout the hospital. A remote monitor terminal is located at the main lobby desk. The computer screen at the remote terminal has completely failed. False alarms are frequent due to faulty smoke detectors.

(fire alarm devices from the 1990 lab and 1998 renovations are relocated from the original construction)

Rating	Installed	Design Life	Updated
2 - Poor	1986	25	MAR-10

Event: Replace the fire alarm system (10751sq m)

Concern:

The fire alarm system is obsolete and parts and servicing are not available. Existing smoke detectors are beyond there recommended life span and cause many false alarms.

Recommendation:

Replace the fire alarm system dating from the 1986 const. With new.

Consequences of Deferral:

False alarms are a frequent nuisance to building personnel. As smoke detectors are fouled the reliability of operation is questionable. In extreme cases, detectors would not be able to detect fires. Since parts and service are not available, any breakdown of the equipment would result in the hospital not being protected until repairs could be made.

Type	Year	Cost	Priority
Failure Replacement	2010	$1,000,000	High

Updated: MAR-10

D5030.01 Detection and Fire Alarm** - 2008 Reno.

The second floor fire alarm system has been replaced with new simplex fire alarm components using the existing infrastructure. The new components are manufactured by simplex and are tied into the existing simplex fire alarm system.

Rating	Installed	Design Life	Updated
5 - Good	2008	25	MAR-10

New fire alarm smoke detector in the elevator lobby.

Event: Replace the F.A. system on second flr.

Type	Year	Cost	Priority
Lifecycle Replacement	2033	$50,000	Unassigned

Updated: MAR-10

D5030.02.02 Intrusion Detection**

A DSC power series intrusion detection system is installed. The main control panel is located in the utility room behind the main desk in the lobby. Motion sensors monitor corridors adjacent the elevators and at major intersections. The system dates within the last 10 years.

Rating	Installed	Design Life	Updated
4 - Acceptable	1998	25	MAR-10

The main intrusion detection control panel

Event: Replace Intrusion Detection system (12421sq m)

Type	Year	Cost	Priority
Lifecycle Replacement	2023	$50,000	Unassigned

Updated: MAR-10

D5030.02.03 Security Access**

A card access system is installed. Card readers are located at the main entry, the rear entry and at the east staff entry. The card access system is no longer used.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

Typical card reader

Event: Replace card access system

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$30,000	Unassigned

Updated: MAR-10

D5030.02.04 Video Surveillance**

The video surveillance system consists of a Digimerge 8 channel DVR unit, an RCA camera control unit, and an LCD screen located at the main lobby desk. There are 6 security cameras located in the hospital , 3 cameras monitor the exterior, and 3 cameras monitor the hospital entrances. The installation dates from the mid 90's. The conduits feeding the front exterior security camera are damaged.

Rating	Installed	Design Life	Updated
3 - Marginal	1995	25	MAR-10

8 Channel DVR surveillance system

Event: Repair conduits at front camera

Concern:
The conduits feeding the camera at the main front entry are damaged

Recommendation:
Repair the conduits and connectors

Consequences of Deferral:
Water and insects can penetrate the conduit system and will damage the wiring and electronics in the camera.

Damaged conduits feeding security camera.

Type	Year	Cost	Priority
Repair	2010	$1,000	Medium

Updated: MAR-10

Event: Replace 8 channel DVR and 6 cameras

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$35,000	Unassigned

Updated: MAR-10

D5030.03 Clock and Program Systems*

The synchronous clock system is manufactured by simplex and is tied into the multiplex fire alarm system. Clocks are round analog 12/24hr. The clocks are located throughout in corridors, staff rooms, nursing stations, Operation Rooms, Building personnel reports that the clock system is in working order. There are plenty of spare parts and clocks in the maintenance shop.

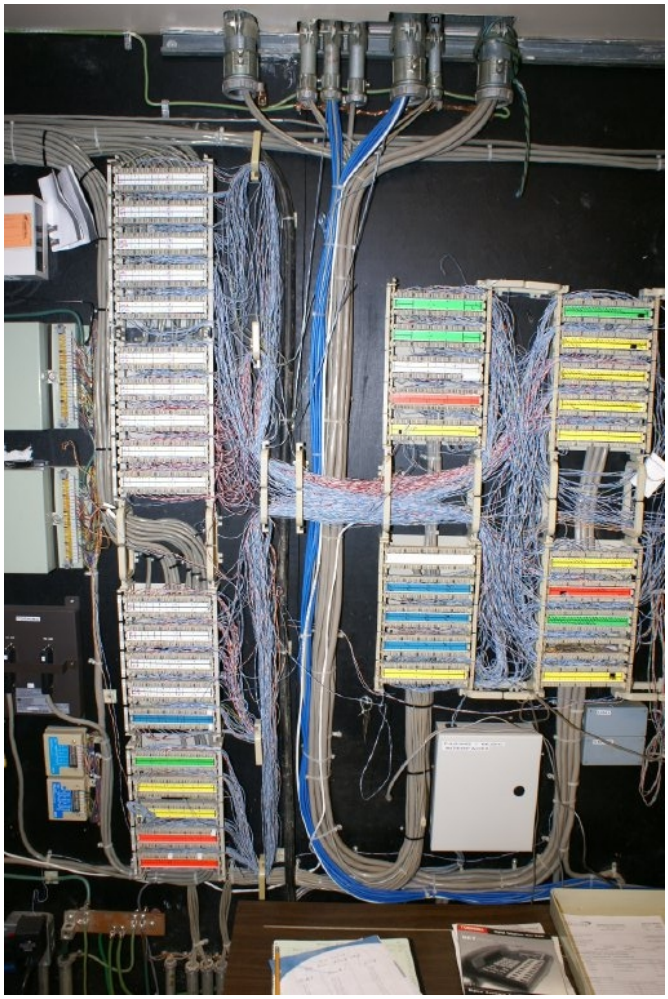
Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

Typical analog clock

D5030.04.01 Telephone Systems*

The main telephone demarcation is located in the main telephone room B-07. The PBX equipment is Toshiba Strata. Telephone tie cables run from the main telephone room to zone boxes located in various locations. From the zone boxes cat.3 cables are run to patient rooms and staff areas. The building personnel have noted that the telephone system is in good working order.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10



The main telephone demarcation

D5030.04.03 Call Systems** - 1986 Const.

A Rauland responder nurse call system is installed throughout the building. The system dates primarily from 1986, however a the second floor system was upgraded in 2008. The main call stations on the main floor are Rauland Responder III. Rauland pull cord stations are located in patient room showers, and in the central Bath facility. Nurse call dome lights are located in main corridors in front of patient rooms. Power supplies are located in the local service/utility rooms located throughout the hospital. Building personnel report that the system is not functioning and parts/servicing are no longer available.

Rating	Installed	Design Life	Updated
1 - Critical	1986	25	MAR-10

Rauland Responder III call station

Event: Failure Replacement of the main floor nurce call system

Concern:

The nurse call system located on the main floor is not functioning. Parts and servicing for the Rauland system are no longer available. The staff use hand bells to patients to ring for assistance.

Recommendation:

Replace the nurse call system with new.

Consequences of Deferral:

Patients are not able to call for assistance. In emergency situations, this situation can present significant risk as nursing staff are not able to be properly notified.

Type	Year	Cost	Priority
Failure Replacement	2010	$450,000	High

Updated: MAR-10

D5030.04.03 Call Systems** - 2008 Reno.

The nurse call system on the second floor has been replaced with new in 2008. The system was completely replaced with a Rauland Responder IV system. The nurse call ststions in each patient room have been replaced with new stations. Nurse call response handsets are located in corridors and at the main nursing desk. Dome lamps located in corridors outside of patient rooms have been replaced with new. The existing nurse call system panels have been utilized to house new power supplies and main system electronics.

Rating	Installed	Design Life	Updated
5 - Good	2008	25	MAR-10

New power supplies installed in existing panels.

Event: Replace Call system (1485m²)

Type	Year	Cost	Priority
Lifecycle Replacement	2033	$150,000	Unassigned

Updated: MAR-10

D5030.04.05 Local Area Network Systems*

The main server is located on the second floor. Data racks are located throughout the hospital in various service rooms. Data cables are run from local outlets to the respective data rack/hub. Data cabling from the racks to outlets are of mixed types and mixed installation as cabling was added over the course of 10 years. The majority of cables are run free-air. Approximatly 50% of the cables are Cat. 5, 45% are Cat. 5e, and 5% are Cat. 6.

Rating	Installed	Design Life	Updated
4 - Acceptable	2001	15	MAR-10

Data rack/patch panel located behind the main desk.

D5030.04.05 Local Area Network Systems* - 1991 Lab

The lab area has a wall mounted data rack installed. Data cables run in wireway and raceways to the outlets located at the work stations. The data cables are mostly cat 5 dating from approximately 1995.

Rating	Installed	Design Life	Updated
4 - Acceptable	1995	15	MAR-10

D5030.04.09 Intercommunication Systems*

TOA intercom handsets are located throughout the building. Handsets are located at maintenance areas, staff rooms, and nursing stations. The main TOA intercom rack is located in the main electrical room. Building personnel report that the system is still operational and there are many spare parts and handsets located in the maintenance room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

Typical TOA intercom handsets

D5030.05 Public Address and Music Systems**

P.A. Speakers are located throughout the hospital in main corridors, public areas, utility rooms, and staff areas. The speakers are connected to the main telephone system, and paging functions are performed through the telephone handsets. The main P.A. system rack is located in the main electrical room. There are two (2) UREI LA-4 compression limiters, two (2) TOA pre-amps amplifiers, and four (4) TOA P-906 amplifiers. Adjacent the P.A. System rack is the Music System Rack. The music system rack is tied to the telephone system. There is one (1) Rauland MPX1100A Audio control panel, two (2) Rauland SRX145 AM/FM tuners, one (1) JVC XL-F215 CD player, and one (1) 4 cassette changer.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

P.A. system pre-amps

Event: Replace P.A. and Music Systems (12421sq m)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$300,000	Unassigned

Updated: MAR-10

D5030.06 Television Systems*

The main CATV demarcation is located in the main electrical room B-11. COAX cables run from the demarcation to various CATV zone boxes located in local electrical rooms throughout the hospital. COAX cables run from the local zone boxes to outlets located in patient rooms, waiting rooms and staff areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

The main CATV demarcation

D5030.07 Other Communications and Security Systems*

There is a staff emergency/panic system installed in the building. Antennas are surface mounted in the corridors. Staff wear wireless pendants. Building personnel note that the system is not operational.

Rating	Installed	Design Life	Updated
2 - Poor	2001	0	MAR-10

Typical emergency pendant system antenna

Event: Replace staff panic alarm system (12421sq m)

Concern:

The staff wireless panic alarm is not operational

Recommendation:

Replace the panic alarm system with new

Consequences of Deferral:

In emergency situations staff must call for immediate assistance. Since the staff alarm system is not working, in emergency situations staff would have to leave the emergency situation in order to call for help.

Type	Year	Cost	Priority
Failure Replacement	2010	$300,000	High

Updated: MAR-10

D5030.07 Other Communications and Security Systems*

A patient wandering system in installed in the long term care area. The system is manufactured by CSI Electronics. Magnetic locks are installed on doors leading away from the long term care area. Patients wear wristbands that activate the lock system when they approach the doors. The locks can be disengaged by keypads located adjacent the doors. The magnetic locks are also tied into the F.A. System to disengage on alarm condition. The system is not functioning properly and parts are no longer available.

Rating	Installed	Design Life	Updated
2 - Poor	2001	0	MAR-10

Patient wandering system control adjacent door to corridor.

Event: Replace the patient wandering system

Concern:

The patient wandering system is not operational, and parts are no longer available.

Recommendation:

Replace the patient wandering system with new.

Consequences of Deferral:

Building personnel have noted that patients from long term care are exiting the LTC area into the hospital. This situation is presents considerable risk to staff and residents of the LTC area.

Type	Year	Cost	Priority
Failure Replacement	2010	$30,000	High

Updated: MAR-10

D5030.07 Other Communications and Security Systems*

A sentrol panic alarm system is installed installed in the basement. Small panic pull stations are located throughout the basement. The system is not functional and is now abandoned.

Rating	Installed	Design Life	Updated
2 - Poor	2001	0	MAR-10

Typical sentrol panic station

Event: Remove the Panic Alarm system

Concern:

The panic alarm system in the basement is not operational and is no longer needed as other technologies have replaced the system

Recommendation:

Remove the obsolete panic alarm system

Consequences of Deferral:

The panic alarm system serves no purpose. Leaving the system installed can present operational issues as the abandoned system be confusing to personnel as they may be under false impressions that the system is active. In extreme cases this can present hazard to personnel or patients.

Type	Year	Cost	Priority
Preventative Maintenance	2010	$10,000	Low

Updated: MAR-10

D5090.01 Uninterruptible Power Supply Systems**

The UPS system is a Sola 6000 6KVA 120/208V 3ph 4w system. The UPS is located in the basement locker room B-09 and serves the UPS panel located in the main floor Laboratory. Building personnel have indicated that the batteries need to be replaced in the next couple of years.

Rating	Installed	Design Life	Updated
4 - Acceptable	1991	30	MAR-10

Sola 6000 UPS

Event: Replace 6KVA UPS System

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$45,000	Unassigned

Updated: MAR-10

D5090.02 Packaged Engine Generator Systems (Emergency Power System)**

A diesel 625KVA 347/600V 3ph 4w Waterous/Leroy Sommer generator is located in the basement generator room. A diesel tank is located on the exterior of the room. A 120V Vulcan electric battery charger is located adjacent the generator. The Automatic transfer switch # 1 and 2 is manufactured by Asco. The transfer switches are located in the main electrical room. Automatic transfer switch #2 was originally designed for Peak shaving to the manual transfer switch located in the CSR (room B-19) however the transfer switch is manually set to bypass the peak shave system.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	35	MAR-10

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Event: Replace 625KVA Generator and transfer switches

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$320,000	Unassigned

Updated: MAR-10

S6 EQUIPMENT, FURNISHINGS AND SPECIAL CONSTRUCTION

E1010.06 Commercial Laundry and Dry Cleaning Equipment*

Commercial washers and dryers utilized in laundry.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	0	MAR-10

Event: Replace two commercial dryers

Concern:
Dryers are continually breaking down and parts are not readily available.

Recommendation:
Replace two dryers.

Type	Year	Cost	Priority
Failure Replacement	2010	$45,000	High

Updated: MAR-10

E1020.07 Laboratory Equipment*

Full range of health care laboratory equipment utilized.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

E1020.08 Medical Equipment*

Full range of health care diagnostic and medical equipment utilized.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

E1090.02 Solid Waste Handling Equipment

Large waste bins used for waste handling.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-10

E1090.03 Food Service Equipment*

A full commercial kitchen is utilized.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	25	MAR-10

Event: Replace convection oven, 2 stoves

Concern:
Commercial kitchen cooking equipment is original, stoves and convection oven are constantly being repaired and some parts are no longer available.

Recommendation:
Replace defective items.

Type	Year	Cost	Priority
Failure Replacement	2010	$46,000	High

Updated: MAR-10

E1090.04 Residential Equipment*

Residential refrigerators(15) used by staff and at patient snack stations.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	10	MAR-10

E1090.07 Athletic, Recreational, and Therapeutic Equipment*

Physio therapeutic equipment utilized.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	15	MAR-10

E2010.02 Fixed Casework**

Fixed case work consisting of cabinets in laboratories, reception desks, patient room and bathroom vanities.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	35	MAR-10

Event: Replace ~1950 lm Fixed Casework

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$198,600	Unassigned

Updated: MAR-10

E2010.03.01 Blinds**

Blinds used for patient windows and interior windows at offices.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-10

Event: Replace ~500m² Blinds

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$62,000	Unassigned

Updated: MAR-10

F1040.05 Liquid and Gas*: Storage Tanks*

Oxygen and other gases stored in special tanks and rooms

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-10

F2020.01 Asbestos*

None observed or reported by staff.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

F2020.02 PCBs*

None observed or reported by staff

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

F2020.04 Mould*

None observed or reported by staff

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

F2020.06 Radioactive Compounds*

Included with diagnostic equipment and contained in acceptable secure areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

F2020.07 Chloroflorocarbons (CFC Refrigerants)*

There is R-22 in the Mr. Slim air conditioning units. The chiller has R-11 refrigerant.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

F2020.08 Biohazardous Materials*

Hazardous material contained in a special area designed for that purpose.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

S8 FUNCTIONAL ASSESSMENT

K2030 Program Layout

As per on site personnel hospital is deficient for parking areas, Also parking lot has excessive slope

Rating	Installed	Design Life	Updated
3 - Marginal	0	0	MAR-10

Event: Provide ~4200m² of parking area

Concern:
As per on site personnel insufficient handicapped, staff and public parking.
Recommendation:
Incorporate asphalt surfaced parking for an additional 160 vehicles complete will pavement markings.

Type	Year	Cost	Priority
Program Functional Upgrade	2010	$500,000	Medium

Updated: MAR-10

Event: Regrade and asphalt surfacing (~4300m²) of parking lot.

Concern:
Existing parking lot has excessive grade.
Recommendation:
Resurface / and grade parking lot; provide good drainage.

Type	Year	Cost	Priority
Program Functional Upgrade	2010	$600,000	High

Updated: MAR-10

Event: Replace ~120m² of concrete retaining wall

Concern:
Retaining wall is deteriorated and requires replacing.
Recommendation:
Replace concrete retaining wall.

Type	Year	Cost	Priority
Program Functional Upgrade	2010	$132,500	High

Updated: MAR-10

K4010.01 Barrier Free Route: Parking to Entrance*

Drop off area provided for disabled persons.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

K4010.02 Barrier Free Entrances*

Ground level entries provided for building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

K4010.03 Barrier Free Interior Circulation*

Corridors and entries are spacious. Elevators are installed.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10

K4010.04 Barrier Free Washrooms*

Washrooms equipped with grab bars and have adequate entries.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-10