RECAPP Facility Evaluation Report

Alberta Health Services-South

Medicine Hat Regional Hospital

B1126A

Medicine Hat

Report run on: March 25, 2014 3:47 PM

Facility Details

Building Name: Medicine Hat Regional Hosp
Address: 666 - 5 Street S. W.
Location: Medicine Hat

Building Id: B1126A
Gross Area (sq. m): 53,659.00
Replacement Cost: $310,074,396
Construction Year: 0

Evaluation Details

Evaluation Company: DC Stewart Architect Limited
Evaluation Date: September 26 2013
Evaluator Name: Don Stewart

Total Maintenance Events Next 5 years: **$35,778,620**
5 year Facility Condition Index (FCI): **11.54%**

General Summary:

The Medicine Hat Regional Hospital was originally developed in 1958 as a full service regional hospital. Major additions were completed in 1983, 1985, and 1986. Major renovation and upgrading projects were undertaken in 1992 and 1999. The hospital is a concrete and brick structure, five stories high plus basement, giving a total area of 51,460 square metres. There are six operating rooms and a total of 236 patient beds. The facility is self contained, with a full commercial kitchen, dining area, therapeutic and exercise facilities, diagnostic services, and large staff support areas. The building is a completely barrier free design.

The original Power Plant is currently being renovated and expanded, with several systems (both electrical and mechanical) being replaced and relocated. The old Auxiliary Hospital has been demolished to make way for expansion of the existing hospital. The additions and renovations are well under way, with completion of the Power Plant scheduled for March 2014, and completion of the main hospital expansion anticipated in 2016. The existing hospital is being serviced partly with original equipment and partly with new equipment that has been added, and put into service, during the current renovation. This is a Major Capital Expansion Project, which will add some 22,000 square metres to the facility.

Structural Summary:

The foundations for this building are concrete spread footings, concrete pads, and grade beams. The structure consists of a reinforced concrete frame above and below grade. Floors are reinforced concrete slab and beam construction. The roof structure is reinforced concrete and the mechanical penthouse frame and roof is welded and bolted structural steel, with ribbed steel decking. It has been suggested that the concrete sun-screens on the south facade require extensive repair and upgrading. Otherwise, there has been no major upgrade work to the structure, and there is no evidence of cracking or settlement. Overall, the structure of this building is in acceptable condition.

Envelope Summary:

The exterior of this building is substantially brick masonry, with accent bands of a lighter brick and panels of precast concrete. The mechanical penthouses, as well as the upper floor of the Acute Care Wing, are clad with a prefinished metal siding. The majority of the roof is a two ply SBS membrane, although the Acute Care Wing has an inverted / protected membrane, with a rock ballast. In some locations the ballast is provided with precast panels. Windows are sealed double glazing in anodized aluminum frames, as is a major skylight over the central atrium space. Entrance doors are aluminum with safety glazing. Service doors are flush steel and overhead doors are insulated steel panels.

It is suggested that upgrading work is required to some of the windows, the aluminum framed curtain wall, the entrance canopy, caulking, and the overhead doors. Notwithstanding these requirements, however, overall the envelope of this facility is in acceptable condition.

Interior Summary:

Interior division in this facility is a combination of concrete block and gypsum board, both of which are painted. The majority of this building has sheet vinyl flooring with welded seams, although there is also some vinyl floor tile and carpet. Ceilings are mostly suspended t-bar with acoustic tiles, and there are also some gypsum board ceilings. Doors are either solid core wood or flush steel, in pressed steel frames. There is a considerable amount of plywood millwork throughout, finished with plastic laminate. The main elevators are serviceable, although those in the RSS building require upgrading.

Upgrading work required in the short term includes wall and door protection, stair finishes, replacement of the dumbwaiters and the track vehicle system. There are some building code concerns that should be addressed. Overall, however, the interiors of this facility are in acceptable condition.

Mechanical Summary:

The Facility primary heating and cooling plant are housed in the Energy Centre which is undergoing upgrade in 2013. These systems include 3 steam boilers for heating and an absorption chiller and cooling tower to feed the hospitals cooling systems.

Engineered Air brand Air Handling units are located in mechanical rooms within each wing.

The facility is fully sprinklered with fire pumps also located within the Energy Center and undergoing replacement in 2013.

It is recommended to upgrade the following items within the next 5 years:

- Water Softening Systems
- Domestic Hot Water heaters
- Cast Iron Piping
- Fuel Oil Storage Tank
- Steam Heating Coil within the Laundry AHU

Overall the Mechanical system would be in acceptable condition.

Electrical Summary:

The facility consists of a 13.8 main service fed from the energy center. The distribution equipment was installed in two distinct time periods 1983 and 1986. The main service in the acute care building is fed with two separate 13.8 KV feeders to provide the required redundancy while the RSS building is only fed with one 13.8KV feeder. The distribution panels and branch circuit panels consists of Square D and Westinghouse panels through out. The emergency power is fed from the emergency generators located in the energy center. The lighting throughout the facility is is approximately 90% T8 fluorescents with the remaining 10% being the original T12 fixtures. The fire alarm system consists of the original Simplex non addressable control panel. The nurse call system consists of the original Dukane system. The security access system consists of a Siemens system, and the CCTV cameras are a PELCO system installed through out. The motors and fans in this facility are controlled with either MCC's or VFD's. Each of the eight operating rooms have a Skytron two head operating room fixture. The building has several smaller UPS units installed throughout the facility in lieu of one larger centralized UPS.

It is recommended to upgrade the following items in the next 5 years:

-install one larger Centralized UPS in lieu of several small UPS units.
-upgrade the fire alarm system to a Simplex Fully Addressable panel.
-upgrade the patient television system to a fully digital system.
-upgrade the paging system to handle the future expansion.
-install a redundant 13.8KV feeder to the RSS switch gear.
-complete the remaining T12 fixtures upgrades to T8 lamps.
-replace the high pressure sodium fixtures in the main atrium with new LED fixtures.

Overall the electrical system would be in acceptable 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*

Standard concrete footings, pads and reinforced concrete grade beams. Similar construction methodology for all three ages of development: 1 - 1958 original; 2 - 1983, 1985, 1986 additions; 3 - 1992, 1999 additions.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

A1030 Slab on Grade*

Reinforced concrete slabs on grade throughout the lower levels.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

A2020 Basement Walls (& Crawl Space)*

Reinforced concrete basement walls and columns are provided throughout the lower levels.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B1010.01 Floor Structural Frame (Building Frame)*

Reinforced concrete columns and beams, some steel structure in the West Wing Level 1.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

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

There are some reinforced concrete interior walls, although most of these were originally exterior walls (before the building was expanded).

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B1010.03 Floor Decks, Slabs, and Toppings*

Most floor structures are a suspended reinforced concrete slab. There are some minor areas of floor that are concrete topping on a steel structure.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B1010.07 Exterior Stairs*

There are cast in place concrete exterior stairs located at the west wing adjacent the parking structure, as well as two concrete stairs at the loading docks; both with welded steel handrails, painted.

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	0	MAR-14

B1010.09 Floor Construction Fireproofing*

The reinforced concrete floor structure provides the required fire separations between floors.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B1010.10 Floor Construction Firestopping*

Where visible, penetrations of fire separations appear to be sealed with appropriate fire rated materials.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B1010.11 Other Floor Construction*

Wall screens at the south wall of the RRS Wing (which are projections of the reinforced concrete floor slabs) provide sun shading to the exterior windows.

Rating	Installed	Design Life	Updated
3 - Marginal	1957	0	MAR-14

Event: Repair damaged concrete sun shades (200 m2)

Concern:
Floor slab projections at the south wall of the RRS Wing are cracked and spalling; water penetration is evident on the interior.

Recommendation:
Repair top of slabs, apply roofing membrane and wall flashing. Clean underside of slabs, remove spalling and patch any damage.

Consequences of Deferral:
Potential for water penetration and danger of portions of slab falling off the building.

Concrete sun shades on south elevation.

Type	Year	Cost	Priority
Preventative Maintenance	2015	$100,000	High

Updated: MAR-14

B1020.01 Roof Structural Frame*

Lower floor roof construction is reinforced concrete slabs and beams. Upper floors and mechanical penthouse roofs are welded structural steel, open web steel joists, with ribbed steel decking. The emergency wing roof is framed with open web steel joists and ribbed steel decking.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B1020.03 Roof Decks, Slabs, and Sheathing*

Roof decks are either reinforced concrete slabs, or concrete fill on ribbed steel decking. A portion of the top floor roof at the service area is decked with solid wood planking.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B1020.04 Canopies*

A covered structure is provided at the main entry, of welded steel frame (see B3010.11 Roof Covering Other for canopy repair). Small steel framed canopies are provided at the emergency entrance building. Steel framed and reinforced concrete canopies are provided at the truck dock areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

S2 ENVELOPE

B2010.01.01 Precast Concrete: Exterior Wall Skin*

Precast concrete panels are installed as accent bands around the loading dock area, and as the exterior wall base in some areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B2010.01.02.01 Brick Masonry: Ext. Wall Skin*

Modular clay brick masonry is the main exterior finish material. Some minor efflorescing, especially adjacent the therapy pool enclosure. Most of the brick masonry veneer is a dark red brick; some light buff brick has been installed on the north wing as an accent panel.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B2010.01.06.03 Metal Siding**

Dark prefinished, ribbed, vertical panels have been installed around the roof equipment rooms, and at the Emergency Entrance. A modern smooth, light finish, vertical metal paneling is provided as an accent band around the upper floor of the south wing.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	40	MAR-14

Event: Replace 950 m2 prefinished metal siding

Type	Year	Cost	Priority
Lifecycle Replacement	2025	$345,000	Unassigned

Updated: MAR-14

B2010.01.09 Expansion Control: Ext. Wall*

Expansion control joints are provided at regular intervals in the brick masonry facade, filled with sealant.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

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

Caulking is provided around windows, door frames, at dissimilar materials and in control joints.

Rating	Installed	Design Life	Updated
3 - Marginal	1992	20	MAR-14

Event: Repair 2000 lm joint caulking

Concern:
The caulking joints on concrete slabs and brick work are failing. Possible building envelope issues may occur. The south elevation is showing a need for repair.

Recommendation:
Clean and reseal the expansion joints.

Type	Year	Cost	Priority
Preventative Maintenance	2013	$65,000	High

Updated: MAR-14

Event: Replace 4500 lm joint caulking

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$150,000	Unassigned

Updated: MAR-14

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

Exterior walls throughout the building complex are constructed with concrete block masonry, and clay brick veneer.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B2010.02.04 Load-Bearing-Metal Studs: Ext. Wall*

Some of the exterior walls, on the upper levels of the Acute Care Wing, are in-filled with metal studs, sheathing and exterior brick masonry.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

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

Drawings indicate that an interior vapour barrier is present but there is no exterior air barrier.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B2010.05 Parapets*

Parapets are constructed to match adjacent wall, and are capped with prefinished metal flashings.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B2010.06 Exterior Louvers, Grilles, and Screens*

Exterior louvres and grilles are constructed of prefinished metal; and of anodized aluminum.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

B2010.09 Exterior Soffits*

Soffits at the overhang at the Acute Care Wing are prefinished linear metal, suspended from steel frames.

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	0	MAR-14

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

The entire building complex is provided with anodized aluminum framed windows, with sealed double glazing. These are all individual fixed window units, with no operable units provided.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	40	MAR-14

Event: RSS Building glazing replacement (1100 m2)

Concern:

The Rehab Support Services Building windows are of low quality which are ineffective for heating and cooling on the interior of the building. Low-E tinted glazing should be installed. The sills on the north elevation of the north wings should be replaced to avoid water infiltration and the sills remaining should be removed and replaced.

Recommendation:

Upgrade and replace glazing, sills, and flashings in the Rehab Support Services building.

Type	Year	Cost	Priority
Failure Replacement	2013	$2,547,839	Medium

Updated: MAR-14

Event: Replace 1006 aluminum framed windows (1800 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2025	$2,200,000	Unassigned

Updated: MAR-14

B2020.03 Glazed Curtain Wall**

The centre of the Main Floor is a large atrium, covered with an aluminum framed glazing system. A portion of this is vertical glazing and the rest is sloped glazing.

Rating	Installed	Design Life	Updated
3 - Marginal	1992	40	MAR-14

Event: Repair Atrium Glazing Leaks & Water Infiltration Damage (300 m2)

Concern:

The Atrium glazing has developed significant leaking causing water infiltration to the interior.

Recommendation:

Repair the Atrium glazing and make necessary indoor repairs. Exterior water proofing is required with interior repairs including scaffolding, drywall removal, possible mold remediation and rebuild is required.

Type	Year	Cost	Priority
Repair	2013	$492,095	High

Updated: MAR-14

Event: Replace 550 m2 atrium curtain wall

Type	Year	Cost	Priority
Lifecycle Replacement	2032	$736,000	Unassigned

Updated: MAR-14

B2020.03.02 Glazed Aluminum Curtain Wall

Delete Technical - The work has been completed. These windows are now a part of Technical B2020.03.

Rating	Installed	Design Life	Updated
N/A	2013	0	MAR-14

Event: Replace Round Windows

Concern:
The current day rooms have atrium type windows. The glazing has condensation problems, with leaking seals.
Recommendation:
Install new round windows

Type	Year	Cost	Priority
Failure Replacement	2013	$299,426	High

Updated: MAR-14

B2030.01.01 Aluminum-Framed Storefronts: Doors**

Anodized aluminum frames, safety glazed, operating hardware; at main floor entrance.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace 2 aluminum framed storefront entrances

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$40,000	Unassigned

Updated: MAR-14

B2030.01.06 Automatic Entrance Doors**

Automatic operated, sliding glazed aluminum doors are provided at the main entrance.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace 4 automatic sliding doors

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$60,000	Unassigned

Updated: MAR-14

B2030.02 Exterior Utility Doors**

Exterior utility doors are flush steel in pressed steel frames, paint finish. Some are provided with small panels of single glazing.

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	40	MAR-14

Event: Replace 42 exterior flush steel doors

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$40,000	Unassigned

Updated: MAR-14

B2030.03 Large Exterior Special Doors (Overhead)*

Painted metal overhead doors, with motor operators, are provided in the Loading Dock Area and in the Emergency Ambulance Area.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	0	MAR-14

Event: Ambulance Bay & Patient Drive-through Door & Motor replacements (13 doors)

Concern:

The current patient drive-through drop off area adjacent to the Emergency Department has 4 overhead doors complete with power openers. The doors have a high rate of use. The 9 EMS ambulance doors and openers are of similar construction. The doors and openers are in constant need of repair.

Recommendation:

Replace the ambulance bays and patient drive-through garage doors and openers.

Type	Year	Cost	Priority
Failure Replacement	2013	$210,000	Medium

Updated: MAR-14

Event: Replace 4 loading dock doors and operators

Concern:

Parts for the 4 loading dock doors are no longer available. The doors are original, approximately 25 years old. The loading dock area is a high use area.

Recommendation:

Replace 4 loading dock doors and operators

Type	Year	Cost	Priority
Failure Replacement	2013	$66,000	Medium

Updated: MAR-14

B3010.01 Deck Vapour Retarder and Insulation*

The drawings indicate that a deck vapour barrier is provided in most instances, but the type is not identified.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

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

The Laundry and Stores roof is existing from the 1982 construction, and is a four ply built up asphalt and gravel roof system.

Rating	Installed	Design Life	Updated
3 - Marginal	1982	25	MAR-14

Event: Replace 1800 m2 roofing with an SBS Membrane

Concern:
The Laundry and Stores roof is existing from the 1982 construction. There have been minors leaks to date with large amounts of water pooling.

Recommendation:
Replace the Laundry and Stores roofing with SBS sheeting.

Type	Year	Cost	Priority
Failure Replacement	2013	$377,000	High

Updated: MAR-14

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

The majority of roofing installed at this hospital is a torch applied, two ply SBS membrane.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	25	MAR-14

Event: Replace 7200 m2 SBS roofing

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$1,500,000	Unassigned

Updated: MAR-14

B3010.04.08 Membrane Roofing (Inverted/Protected)**

The roof membrane installed on the Acute Care Wing and a portion of the North Wing is an inverted, protected membrane with a rock ballast. In some places, precast concrete pavers are used as ballast.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	30	MAR-14

Event: Replace 4500 m2 inverted membrane roofing

Type	Year	Cost	Priority
Lifecycle Replacement	2024	$1,060,000	Unassigned

Updated: MAR-14

B3010.11 Roof Covering Other* - Entrance Canopy

A structural steel canopy is provided at the main entrance, with a curved polycarbonate glazing cover.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	0	MAR-14

Event: Main Entrance Canopy Cover Replacement

Concern:
The front entry canopy for patient pick up and drop off is approximately 80 feet long. The canopy has continuous leaking problems, needing constant maintenance repairs. At times ice build up becomes a problem, patient safety is an issue in the winter season.

Recommendation:
Replace the main entrance canopy.

Type	Year	Cost	Priority
Failure Replacement	2013	$664,180	High

Updated: MAR-14

B3020.01 Skylights**

A linear aluminum framed skylight has been provided above the main atrium area, sealed double glazing, in sloped aluminum frames.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	25	MAR-14

Event: Replace 200 m2 aluminum framed skylights

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$530,000	Unassigned

Updated: MAR-14

S3 INTERIOR

C1010.01 Interior Fixed Partitions*

Most interior walls are concrete block masonry, some partitions are metal stud and gypsum board.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

C1010.03 Interior Operable Folding Panel Partitions** - Accordion

There are folding fabric panel partitions in the cafeteria and in some of the upper floor wards. These fold into a pocket recess, and are suspended from an overhead track.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	30	MAR-14

Event: Replace 8 folding partitions (120 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$160,000	Unassigned

Updated: MAR-14

C1010.03 Interior Operable Folding Panel Partitions** - Folding Panel

There are folding aluminum framed, vinyl covered panel partitions in the third floor classrooms and conference rooms. These fold flat against a wall, and are suspended from an overhead track.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	30	MAR-14

Event: Replace 4 folding panel partitions (60 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2029	$80,000	Unassigned

Updated: MAR-14

C1010.04 Interior Balustrades and Screens, Interior Railings*

Welded steel railings are provided around the upper levels of the atrium, paint finish.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

C1010.05 Interior Windows*

Most interior windows are single glazed in a pressed steel frame, paint finish. Some windows in newer renovated areas are wood framed. There are some specialty windows in the shape of oval, round or oblong openings, framed in wood with a natural finish.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

C1010.06 Interior Glazed Partitions and Storefronts*

Interior glazed storefronts have been provided in the public areas of the lower and main floors. These are framed in painted pressed steel frames. Some at the main floor are framed in anodized aluminum. All are single glazed.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

C1010.07 Interior Partition Firestopping*

Where visible, penetrations of fire rated partitions appear to be fire caulked.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

C1020.01 Interior Swinging Doors (& Hardware)*

Most interior doors are solid core wood with veneer faces and a natural finish; set in pressed steel frames with a paint finish. Standard institutional quality hardware is provided everywhere.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

C1020.01 Interior Swinging Doors (& Hardware)* - Surgical Suites

Solid core wood doors in pressed steel frames are provided into the Surgical Suites. Some of the doors are provided with automatic motor operators.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	0	MAR-14

Event: Install 16 flush steel doors in pressed steel frames

Concern:
The existing wood doors (16) in the Surgical Suites area are delaminating.

Recommendation:
Replace wood doors with flush steel doors, in pressed steel frames.

Type	Year	Cost	Priority
Failure Replacement	2013	$35,000	Medium

Updated: MAR-14

Event: Replace 9 Surgical Suite door operators

Concern:
The automatic door operators (9) into the Surgical Suites regularly break down.

Recommendation:
Replace the motorized door operators on 3 OR Core Doors and 6 OR Hallway Doors.

Type	Year	Cost	Priority
Failure Replacement	2013	$141,000	Medium

Updated: MAR-14

C1020.03 Interior Fire Doors*

Interior fire doors are flush steel in pressed steel frames, painted, some with wired glazing. All are equipped with heavy duty institutional quality hardware. Doors in high use corridors are equipped with magnetic hold-opens, connected to the fire alarm system.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

C1020.04 Interior Sliding and Folding Doors*

Aluminum framed, single glazed, horizontal sliding doors into Intensive Care Rooms and observation rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	0	MAR-14

C1020.07 Other Interior Doors*

Vertical sliding fire rated shutters are provided in a number of fire separations, especially at the lower and main floor service areas. These shutters are paint finish in painted frames, or stainless steel in steel frames. Some non-rated shutters are provided in anodized aluminum.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	0	MAR-14

C1030.01 Visual Display Boards**

Wall mounted whiteboards and fabric covered tack boards are provided throughout the facility in offices, preparation areas, work rooms, lounges, and service areas. Some magnetic display boards are provided as well.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	20	MAR-14

Event: Replace 150 visual display boards

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$120,000	Unassigned

Updated: MAR-14

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

Fabricated and prefinished flush steel partitions are provided throughout the building in washrooms, floor mounted and overhead braced.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace 22 prefabricated toilet compartments

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$30,000	Unassigned

Updated: MAR-14

C1030.05 Wall and Corner Guards*

Premanufactured plastic corner guards and combination wall guards / handrails are installed throughout the public areas and in the wards. Some stainless steel guards are installed in heavy use service areas, such as the kitchen and the laundry. There is, however, a lack of wall protection in many service areas.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	0	MAR-14

Event: Install Stainless Steel Kickplates, Wall Rails and Corners

Concern:
Concrete block and gypsum board walls are being damaged by hospital carts.

Recommendation:
Install stainless steel kickplates, wall rails and corner guards.

Type	Year	Cost	Priority
Preventative Maintenance	2015	$30,000	Unassigned

Updated: MAR-14

C1030.06 Handrails*

Premanufactured plastic handrails are installed in corridors throughout the public areas and in the wards.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

C1030.08 Interior Identifying Devices*

Original signage is an engraved plastic lamacoid type. Many other types of signs have been added. Overall, the signage program seems appropriate for such a complex building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

C1030.10 Lockers**

There is a very large female staff locker room (750 lockers) on level one, as well as a smaller male locker room (150 lockers). As well, there are a number of staff lockers scattered throughout the wards and operating floor. All these are full height lockers, prefinished steel, mounted on a fixed base.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	30	MAR-14

Event: Replace 1000 prefinished steel lockers

Type	Year	Cost	Priority
Lifecycle Replacement	2029	$560,000	Unassigned

Updated: MAR-14

C1030.12 Storage Shelving*

Excluding the specialized shelving in the Kitchen and the Laundry Room, there is a variety of wood and steel shelving systems throughout the building, paint finish.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	0	MAR-14

C1030.14 Toilet, Bath, and Laundry Accessories*

The building is provided with a sufficient quantity of standard institutional quality toilet fixtures and fittings, stainless steel finish.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

C2010 Stair Construction*

Most stairs are cast in place, reinforced concrete. Some service area stairs are welded steel, and some access stairs are open grate welded steel. The open public stair in the Atrium is a decorative steel construction, with concrete filled steel pan treads. All concrete and steel stairs are a paint finish.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	0	MAR-14

Event: Repair 2 stairs in West Wing

Concern:
Continued deterioration will lead to structural damage and a tripping or slipping hazard

Recommendation:
Replace bullnosing as required and repair cement cracks

Type	Year	Cost	Priority
Preventative Maintenance	2013	$30,000	Low

Updated: MAR-14

C2020.01 Tile Stair Finishes*

The open public stair, in the central Atrium Space, is finished with quarry tile treads.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

C2020.05 Resilient Stair Finishes**

The majority of stairs, if not painted, are finished with full width vinyl treads and risers. This is mostly for public access stairs.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	20	MAR-14

Event: Replace resilient stair treads and risers (350 treads)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$20,000	Unassigned

Updated: MAR-14

C2020.08 Stair Railings and Balustrades*

All stair handrails, balustrades and guards are welded steel pipe construction, with welded steel pickets, all with a paint finish.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

C3010.01 Concrete Wall Finishes (Unpainted)*

Some basement walls in the truck dock area have been left unfinished. Most of these have eventually been painted.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	MAR-14

C3010.06 Tile Wall Finishes**

Ceramic tile walls, both half-height and full height, are installed in all shower areas, tub rooms, diagnostic areas, therapeutic areas, kitchens, food storage areas, and elsewhere as needed to meet sanitary requirements.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	40	MAR-14

Event: Replace 9,000 m2 ceramic wall tile

Type	Year	Cost	Priority
Lifecycle Replacement	2032	$2,600,000	Unassigned

Updated: MAR-14

C3010.11 Interior Wall Painting*

Gypsum board walls and exposed concrete block walls, are painted.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

C3010.12 Wall Coverings*

A variety of offices, lounges, conference rooms and theatres have a vinyl wallcovering applied.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

C3010.14 Other Wall Finishes* - Operating Rooms

Operating theatres, prep areas, scrub rooms and the sterile core walls are mostly finished with fibreglas reinforced plastic wall panels, with welded joints, full height.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

C3020.01.02 Painted Concrete Floor Finishes*

Concrete floors in the basement level, and in other service and mechanical areas, have a paint finish.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

C3020.02 Tile Floor Finishes** - Ceramic Tile

Ceramic tile floors are installed in all shower areas, tub rooms, diagnostic areas, therapeutic areas, kitchens, food storage areas, and elsewhere as needed to meet sanitary requirements.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	50	MAR-14

Event: Replace 3,000 m2 ceramic floor tile

Type	Year	Cost	Priority
Lifecycle Replacement	2042	$605,000	Unassigned

Updated: MAR-14

C3020.02 Tile Floor Finishes** - Quarry Tile

The main entrance lobby and the entry vestibule, are finished with quarry tile flooring.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	50	MAR-14

Event: Replace 140 m2 quarry tile flooring

Type	Year	Cost	Priority
Lifecycle Replacement	2042	$45,000	Unassigned

Updated: MAR-14

C3020.07 Resilient Flooring**

Resilient sheet flooring is installed throughout the hospital, most with welded seams. There is also a minor amount original vinyl composition tile in service areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	20	MAR-14

Event: Replace 24,500 m2 sheet vinyl flooring

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$2,250,000	Unassigned

Updated: MAR-14

C3020.08 Carpet Flooring**

Level loop carpet is provided in offices, the administration area, lounges, Chapel, and other specific rooms. Some carpet tile flooring has also been provided in the administration area.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	15	MAR-14

Event: Replace 2,550 m2 carpeting

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$215,000	Unassigned

Updated: MAR-14

C3030.04 Gypsum Board Ceiling Finishes (Unpainted)*

Gypsum board ceilings are provided in washrooms, workrooms, storage, service rooms and elevator lobbies. Gypsum board bulkheads are provided around the central atrium, and at entrance areas to each ward.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

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

The majority of this building has a suspended t-bar ceiling with lay-in acoustic tiles.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	25	MAR-14

Event: Replace 26,000 m2 acoustic tile ceiling

Type	Year	Cost	Priority
Lifecycle Replacement	2024	$1,400,000	Unassigned

Updated: MAR-14

C3030.07 Interior Ceiling Painting*

Interior gypsum board and exposed concrete ceilings are painted.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

D1010.01.01 Electric Traction Passenger Elevators**

Total of 6 passenger elevators (no 1 to 6) from basement level to sixth floor; 7 stops, capacity 1820 kg each. Note that 3 elevators in the RSS Building are described in a separate element.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	30	MAR-14

Event: Refurbish 6 electric traction passenger elevators

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$970,000	Unassigned

Updated: MAR-14

D1010.01.02 Hydraulic Passenger Elevators**

Hydraulic passenger elevators numbered 11, 12, and 13 are located in the RSS Building. Elevators 7,8,9,and 10 were located in the Auxiliary Building, and were removed when that building was demolished.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

Event: Refurbish 3 hydraulic passenger elevators

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$301,000	Unassigned

Updated: MAR-14

Event: Three RSS Building Elevators require major upgrades

Concern:

Consultant report-Vinspec Ltd. has outlined significant safety concerns for elevators and the need for these upgrades.

Recommendation:

RSS Building Elevator require upgrades to address safety requirements and maintain functioning of elevators. Elevators 11,12,13 are located in this wing.

Type	Year	Cost	Priority
Code Upgrade	2013	$301,000	Unassigned

Updated: MAR-14

D1090 Other Conveying Systems* - Dumbwaiters

There are three dumbwaiters provided; two from the lab area and one from the laundry area, both up to the Surgical Suites.

Rating	Installed	Design Life	Updated
3 - Marginal	1984	0	MAR-14

Event: Replace 3 dumbwaiters

Concern:
The dumbwaiter in the Lab and the 2 in OR are from original construction in 1984. No upgrades or modernization have occurred since installation. Delays are frequent, and breakdowns common. Supplies must be hand delivered to the OR when the dumbwaiters are down.

Recommendation:
Replace the existing dumbwaiters for Lab and Operating Room.

Type	Year	Cost	Priority
Failure Replacement	2013	$310,000	Low

Updated: MAR-14

D1090 Other Conveying Systems* - Swingstage

A metal framed swingstage is provided to service the Atrium Area.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	0	MAR-14

Event: Upgrade the swingstage

Concern:
Due to the age and condition of the swingstage, it will not pass the latest safety standards and inspections.

Recommendation:
Upgrade Swingstage

Consequences of Deferral:
Without this upgrade there is no access to complete maintenance to the fire alarm devices, windows or lighting.

Type	Year	Cost	Priority
Code Repair	2013	$48,997	High

Updated: MAR-14

D1090 Other Conveying Systems* - Track Vehicle System

The Electronic Track Vehicle system is original from 1985 construction, and serves all floors of the hospital. Approximately half the cars have been upgraded, however the computer software which runs the entire system has never been upgraded and runs on an obsolete DOS platform.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	0	MAR-14

Event: Replace Electronic Track Vehicle System

Concern:

The Electronic Track Vehicle system is original from 1985 construction, and operates on an obsolete DOS platform. Parts are no longer available to repair any computer failures. The system has become very unreliable for the entire facility. Further review of the system has shown significant infection control issues.

Recommendation:

Replace the existing Electronic Track Vehicle system with a modern pneumatic tube system.

Type	Year	Cost	Priority
Failure Replacement	2013	$1,102,648	High

Updated: MAR-14

S4 MECHANICAL

D2010.04 Sinks** -1985 Kitchen Style

Kitchen style sinks typically located in kitchenettes, staff areas and clinics throughout the 1985 and 1986 wings. Sinks are stainless steel.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace 96 sinks, faucets and isolation valves

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$72,000	Unassigned

Updated: MAR-14

D2010.04 Sinks** -1990 S.S. Kitchen Style

Kitchen style sinks typically located in cafeteria, kitchenettes, staff areas and clinics within the 1958 wing. Sinks are stainless steel. Sinks in cafeteria appear to have been replaced around 1993 however remainder appear 1990 construction.

Rating	Installed	Design Life	Updated
4 - Acceptable	1990	30	MAR-14

Event: Replace 31 sinks, faucets and isolation valves

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$23,250	Unassigned

Updated: MAR-14

D2010.04 Sinks**-1985 Janitor Style

Floor mounted and some wall mounted porcelain Janitor Sinks housed in janitors closets within 1985 and 1986 wings

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace 15 Janitor Sinks

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$21,375	Low

Updated: MAR-14

D2010.04 Sinks**-1985 Lab Style

Stainless Steel sinks with chrome laboratory faucets and 2-paddle handles within laboratory area.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace 23 Lab Sinks and Faucets

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$29,900	Unassigned

Updated: MAR-14

D2010.04 Sinks**-1990 Janitor Style

Floor mounted janitor sinks located in housekeeping closets throughout to the 1958 wing appear to have been upgraded around 1990.

Rating	Installed	Design Life	Updated
4 - Acceptable	1990	30	MAR-14

Event: Replace 6 Janitor Sinks

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$8,550	Low

Updated: MAR-14

D2010.05 Showers**-1985

Showers in patient rooms throughout the 1985 and 1986 wings

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace 165 Showers

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$297,000	Unassigned

Updated: MAR-14

D2010.05 Showers**-1985 Emergency Showers

Emergency showers located within Level 3 laboratory (Research) area.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace 3 Emergency Showers

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$4,200	Unassigned

Updated: MAR-14

D2010.05 Showers**-1990

Built up showers located in lower level staff area of the 1958 wing appear to have been replaced around 1990.

Rating	Installed	Design Life	Updated
4 - Acceptable	1990	30	MAR-14

Event: Replace 6 Showers

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$10,800	Unassigned

Updated: MAR-14

D2010.06 Bathtubs**- Hydrotherapy 1985

Hydrotherapy style bathtubs in the 1985 wing

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace 4 Bath Tubs

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$10,000	Unassigned

Updated: MAR-14

D2010.06 Bathtubs**-1986

Bath Shower combination units within the 1986 wing patient rooms

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-14

Event: Replace 21 Bath/Shower combos

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$42,000	Unassigned

Updated: MAR-14

D2010.08 Drinking Fountains/Coolers**-1985

Non refrigerated drinking fountains located throughout 1985 wing

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	35	MAR-14

Event: Replace 15 drinking fountains

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$16,500	Unassigned

Updated: MAR-14

D2010.10 Washroom Fixtures (WC, Lav, Urnl)**-1958 Wing

American Standard. Wall mounted, no touch faucet Lavs. Floor mounted flush tank WC, typical throughout 1958 wing. Counter mounted lavs in some locations.

Rating	Installed	Design Life	Updated
4 - Acceptable	1993	35	MAR-14

Event: Replace 65 WC, 65 Lav and 7 Urinal

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$127,600	Unassigned

Updated: MAR-14

D2010.10 Washroom Fixtures (WC, Lav, Urnl)**-1985/86 Wing

American Standard. Wall mounted, no touch faucet Lavs. Floor mounted flush tank WC, typical throughout 1985 and 1986 wings. Counter mounted lavs in some locations. Urinals in staff areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	35	MAR-14

Event: Replace 320 WC, 343 Lav and 5 Urinal

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$613,350	Unassigned

Updated: MAR-14

D2020.01.01 Pipes and Tubes: Domestic Water*

Domestic piping is generally copper and original to the building.

Rating	Installed	Design Life	Updated
3 - Marginal	0	0	MAR-14

Event: Hot Water Recirculation System Replacement - Piping and Valves

Concern:

All domestic hot water recirculation piping lines (all wings) and fittings have deteriorated and are in constant need of maintenance. The isolation valves generally do not close or hold. Shut downs are becoming more frequent for valve and piping repairs.

Recommendation:

Replace hot water recirculation distribution piping system and domestic water valves in all wings

Type	Year	Cost	Priority
Failure Replacement	2014	$925,497	High

Updated: MAR-14

D2020.01.03 Piping Specialties (Backflow Preventers)**

Backflow preventers at equipment connections within 1958, 1985 and 1986 wings
Water Softener, steam steralisers,

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	20	MAR-14

Event: Replace small diameter Backflow Preventors at equipment connections (7 total)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$10,000	Unassigned

Updated: MAR-14

D2020.02.04 Domestic Water Conditioning Equipment**

The soft water system generates soft water for various areas such as the OR's and SPD. One additional unit was installed around 2003 to supplement the original 1985 soft water system.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	20	MAR-14

Event: Completed - Install additional Water Softener

Concern:
The existing system is undersized.
Recommendation:
Install Water Softener

Type	Year	Cost	Priority
Program Functional Upgrade	2013	$43,553	Medium

Updated: MAR-14

Event: Replace Water Softening system including Salt Tank

Concern:
One additional unit was installed around 2003 to supplement the original soft water system. The remainder of the soft water system is original from the 1985 construction which is in year 25 of a normal 20 year life cycle. The Salt Tank has deteriorated and requires replacement.
Recommendation:
Replace Water Softening system including Salt Tank

Type	Year	Cost	Priority
Failure Replacement	2014	$300,000	Medium

Updated: MAR-14

D2020.02.06 Domestic Water Heaters**1985

Level 1 mechanical room:
Two Aerco, Shell and Tube, Domestic Hot Water Heaters fed from the building steam heating plant:
Model SWIB10 (1984)
Model SWIA05 (1984)

Rating	Installed	Design Life	Updated
3 - Marginal	1985	20	MAR-14

Event: Replace two 1985 DHWH

Concern:
The two older (Model SWIB10 and SWIA05 - 1984) domestic hot water heaters are constantly leaking, requiring constant maintenance.

Recommendation:
Replace the two older water heaters.

Type	Year	Cost	Priority
Failure Replacement	2014	$20,000	Medium

Updated: MAR-14

D2020.02.06 Domestic Water Heaters**2005-2011

Level 1 mechanical room:
Two Aerco, Shell and Tube, Domestic Hot Water Heaters fed from the building steam heating plant:
Model SWIA05 (2005)
Model D+07 (2011)

Rating	Installed	Design Life	Updated
5 - Good	2008	20	MAR-14

Event: Replace 2005 and 2011 DHWHs

Type	Year	Cost	Priority
Lifecycle Replacement	2028	$20,000	Unassigned

Updated: MAR-14

D2020.03 Water Supply Insulation: Domestic*

Glass fiber insulation installed on domestic water pipe throughout

Rating	Installed	Design Life	Updated
4 - Acceptable	1958	0	MAR-14

D2030.01 Waste and Vent Piping*

Cast iron and copper waste and vent piping throughout.

Rating	Installed	Design Life	Updated
3 - Marginal	1957	0	MAR-14

Event: Re-alignment Sanitary Sewer And Storm Sewer

Concern:
Storm and sanitary sewers have moved out of alignment
Recommendation:
Re-alignment of Sanitary Sewer And Storm Sewer
Consequences of Deferral:
Storm and Sanitary sewer could leak, leading to erosion, soil contamination, environmental cleanup etc.

Type	Year	Cost	Priority
Repair	2013	$45,867	Unassigned

Updated: MAR-14

Event: Rehab Support Services Building - Underground & Crawl Space Piping Replacement

Concern:
The piping has extended its service life. Drainage risers and underground piping is generally original to the 1957 building construction. All accessible original piping should be replaced . A strategy should be developed for replacement of underground main piping below level 1 slab.
Recommendation:
Replace drain risers and branch piping.

Type	Year	Cost	Priority
Failure Replacement	2013	$843,836	Medium

Updated: MAR-11

D2030.02.04 Floor Drains*

Floor drains generally located in mechanical rooms, shower areas, bathing areas, pool area and washrooms

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	0	MAR-14

D2040.01 Rain Water Drainage Piping Systems*-1985

Cast Iron storm piping throughout 1985 and 1986 wings

Rating	Installed	Design Life	Updated
3 - Marginal	1985	0	MAR-14

Event: Replace 700 meters of poor quality cast iron pipe in 1985 and 1986 wings

Concern:

Cast Iron Pipe was of a poor standard at installation and has further deteriorated over time. Leaks are becoming more prolific

Recommendation:

Replace cast iron pipe with new

Type	Year	Cost	Priority
Failure Replacement	2016	$700,000	Medium

Updated: MAR-14

D2040.02.04 Roof Drains*

Full flow, cast iron roof drains installed throughout

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	0	MAR-14

D2090.10 Nitrous Oxide Gas Systems**

5 cylinder mainfold system and alarm panel located in exterior room

Rating	Installed	Design Life	Updated
4 - Acceptable	2003	30	MAR-14

Event: Replace 5 cylinder Nitrous Oxide Gas Manifold and Alarm Panel

Type	Year	Cost	Priority
Lifecycle Replacement	2033	$7,800	Unassigned

Updated: MAR-14

Event: Revise gas monitoring systems

Concern:

The existing alarm annunciation for Nitrous Oxide is currently monitored through the fire alarm system.

Recommendation:

Revise monitoring from the fire alarm to the Building Management System.

Type	Year	Cost	Priority
Code Upgrade	2013	$25,000	High

Updated: MAR-14

D2090.11 Oxygen Gas Systems**

Gas manifold and alarm panel located in exterior room

Rating	Installed	Design Life	Updated
4 - Acceptable	2003	30	MAR-14

Event: Replace Oxygen Gas Manifold and alarm panel

Type	Year	Cost	Priority
Lifecycle Replacement	2033	$70,000	Unassigned

Updated: MAR-14

Event: Revise gas monitoring systems

Concern:
The existing alarm annunciation for Medical oxygen is currently monitored through the fire alarm system.
Recommendation:
Revise monitoring from the fire alarm to the Building Management System.

Type	Year	Cost	Priority
Code Upgrade	2013	$25,000	High

Updated: MAR-14

Event: Upgrade Medical and Oxygen to comply with current code

Concern:
Current standards require extra access for external hookup (O2). A third source for O2 (a bank of bottles on a common header) with capacity for 8 hours use.
Recommendation:
Upgrade Oxygen to comply with current standards

Type	Year	Cost	Priority
Code Upgrade	2013	$35,000	Medium

Updated: MAR-14

D2090.13 Vacuum Systems (Medical and Lab)**

Westinghouse Medical Vacuum System located in Mech Room "zero". Three x 15 hp pumps.

Rating	Installed	Design Life	Updated
4 - Acceptable	2003	30	MAR-14

Event: Replace Medical Vacuum - 85 l/s

Type	Year	Cost	Priority
Lifecycle Replacement	2033	$58,000	Unassigned

Updated: MAR-14

Event: Revise gas monitoring systems

Concern:
The existing alarm annunciation for the Medical vacuum system is currently monitored through the fire alarm system.
Recommendation:
Revise monitoring from the fire alarm to the Building Management System.

Type	Year	Cost	Priority
Code Upgrade	2013	$25,000	Medium

Updated: MAR-14

D2090.15 Pool & Fountain Equipment**-1958 Hydrotherapy Pool

Hydrotherapy pool located on level 2 with pump room below. Pool is from original 1958 construction. Pumps and filtration equipment appear to have been upgraded since 1990

Rating	Installed	Design Life	Updated
4 - Acceptable	1958	20	MAR-14

Event: Replace Hydrotherapy Pool

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$500,000	Unassigned

Updated: MAR-14

D2090.16 Medical Air System*

Medical Compressed Air systems located in Mech Room "zero". 35 x 2 l/s (75 x 2 cfm). Three pumps, each 30hp.

Rating	Installed	Design Life	Updated
3 - Marginal	2003	0	MAR-14

Event: Revise gas monitoring systems

Concern:
The existing alarm annunciation for Medical air is currently monitored through the fire alarm system.

Recommendation:
Revise monitoring from the fire alarm to the Building Management System.

Type	Year	Cost	Priority
Code Upgrade	2013	$25,000	Medium

Updated: MAR-14

Event: Upgrade Medical Air to comply with current code

Concern:
Current standards require a third source for Medical Air (a bank of bottles on a common header) with capacity for 8 hours use.

Recommendation:
Upgrade Medical Air to comply with current standards

Type	Year	Cost	Priority
Code Upgrade	2013	$30,000	Medium

Updated: MAR-14

D3040.01.01 Air Handling Units: Air Distribution**- 1958 Wing

Air Handling units within the 1958 wing appear to have been replaced around 2005

Level 3 Mechanical Room:
AC-C15: Engineered Air, model LM-15W, 8495 l/s (18,000 cfm), Glycol Heating Coil. Serves Level 3 North and South-West
AC-C14: Engineered Air, model LM-15W, 8495 l/s (18,000 cfm), Glycol Heating Coil. Serves Level 2

Level 7 mechanical Room:
AC-17: Engineered Air model LM-15C. 7,800 l/s (14,800 cfm)

Level 8 Mechanical Room
AC-11: Engineered Air, model LM-44W, 27375 l/s (58,000 cfm). Glycol Heating Coil. Serves levels 4, 5 and 6 of south wing.

Rating	Installed	Design Life	Updated
4 - Acceptable	2005	30	MAR-14

Event: Replace 4 AHU

Concern:
Air Handling units are older generation with new technology providing greater efficiency.
Recommendation:
Replace with new, current generation equipment.

Type	Year	Cost	Priority
Energy Efficiency Upgrade	2015	$400,000	Unassigned

Updated: MAR-14

Event: Replace 4 Air Handling Units

Type	Year	Cost	Priority
Lifecycle Replacement	2035	$400,000	Unassigned

Updated: MAR-14

D3040.01.01 Air Handling Units: Air Distribution**-1985/86 Wing

Level 1 - Mechanical Room (1985 Wing):
AC-3: Engineered Air model IM-36, 11,799 l/s (25,000 cfm). Steam Heating, chilled water cooling.

Level 1 - Mechanical Room 4 (1985 Wing):
AC-4: Engineered Air model IM-36, 16329 l/s (34,600 cfm).
AC-4A: Engineered Air model LMD-16-W, 6,843 l/s (14,500 cfm)

Level 6 Mechanical Room (1985 Wing):
AC-8: Engineered Air model LM-10W, 5,430 l/s (11,500 cfm)

Level 1 mechanical Room (1986 Wing):
AC-1: 7,787 l/s (16,500 cfm). Serves Cafeteria and Dietary Hallway.
AC-2: 8,259 l/s (17,500 cfm). Serves Dietary spaces

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Laundry Heating AC-3, Coil Replacement

Concern:
The Laundry Make Up Air system is a 100% outside air system. The existing steam coil has frozen in the past.
Recommendation:
Replace steam coil with glycol unit.

Type	Year	Cost	Priority
Failure Replacement	2014	$108,000	Medium

Updated: MAR-14

Event: Replace 6 Air Handling Units

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$600,000	Unassigned

Updated: MAR-14

Event: Replace 6 Air Handling units

Concern:
Air Handling units are older generation with new technology providing greater efficiency. Units are also currently undersized.
Recommendation:
Replace with new, current generation equipment.

Type	Year	Cost	Priority
Energy Efficiency Upgrade	2015	$600,000	Unassigned

Updated: MAR-14

D3040.01.04 Ducts: Air Distribution*- 1958 Wing

Galvanized supply air ductwork throughout.

Rating	Installed	Design Life	Updated
2 - Poor	1985	0	MAR-14

Event: Clean 1800 m2 Ductwork in remaining areas

Concern:
This ductwork has not been cleaned since its installation in 1985 and inspections show some dust and lint collection in places.
Recommendation:
Clean Ductwork

Type	Year	Cost	Priority
Preventative Maintenance	2013	$108,882	Low

Updated: MAR-14

Event: Completed - Clean ductwork in Morgue, Maintenance Shop & Laundry

Concern:
This ductwork has not been cleaned since its installation in 1985 and inspections show some dust and lint collection in places.
Recommendation:
Clean Ductwork

Type	Year	Cost	Priority
Preventative Maintenance	2013	$108,882	Low

Updated: MAR-14

Event: Remove Blockages from approx. 7 Fire Dampers

Concern:
Fire dampers located at floor levels within service chase behind main elevators have been compromised (blocked).
Recommendation:
Remove Blockages and repair compromised fire seperation

Type	Year	Cost	Priority
Code Repair	2014	$15,000	High

Updated: MAR-14

D3040.01.07 Air Outlets & Inlets: Air Distribution*

Variety of eggcrate, square cone and sidewall diffusers throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	0	MAR-14

D3040.02 Steam Distribution Systems: Piping/Pumps**

Black Steel and Cast Iron steam and condensate pipe from Energy Centre and throughout 1958, 1985 and 1986 wings. Piping extends to perimeter radiation in some areas and heat exchangers throughout the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	40	MAR-14

Event: Replace Steam Distribution Systems 53,659 sqr m. within 1958, 1985 and 1986 wings

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$2,682,950	Unassigned

Updated: MAR-14

D3040.03.01 Hot Water Distribution Systems**-1958

Level 3 Mechanical Room:
pumps P-C6 and P-C7. Each 3 l/s against 90m head serve steam to glycol heat exchanger and heating coils within Air Handling units AC-C14 and AC-C15

Level 7 Mechanical Room:
Pumps P-1 and P-2, each 272 gpm against 32 ft head.
Pumps P-3 and P-4, each 70 gpm against 35 ft head.
Pumps serve glycol systems for AC-17, 19, 20 and 21.

Level 8 Mechanical Room:
pumps P-5, P-9 and P-11. Each 11 l/s (175 gpm) against 12.5 meters (41 ft) head. Serve steam to glycol heat exchanger and heating coils within Air Handling unit AC-11

Rating	Installed	Design Life	Updated
3 - Marginal	1957	40	MAR-14

Event: Heating and Distribution System Upgrade

Concern:
All distribution piping lines, fittings throughout 1958, 1985 and 1986 wings have deteriorated and are in constant need of maintenance. The isolation valves generally do not close or hold. Shut downs are becoming more frequent for valve and piping repairs.

Recommendation:
Replace heating distribution piping system.

Type	Year	Cost	Priority
Failure Replacement	2013	$1,633,230	High

Updated: MAR-14

Event: Pump Upgrade with VFDs and 2 way valves

Concern:
Most of the pumps in the facility have been repaired numerous times and are inefficient. A general upgrade of the pumps with Variable Frequency Drive installations would increase energy efficiency and require less maintenance time.

Recommendation:
Replace & install Variable Frequency Drives on pumps throughout the facility. Replace 3-way valves with 2-way valves where required.

Type	Year	Cost	Priority
Energy Efficiency Upgrade	2013	$571,631	Medium

Updated: MAR-14

Event: Replace all (7) Hot Water coils and associated pumps

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$350,000	Unassigned

Updated: MAR-14

D3040.03.02 Chilled Water Distribution Systems**

Chilled water is fed from primary pumps located in the Energy Centre

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	40	MAR-14

Event: Change Modulating 3 way to 2 way Valves and Rebalance Chilled Water Loop

Concern:
The chilled water loop is potentially over tasked, resulting in inadequate flow. This evaluation would determine the usage and options to maintain adequate chilled water supply.
Recommendation:
Implement all recommendations identified in evaluation

Type	Year	Cost	Priority
Operating Efficiency Upgrade	2013	$707,733	High

Updated: APR-12

Event: Chilled Water Evaluation

Concern:
The chilled water loop is potentially over tasked, resulting in inadequate flow. This evaluation would determine the usage and options to maintain adequate chilled water supply.
Recommendation:
Evaluate the existing chilled water design.

Type	Year	Cost	Priority
Study	2013	$43,553	High

Updated: APR-12

Event: Replace Chilled Water Distribution Systems 53,659 sqr m. within 1958, 1985 and 1986 wings

Type	Year	Cost	Priority
Lifecycle Replacement	2019	$571,631	Unassigned

Updated: MAR-14

D3040.03.03 Condenser Water Distribution Systems Pumps*-1985

Condenser water to Computer Room AC Units and free cooling equipment throughout.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	0	MAR-14

Event: Repair 10 meters of insulation and replace 10 meters of pipe

Concern:

Insulation around grundfos free cooling pump located in mechanical chase on level 1 has deteriorated. Condensation on pipe has resulted in pipe corrosion.

Recommendation:

Repair insulation and replace corroded pipe

Type	Year	Cost	Priority
Preventative Maintenance	2014	$5,000	Low

Updated: MAR-14

D3040.04.01 Fans: Exhaust** - 1985/86 Wing

Roof Mounted Exhaust Fans:
EF-L3: 1/2 hp
SEF-1: Canadian Blower, size 32
EF-L2: 1/3 hp
EF-?: 1/4 hp
KEF-2: frac hp
EF-52: frac hp
EF-?: Greenheck model SB-101-4-A

Level 6 fan room:
EF-33: Telepresence Room Exhaust
EF-34: fume hood exhaust
EF-13: Radiology General Exhaust
EF-14: Lab Washroom Exhaust
EF-15: Lab General exhaust
EF-XX: Tin City blower

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-14

Event: Replace 13 exhaust fans

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$45,500	Unassigned

Updated: MAR-14

D3040.04.01 Fans: Exhaust**- 1958 Wing

Roof Mounted Exhaust Fans within the 1958 wing appear to have been replaced around 2005:
SEF-1: Canadian Blower model 805 BLS
SEF-2: Canadian Blower model 805 BLS
SEF-3: Canadian Blower model 805 BLS

Rating	Installed	Design Life	Updated
4 - Acceptable	2005	30	MAR-14

Event: Replace 3 large exhaust fans

Type	Year	Cost	Priority
Lifecycle Replacement	2030	$15,000	Unassigned

Updated: MAR-14

D3040.04.03 Ducts: Exhaust*

Galvanized exhaust ducts located throughout.
Black welded steel kitchen exhaust ducts.

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	0	MAR-14

D3040.04.05 Air Outlets and Inlets: Exhaust*

Weatherproof Louvers located throughout for air inlets and discharge from mechanical rooms.
Some roof mounted goose necks for exhaust air discharge.

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	0	MAR-14

D3040.05 Heat Exchangers**

Approximately 7 Heat Exchangers located throughout to convert steam from the Energy Centre to heating water and glycol for coils within air handling units and perimeter radiation.

Rating	Installed	Design Life	Updated
3 - Marginal	1984	30	MAR-14

Event: Replace approx 7 Water/glycol heat exchangers

Concern:
The Heat Exchangers were installed in the 1984 construction and have passed the equipment life expectancy. Parts are no longer available. Requires constant maintenance.
Recommendation:
Replace water and glycol converters.

Type	Year	Cost	Priority
Failure Replacement	2013	$420,000	Medium

Updated: MAR-14

D3050.01.01 Computer Room Air Conditioning Units**-1985

Liebert Server Room AC unit located on Level 1. Unit has duty/stand-by 15 tons refrigeration compressors

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	30	MAR-14

Event: Replace Server Room AC Unit

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$55,000	Unassigned

Updated: MAR-14

D3050.01.03 Packaged Terminal Air Conditioning Units*

Air Cooled DX fan coil units serving the MRI spaces. We understand these units were upgraded since 1995

Rating	Installed	Design Life	Updated
4 - Acceptable	1995	0	MAR-14

Event: Completed - MRI Cooling Upgrade

Concern:
During the winter season the main chillers do not operate, leaving the MRI cooling unit's to operate on city supplied domestic cold water. Recently the facility lost city water pressure resulting in the MRI over-heating.
Recommendation:
Replace 2 water-cooled condensing units with 2 air-cooled condensing units.

Type	Year	Cost	Priority
Program Functional Upgrade	2013	$70,773	High

Updated: MAR-14

D3050.05.03 Finned Tube Radiation**-1958 Wing

Wall fin convectors installed throughout building perimeter. Bare fin elements in ceilings below roofs. Installed with original construction in 1958 wing.

Rating	Installed	Design Life	Updated
4 - Acceptable	1958	40	MAR-14

Event: Replace 1000m of Finned Tube Radiation in 1958 wing

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$315,000	Unassigned

Updated: MAR-14

D3050.05.03 Finned Tube Radiation**-1985/1986 Wing

Wall fin convectors installed throughout building perimeter. Bare fin elements in ceilings below roofs. Installed with original construction in 1985 and 1986 wings.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	40	MAR-14

Event: Replace 2000m of Finned Tube Radiation in 1985 wings

Type	Year	Cost	Priority
Lifecycle Replacement	2025	$630,000	Unassigned

Updated: MAR-14

D3050.05.06 Unit Heaters**-1958

Forced Flow Heaters (FFH) located at entrances and within stair risers on building perimeter. Unit Heaters located within Service Areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	30	MAR-14

Event: Replace 9 Unit Heaters and 5 FFH

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$11,200	Unassigned

Updated: MAR-14

D3060.02.01 Electric and Electronic Controls**

Electronic actuators and thermostats located on Level 7 only

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-14

Event: Replace controls on level 7

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$50,000	Unassigned

Updated: MAR-14

D3060.02.02 Pneumatic Controls**

Pneumatic controls located throughout the facility with the exception of level 7 which has been upgraded to DDC.

In the 1958 wing and Acute Care Building (1985/1986), the major systems control (air handling units, pumps, converters, etc.) is done using direct digital controls with pneumatic field devices. Panels were installed in original 1985 construction and upgraded in 1999. In the Rehab Support Services Building (1985), the major control dampers and valves are pneumatic. All terminal heating and ventilation controls are pneumatic.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	40	MAR-14

Event: Upgrade Pneumatic Controls To Electronic

Concern:

Pneumatic devices (thermostats, actuators and associated control panels) have reached the end of their expected life. Current generation digital controls offer improved control and efficiencies.

Recommendation:

Replace all pneumatic thermostats, actuators and associated control panels with electronic type.

Type	Year	Cost	Priority
Failure Replacement	2013	$900,000	Medium

Updated: MAR-14

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

Building management system appears to have been installed or upgraded with the 1985 construction. DDC panels control primarily pneumatic field devices with digital field devices currently on level 7 only.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	20	MAR-14

Event: Building Management Control System Replacement

Concern:

All panels are from original 1985 construction. The panels are outdated and have problems recovering from power failures. The communications trunk is slow to respond.

Recommendation:

Upgrade the site building management system.

Type	Year	Cost	Priority
Failure Replacement	2013	$1,840,106	Medium

Updated: MAR-14

D4010 Sprinklers: Fire Protection*

Wet, semi-recessed fire protection sprinkler heads typical throughout. Upright heads in areas where exposed. Dry heads in some locations such as exterior overhangs.

Rating	Installed	Design Life	Updated
3 - Marginal	1958	0	MAR-14

Event: Replace 30 missing sprinkler escucheons

Concern:
Sprinkler heads missing escucheons in numerous locations. Sprinkler heads are a listed device that require escucheons to meet ULC ratings.

Type	Year	Cost	Priority
Code Repair	2014	$1,000	Unassigned

Updated: MAR-14

Event: Test sample of sprinkler heads

Concern:
NFPA 25 requires that sprinkler that have been in service for 50 years must be replaced or tested and retested every 10 years
NFPA 25 also requires that Dry Sprinkler heads that have been in service for 10 years must be replaced or tested and retested every 10 years
Recommendation:
Test sample of sprinkler heads in accordance with NFPA requirements

Type	Year	Cost	Priority
Code Repair	2014	$5,000	Low

Updated: MAR-14

Event: Upgrade Fire Sprinkler System

Concern:
Sprinkler valves and alarm detection did not always respond when activated during annual testing.

During fire alarm testing there have been numerous devices identified to be not functioning properly. The change out of various tamper and flow switches is required.
Recommendation:
Upgrade Sprinkler Valves and Alarm Detectors. Replace various tamper, flow switches.

Type	Year	Cost	Priority
Code Repair	2013	$152,890	Unassigned

Updated: MAR-14

D4020 Standpipes*

Standpipes located in each hospital wing. "Pump Start" buttons in 1958 Wing have been removed from service as fire pumps are now automatic.

Rating	Installed	Design Life	Updated
4 - Acceptable	1957	0	MAR-14

D4030.01 Fire Extinguisher, Cabinets and Accessories*

Approximately 58 Fire Valves and type ABC Fire Extinguishers located throughout the 1958, 1985 and 1986 wings. Type K Extinguishers in Kitchen areas. Extinguishers appear to be regularly serviced.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	0	MAR-14

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

3 large Kitchen Hoods located within main Kitchen area.

Rating	Installed	Design Life	Updated
4 - Acceptable	1993	40	MAR-14

Event: Replace 3 Dry Chemical Fire Extinguishing Systems

Type	Year	Cost	Priority
Lifecycle Replacement	2033	$16,000	Low

Updated: MAR-14

S5 ELECTRICAL

D5010.02 Secondary Electrical Transformers (Interior)** 13.8 KV Medium Voltage Transformers

The hospital has several liquid cooling 13.8 KV distribution transformers installed within the hospital. The transformers installed consist of two 2500 KVA, two 1250 KVA, three 1000 KVA and one 1500 KVA step down transformers.

Rating	Installed	Design Life	Updated
4 - Acceptable	1983	40	MAR-14

Event: Replace the eight existing 13.8 KV step down transformers

Type	Year	Cost	Priority
Lifecycle Replacement	2023	$750,000	Unassigned

Updated: MAR-14

D5010.02 Secondary Electrical Transformers (Interior)** Dry Type Transformers

The hospital has numerous 600 volt to 120/208 volt dry type transformers installed throughout the building. They range in sizes from 15 KVA to the largest being 500 KVA. All transformers have a primary voltage of 600 volts and secondary voltages of 120/208 volt 3 phase 4 wire.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-14

Event: Replace the existing Dry type transformers (Approx. 38 transformers)

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$325,000	Unassigned

Updated: MAR-14

D5010.03 Main Electrical Switchboards (Main Distribution)** 1986 Acute Care Building

The main service to the acute care building consists of two 4000 amp panel boards tied together with a tie breaker. Each the boards are fed from the Energy center with a 13,800 volt feeder, through a step down transformer. The main distribution panel is a Westinghouse panel.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	40	MAR-14

Capacity Size	Capacity Unit
4000	amps

Event: Replace the Acute Care Main 600 Volt panels (Two Panels and Tie Breaker)

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

Updated: MAR-14

D5010.03 Main Electrical Switchboards (Main Distribution)** 1986 RSS building

The main service to the RSS building consists of 1600 amp 347/600 volt distribution panel the is split into two halves with a 1600 amp tire breaker. The panel is fed from the energy center with one 13,800 volt feeders to a medium voltage switching cubicle located outside.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	40	MAR-14

Capacity Size	Capacity Unit
1600	amps

Event: Replace the 600 volt Distribution equipment (one panel complete with tire breaker)

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

Updated: MAR-14

Event: Supply And Install a redundant feeder to the RSS Medlium Voltage Vault

Concern:

Currently the existing RSS 13,800 volt equipment does not have a redundant feeder installed the emergency center.

Recommendation:

Supply and install a redundant feeder to the RSS exterior equipment and make and revisions to the existing equipment to add a tie breaker.

Consequences of Deferral:

If the only feeder is lost or fails, there would be no redundant feeds to the building, and power would rely on the emergency generators while repairs are completed.

Type	Year	Cost	Priority
Code Upgrade	2015	$250,000	High

Updated: MAR-14

D5010.05 Electrical Branch Circuit Panelboards (Secondary Distribution)** 1983

The branch circuit panels in the 1983 wing consist of several Square D branch circuit panels installed throughout the RSS wing. They are both recessed as well as surface mounted. The lighting panels consist of 347/600 volt 3 phase 4 wire panels while the general power consist of 3 phase 4 wire 120/208 volt 3 phase panels.

Rating	Installed	Design Life	Updated
4 - Acceptable	1983	30	MAR-14

Event: Replace the Secondary Brancd Circuit panels and CDP Panels(Approx. 84 panels)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$350,000	Unassigned

Updated: MAR-14

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

The branch circuit panels in the North and South Acute care wings consist of Westinghouse branch circuit panels that were installed as part of the 1986 expansions. They are both recessed as well as surface mounted. The lighting panels consist of 347/600 volt 3 phase 4 wire panels while the general power consist of 3 phase 4 wire 120/208 volt 3 phase panels.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-14

Event: Replace the Westinghouse Branch Circuit Panels and CDP's (Basedon Approx. 200 panels)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$800,000	Unassigned

Updated: MAR-14

D5010.07.01 Switchboards, Panelboards, and (Motor) Control Centers** 1983

The hospital has numerous motor control centers installed to control mechanical pumps and motors. They consist of 600 volt Westinghouse as 600 volt Cuttler Hammer equipment.

Rating	Installed	Design Life	Updated
4 - Acceptable	1983	30	MAR-14

Event: Replace The motor control Centers (Based on Approx. 6 Motor Control Centers)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$500,000	Unassigned

Updated: MAR-14

D5010.07.01 Switchboards, Panelboards, and (Motor) Control Centers** 1986

The hospital has numerous motor control centers installed to control mechanical pumps and motors. They consist of 600 volt Westinghouse as 600 volt Cuttler Hammer equipment.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-14

Event: Replace Motor Control Centers (Approx. 11)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$330,000	Unassigned

Updated: MAR-14

D5010.07.02 Motor Starters and Accessories** 1983

The building has several loose motor starters installed through out the facility. They are used to feed smaller motors and pumps where it was not practical to install a larger motor control center. There is a wide variety of different motor starters within in the hospital however they mainly consists of Allen Bradley, Westinghouse or Cuttler Hammer.

Rating	Installed	Design Life	Updated
4 - Acceptable	1983	30	MAR-14

Event: Replace the Existing Loose starters (Approx. 25)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$30,000	Unassigned

Updated: MAR-14

D5010.07.02 Motor Starters and Accessories** 1986

The building has several loose motor starters installed through out the facility. They are used to feed smaller motors and pumps where it was not practical to install a larger motor control center. There is a wide variety of different motor starters within in the hospital however they mainly consists of Allen Bradley, Westinghouse or Cuttler Hammer.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	30	MAR-14

Event: Replace the loose motor starters (Approx. 35 starters)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$52,500	Unassigned

Updated: MAR-14

D5010.07.03 Variable Frequency Drives**

The hospital has several ABB variable frequency drives installed in the mechanical rooms for controlling larger pumps and motors.

Rating	Installed	Design Life	Updated
4 - Acceptable	1983	30	MAR-14

Event: Replace the Variable Frequency Drives (Approx. 16)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$105,000	Unassigned

Updated: MAR-14

D5020.01 Electrical Branch Wiring*

The branch circuit wiring in the the 1957 wing consists of EMT conduit complete with single conductor cable. The use of AC90 and flexible conduit was noted for final connections to motors, fans, pumps and light fixtures.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-14

D5020.02.01 Lighting Accessories: Interior (Lighting Controls)*

The lighting control throughout the building consists of a combination of line voltage toggle switches and dimmers with a low voltage lighting control system. The corridor lighting appears to be mainly controlled with the low voltage switching while the individual rooms such as office spaces and service rooms appear to be controlled with the line voltage toggle switches.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-14

D5020.02.02.01 Interior Incandescent Fixtures*

The building has several recessed mounted pot lights, track lights as well as some wall mounted two lamp fixtures installed in the patient washrooms. As the lamps are replaced they are slowly being replaced with a retro-fit LED style incandescent lamp.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-14

D5020.02.02.02 Interior Fluorescent Fixtures** T12 Fixtures

The hospital has approximately 10% of the remaining fixtures that are still lamped with T12 lamps and electronic ballasts. These fixtures are in the form of recessed mounted 1x4 and 2x4 fixtures, strip lights used in service rooms, strip lights used for cove lighting and surface mounted fixtures installed in the washrooms and stairwells. These remaining fixtures are currently being retro fitted with T8 lamps and will be completed within a month of this review.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	30	MAR-14

Event: Replace the remaining 10% of the T12 lamps with T8 lamps (based on 5,365 SQM)

Concern:

The replacement parts for T12 fixtures are no longer manufactured.

Recommendation:

Replace the remaining T12 fixtures with T8 lamps and electronic ballasts.

Type	Year	Cost	Priority
Failure Replacement	2014	$206,500	High

Updated: MAR-14

D5020.02.02.02 Interior Fluorescent Fixtures** T8 Fixtures

As of the date of this review the hospital as retro-fitted approximately 90% of the existing fixtures to T8 lamps completed with electronic ballasts. There are numerous styles of fixtures installed through out the hospital. There was noted to have 1x4 and 2x4 recessed mounted fixtures, 2x2 and 2x4 parabolic fixtures, surface and suspended strip fixtures in the service rooms as well as surface mounted fixtures in the washrooms and stairwells.

Rating	Installed	Design Life	Updated
5 - Good	2013	30	MAR-14

Event: Replace T8 fixtures (base on an approx. area of 48,294 SQM)

Type	Year	Cost	Priority
Lifecycle Replacement	2043	$1,859,319	Unassigned

Updated: MAR-14

D5020.02.02.04 Interior H.P. Sodium Fixtures*

The main entrance lobby/atrium have several pole mounted architectural high pressure sodium fixtures installed.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	0	MAR-14

Event: Replace the Atrium High Pressure Sodium Fixtures (Approx. 12 fixtures)

Concern:
It was noted during the review that the architectural high pressure sodium fixtures installed often fail and that the replacements parts are no longer available.

Recommendation:
Replace the fixtures with a more modern LED style fixture.

Consequences of Deferral:
Should the fixtures fail the lighting levels will be diminished while repairs are completed.

Type	Year	Cost	Priority
Failure Replacement	2016	$18,000	Low

Updated: MAR-14

D5020.02.03.01 Emergency Lighting Built-in*

The emergency lighting in this facility consists of the general fluorescent lighting connected to an emergency power system installed throughout the facility. Each fixture is connected to an emergency power panel that is fed from one of the emergency generators located in the energy center.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-14

D5020.02.03.02 Emergency Lighting Battery Packs**

The facility has a small number of emergency lighting battery packs installed through out the facility. As the building does have an emergency generator located in the energy center, the use of battery packs appears to be limited to the OR rooms, generator rooms and miscellaneous rooms that require lighting even for the brief time while the generator is starting and stabilizing.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	20	MAR-14

Event: Replace the Emergency battery packs (Approx. 20 battery packs)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$23,200	Unassigned

Updated: MAR-14

D5020.02.03.03 Exit Signs*

The majority of the of exit signs appear to consist of incandescent style fixtures. As the fixtures are in need of replacement they are retro-fitted with LED style lamps.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-14

Event: Upgrade the Exit signs to LED style fixtures (Based on GFA)

Concern:
The exit lighting is primarily incandescent type, with only a handful retrofitted to LED.
Recommendation:
Convert all exit lights to LED lamp technology.

Type	Year	Cost	Priority
Energy Efficiency Upgrade	2016	$190,500	Low

Updated: MAR-14

D5020.02.11 Operating Room Lighting*

The operating room lighting consists of 2x4 T8 fluorescent fixtures for the general lighting as well as Skytron Stryker operating room fixture.

Rating	Installed	Design Life	Updated
4 - Acceptable	1998	0	MAR-14

D5020.03.01.04 Exterior H.P. Sodium Fixtures*

The facility has numerous pole mounted high pressure sodium fixtures installed along the road ways as well as in the staff parking lots. Along with this there was also noted to be several wall mounted high pressure sodium fixtures installed at specific locations around the building, and also some recessed mounted high pressure sodium fixtures installed in the soffits at some of the service entrances on the north side of the building. The center court yard located outside of the cafeteria has some decorative high pressure sodium bollard lights along the walkways.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-14

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

The exterior lighting is controlled with the use of photo cells, time clocks and associated relays. The exterior lighting has the ability to be connected to the BMS system, however this function is no longer utilized and is operating on the basic lighting controls. .

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-14

D5030.01 Detection and Fire Alarm**

The fire alarm system installed in the hospital consists of a Simplex 2120 non addressable fire alarm system. There are several transponders installed throughout the building. The fire alarm system consists of manual pull stations installed at each fire separation and at all required exits, there is also several smoke detectors, heat detectors and duct smoke detectors installed throughout. The signaling is accomplished with the use fire alarm speakers installed throughout the building.

The existing fire alarm system is scheduled to be replaced as part of the new expansion to the building. The new system is currently under design.

Rating	Installed	Design Life	Updated
2 - Poor	1986	25	MAR-14

Event: Replace the exisitng Simplex 2120 with a new fully addressable fire alarm system (Based on 53,659 SQM)

Concern:

The current system is no longer manufactured and replacement parts are no longer available.

Recommendation:

Replace the existing Simplex 2120 non addressable panel with a new Simplex 4100 fully addressable system.

Consequences of Deferral:

With the existing parts no longer available, any expansions or part failures within the fire alarm system could result in extended fire watches being implemented while the fire alarm system is down for repair.

Type	Year	Cost	Priority
Failure Replacement	2014	$1,700,000	High

Updated: MAR-14

D5030.02.01 Door Answering*

The doors are all locked after hours (with the exception of the emergency room). Each lock door also has an intercom stations installed that is connected directly to the security department. The security can then unlock each door through the door access control system if they choose to open the doors.

Rating	Installed	Design Life	Updated
4 - Acceptable	1983	0	MAR-14

D5030.02.03 Security Access**

The security access system is a Siemens system complete with card access on all secure doors. The doors have door mags, card swipes and request to exits on all secure doors. Each door is also monitored through the Siemens system for door status. This is monitored by security as well as at the plant operators station in the energy center.

Rating	Installed	Design Life	Updated
5 - Good	2010	25	MAR-14

Event: Replace the Security Access control system (Based on 53,659 SqM)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$715,500	Unassigned

Updated: MAR-14

D5030.02.04 Video Surveillance**

The hospital has numerous Pelco CCTV cameras installed throughout the building. They are all connected through the CCTV system and monitored by the CCTV monitors at the main security desk.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	25	MAR-14

Event: Replace the existing Pelco CCTV cameras and associated head end equipment (Based on 53,659 SqM)

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$625,000	Unassigned

Updated: MAR-14

D5030.03 Clock and Program Systems*

The existing clock system is controlled through a Simplex clock system located in the main telephone room.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	0	MAR-14

Event: Clock System Replacement (Based on 53,659 SqM)

Concern:

The power line carrier systems are notoriously unreliable due to other harmonics that exist on a 120Vac distribution system.

Recommendation:

It is recommended that all older analog clocks be replaced with new analog or digital clocks. Clock correction should be done through a dedicated 3 wire network.

Type	Year	Cost	Priority
Failure Replacement	2016	$299,500	Medium

Updated: MAR-14

D5030.04.01 Telephone Systems*

The existing telephone system is a Nortel Meridian 1 telephone switch. The back bone telephone cabling consists of multi conductor CAT3 cables running from the demarc in the main telephone room to the many smaller communication rooms throughout the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1983	0	MAR-14

Event: Upgrade the telephone switch to provide more capacity (add 4 additional switches)

Concern:

The telephone switch has never been upgraded or expanded since installed, and has no spare capacity for future telephone expansion.

Recommendation:

Upgrade the existing telephone switch to allow for future expansions to the building.

Consequences of Deferral:

As the telephone switch has not spare capacity and unexpected upgrades could be delayed while the telephone switch is expanded to handle any new requirements.

Type	Year	Cost	Priority
Program Functional Upgrade	2015	$85,500	Unassigned

Updated: MAR-14

D5030.04.03 Call Systems**

The nurse call system is a Dukane system that was installed in 1999. The system consists of pull strings in each patient wash room. Each patient bed also has a nurse call station installed in the head board. A call light is installed in ceiling outside of each patient bed. The system has not been upgraded since the installation date, and does not have functional capacity to handle the code blue.

Rating	Installed	Design Life	Updated
3 - Marginal	1999	25	MAR-14

Event: Replace the Dukane Nurse Call System (Based on 53,659 SqM)

Concern:

The existing nurse call system was installed in 1999 with no upgrades done to date. The system requires several upgrades to provide code blue coverage which is currently done through the fire alarm system. The Teletracer pocket pagers date to 1987 to provide wireless alert from the nurse call system to staff. This system has been out of service since 2004 due to the lack of available parts and technical support.

Recommendation:

Replace the existing Dukane ProCare 6000 nurse call system to a new Nurse Call system complete with wireless Duress system.

Type	Year	Cost	Priority
Failure Replacement	2016	$900,000	Medium

Updated: MAR-14

D5030.04.04 Data Systems*

The existing data system consists of a back bone cabling system system made up of CAT5 cabling as well as fiber back bone cabling. The main server room is located in the main IT offices, and all sub-data rooms are connected to this room with fiber and CAT5 cables.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

D5030.04.08 Central Dictation Systems* Doctors Registry

Rating	Installed	Design Life	Updated
3 - Marginal	1986	0	MAR-14

Event: Replace Doctor's Registry (Based on 53,659 SqM)

Concern:
The Medistan is no longer supported technically and parts are not available

Recommendation:
Replace Doctor's Registry

Type	Year	Cost	Priority
Failure Replacement	2014	$170,000	Unassigned

Updated: MAR-14

D5030.05 Public Address and Music Systems**

The public address system in this hospital is a TOA EXES 6000 intercom system and was installed as part of the original construction in 1983. The system consists of speakers and amplifiers installed through out the hospital.

Rating	Installed	Design Life	Updated
3 - Marginal	1983	0	MAR-14

Event: Replace the public address system (based on 53,659 SqM)

Concern:
The TOA EXES 6000 intercom system dates back to original 1984 construction and has not been updated. Parts and technical support are no longer available.

Recommendation:
Replace the existing paging system with more capacity to handle future expansions.

Consequences of Deferral:
As the paging system is used as a back up should the telephone system fail, critical communications would be lost should the paging system fail.

Type	Year	Cost	Priority
Failure Replacement	2016	$450,000	Medium

Updated: MAR-14

D5030.06 Television Systems*

The patient TV Service is provided through an Electroline EAS-II control unit installed circa 1988. There are approximately 250 cable TV outlets throughout the hospital with 2 in-house patient-modulated patient education channels - the wiring has been upgraded from RG59 to RG6 in order to handle the 24 volt power source to the TV sets. The majority of the patient sets are outdated circa 1985 with only a 20-channel tuner. There are 27 RF distribution amplifiers that regulate signal levels. These amplifiers are outdated as they have a 300 MHz bandwidth (maximum channel number 40). Consideration should be given to utilizing digital technology instead of analog, when upgrading this system. The cable distribution system failures are being upgraded as they fail and 30 new picture tube type (out of date) TVs were bought in 2006.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	0	MAR-14

Event: Replace the Patient TV Monitors (Based on 250 TV Locations)

Concern:

The existing patient TV monitors are obsolete and are no longer manufactured.

Recommendation:

Replace the existing tube style analog Televisions with modern digital technology televisions.

Consequences of Deferral:

As the replacement parts and Televisions are no longer manufactured, component failures will likely result in the televisions being inoperable while parts are sourced.

Type	Year	Cost	Priority
Failure Replacement	2016	$250,000	Medium

Updated: MAR-14

Event: Replace the Patient TV System (based on 27 Amplifer locations)

Concern:

The existing television amplifiers and tuners are no longer manufactured and parts are hard to obtain.

Recommendation:

Upgrade the existing analog amplifiers and tuners to a modern digital TV system.

Consequences of Deferral:

Failure of any components related to the amplifiers or tuners will result in several televisions being inoperable while replacements parts are found.

Type	Year	Cost	Priority
Failure Replacement	2016	$300,000	Low

Updated: MAR-14

Event: Replace the TV system cabling (based on 250 TV outlets)

Concern:

The cabling system was reported to have problems with cables failing.

Recommendation:

Replace the cable distribution system . This should be upgraded to suite a digital system when the remainder of the equipment is also upgraded.

Consequences of Deferral:

Cable failure will result in the television associated to be in operable.

Type	Year	Cost	Priority
Failure Replacement	2016	$150,000	Low

Updated: MAR-14

D5090.01 Uninterruptible Power Supply Systems**

The existing facility does not have a central Uninterruptible Power Supply system. The existing UPS for OR, ICU etc. is undersized. The hospital has no centralized UPS System, but instead deploys individual UPS boxes where required leading to poor reliability and higher maintenance. Many of these units have been purchased by individual departments and records are poor indicating location of every one. A central Uninterruptible Power Supply system would replace the various small systems through out the facility.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	30	MAR-14

Event: Upgrade to one Centralized Uninterruptible Power Supply System

Concern:

The hospital has several smaller single UPS units installed wherever required and does not contain one centralized UPS for the entire hospital.

Recommendation:

Install a central Uninterruptible Power Supply system.

Consequences of Deferral:

With numerous UPS units installed around the facility maintenance of each unit will be difficult and the chance of one failing is greater.

Type	Year	Cost	Priority
Operating Efficiency Upgrade	2016	$970,500	High

Updated: MAR-14

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

The building does not have any emergency generators installed. The emergency generators are located in the Energy Center which is not included in this report. The generators in the energy center are currently being replaced with larger more reliable generators so as to feed the entire building with emergency power. The emergency power in this building is controlled through numerous 600 amp 4 pole transfer switches (complete with bypass) installed throughout the building.

Rating	Installed	Design Life	Updated
3 - Marginal	1986	35	MAR-14

Event: Upgrade the Transfer Switches and Connect the transfer switches to the new EPCS System (Based on 7 transfer switches)

Concern:

The transfer switches are outdated, and showing wear on the internal components.

Recommendation:

Upgrade all of the transfer switches to the new Emergency Power Control System by TTI (Thomson Technologies) to match the new energy center emergency power control system.

Consequences of Deferral:

As the transfer switches are aging and replacement parts are harder to source, if a transfer switches fails the emergency power system could be inactive while repairs are completed.

Type	Year	Cost	Priority
Failure Replacement	2015	$1,250,000	Medium

Updated: MAR-14

D5090.06 Lightning Protection Systems*

The hospital has a lightening protection system installed throughout the roof of the building. It consists of lightening arrestors spaced around the roof parapets, braided conductors connecting all of the roof top equipment such as exhaust fans and ladders to the lightening protection down rods. There are several down conductors installed around the building which connect to the inspection wells that are installed around the facility. Along with the roof top ground there is also a counterpoise ground grid that is installed around the perimeter of the building under ground to aid in the lighting protection system.

Rating	Installed	Design Life	Updated
4 - Acceptable	1986	0	MAR-14

S6 EQUIPMENT, FURNISHINGS AND SPECIAL CONSTRUCTION

E1010.06 Commercial Laundry and Dry Cleaning Equipment*

A very large commercial grade laundry is provided on Level One - Complete with a dirty laundry side and a separate clean laundry side. Numerous large pieces of equipment are constantly being replaced and upgraded. The Facility Operator advises that the equipment is appropriate for the use.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

E1030.03 Loading Dock Equipment*

There are a number of loading docks on level one, which are provided with door seals, dock levelers and bumpers.

Rating	Installed	Design Life	Updated
4 - Acceptable	1992	0	MAR-14

E1090.02 Solid Waste Handling Equipment

Equipment is installed, adjacent the loading area, to handle food waste, laundry waste and bio-medical waste products, in separate isolated streams.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	25	MAR-14

E1090.03 Food Service Equipment*

A full commercial kitchen including stores, of over 1000 m2, as well as remote serveries, is provided for meal delivery to staff and patients. All the equipment, fixtures, and fittings are stainless steel.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

E1090.07 Athletic, Recreational, and Therapeutic Equipment*

Various therapeutic tubs, showers and associated equipment. Physiotherapy equipment is also provided.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

E2010.02 Fixed Casework**

Fixed casework provided in patient rooms, kitchens, serveries, washrooms, workrooms, crafts rooms, offices, lounges -- plywood construction, plastic laminate counters.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	35	MAR-14

Event: Countertop Replacements (Hospital Staff Estimate)

Concern:
The countertops are existing from 1985 showing significant wear in all areas of the facility. The deterioration of the countertops have become a safety concern in many areas.

Recommendation:
Replace various countertops.

Type	Year	Cost	Priority
Failure Replacement	2015	$320,113	High

Updated: MAR-14

Event: Replace 1200 lm fixed casework

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$1,120,000	Unassigned

Updated: MAR-14

E2010.03.01 Blinds**

Exterior windows (1000) and some interior windows (150) are covered with vertical fabric or aluminum louvre blinds. Some west-facing windows have rolling solar blinds.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	30	MAR-14

Event: Replace 1150 vertical louvre window blinds

Type	Year	Cost	Priority
Lifecycle Replacement	2029	$260,000	Unassigned

Updated: MAR-14

E2010.06 Fixed Interior Landscaping*

Some interior planting is provided in the central atrium space on the main floor.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

F1040.01 Aquatic Facilities*

A small therapy pool is provided within the main floor physiotherapy area. This is a concrete tub with ceramic tile finishes. Stainless steel ladders and accessories.

Rating	Installed	Design Life	Updated
3 - Marginal	1985	0	MAR-14

Event: Drain pool and apply waterproofing treatment

Concern:
The concrete formed pool is leaking, mostly from various fittings. This is accessible in the lower level access area.

Recommendation:
Drain pool and apply waterproofing treatment. Inspect, repair and seal all fittings.

Type	Year	Cost	Priority
Repair	2015	$100,000	Low

Updated: MAR-14

S8 SPECIAL ASSESSMENT

K2030 Program Layout

This element has been provided by the Hospital Facility Manager, and they provided the cost estimates as well.

Rating	Installed	Design Life	Updated
2 - Poor	1985	0	MAR-14

Event: Add Isolation RoomsTo: ALC, 3N, 3S, 4W, 5E, 6E, &

Concern:
There are no isolation rooms on 8 impatient Units
Recommendation:
Add Isolation Rooms To: ALC, 3N, 3S, 4W, 5E, 6E, & 6W

Type	Year	Cost	Priority
Program Functional Upgrade	2013	$1,223,120	Unassigned

Updated: APR-12

Event: Expand Emergency Department

Concern:
Emergency Department is Undersized
Recommendation:
Expand Emergency Department

Type	Year	Cost	Priority
Program Functional Upgrade	2013	$3,261,651	Unassigned

Updated: APR-12

Event: Expand PT and OT Departments

Concern:
PT and OT have continued to expand and are are limited in available space to properly run their tasks.
Recommendation:
Expand PT and OT Departments

Type	Year	Cost	Priority
Program Functional Upgrade	2013	$5,504,037	Unassigned

Updated: APR-12

Event: Redevelop 3rd Floor West Wing

Concern:
Required for capacity expansion
Recommendation:
Renovate the existing area to accommodate new department

Type	Year	Cost	Priority
Program Functional Upgrade	2013	$1,019,266	Unassigned

Updated: APR-12

Event: Relocate the Biomeds and Reorganize the Maintenan

Concern:

The Maintenance and BioMedical Engineering Department have continued to expand and require more space to properly carry out all their responsibilities

Recommendation:

Relocate the Biomeds and Reorganize the Maintenance Shop.

Type	Year	Cost	Priority
Program Functional Upgrade	2013	$331,261	Unassigned

Updated: APR-12

K4010.01 Barrier Free Route: Parking to Entrance*

The short stay parking lot and the top level of the parking structure are at grade, and the sidewalks slope up gently to the main entrances.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

K4010.02 Barrier Free Entrances*

All staff and public entrances have automatic door operators.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

K4010.03 Barrier Free Interior Circulation*

Corridors are wide and unobstructed. Passenger elevators are provided to all levels of the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

K4010.04 Barrier Free Washrooms*

Barrier free washrooms are provided in public areas and in patient rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

K4020.01 Safety Code (Fall Prevention)*

There is no means of safe access to the roof of the EMS building.

Rating	Installed	Design Life	Updated
2 - Poor	1985	0	MAR-14

Event: Install safe access to the roof of the EMS building

Concern:
Currently there is no safe access to the roof of the EMS building. 2 areas have to be accessed which require a ladder and an access area from the inside of the building to the roof.
Recommendation:
Install safe access to the roof of the EMS building

Type	Year	Cost	Priority
Code Repair	2013	$32,665	High

Updated: MAR-14

K4030.01 Asbestos*

No asbestos was noted or reported during our site inspection.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

K4030.02 PCBs*

No PCB's were noted or reported during our site inspection.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

K4030.04 Mould*

No conditions supporting mould growth were noted or reported during our site inspection.

Rating	Installed	Design Life	Updated
4 - Acceptable	2012	0	MAR-14

Event: Complete Mold Remediation

Concern:
Continue with Mold Remediation when required

This element has been provided by the Hospital Facility Manager, and they provided the cost estimate as well.

Recommendation:
Complete Mold Remediation in Kitchen and Washrooms

We are advised by the Hospital Facility Manager that this work has been completed.

Type	Year	Cost	Priority
Hazardous Materials Abatement	2013	$20,385	Unassigned

Updated: MAR-14

K4030.06 Radioactive Compounds*

No uncontrolled radioactive materials were noted or reported during our site inspection.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

K4030.07 Ozone Depleting Substances (CFC's, HCFC's, Halon)*

No ozone depleting substances were noted or reported during our site inspection.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

K4030.08 Biohazardous Materials*

No other biohazardous materials were noted or reported during our site inspection.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

K4030.09 Other Hazardous Materials*

No other hazardous materials were noted or reported during our site inspection.

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	0	MAR-14

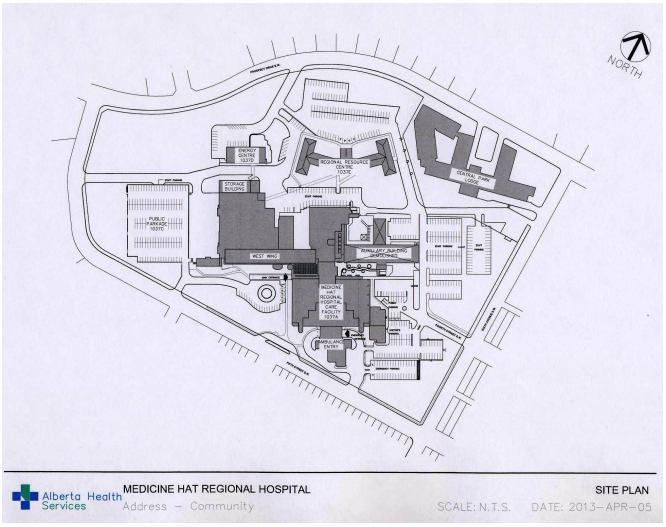
K5010.01 Site Documentation*

Site Plan drawing provided by Medicine Hat Regional Hospital.

Facility Inspection was completed on 26 - 27 September 2013.
Individuals present during the facility inspection:

- Don Stewart, DC Stewart Architect Limited
- Andrew Caller, Emans Smith Andersen Engineering
- Matt Tuff, SMP Engineering
- Gordon Werner, Medicine Hat Regional Hospital
- Kevin Durk, Medicine Hat Regional Hospital
- Fred Hall, Medicine Hat Regional Hospital
- Rod Groves, Medicine Hat Regional Hospital

Rating	Installed	Design Life	Updated
4 - Acceptable	2013	0	MAR-14



Site Plan - Medicine Hat Regional Hospital

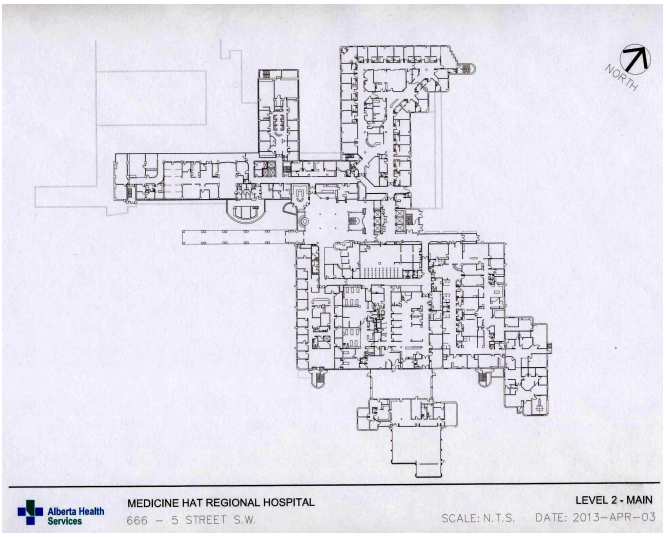
K5010.02 Building Documentation*

Floor Plan drawing provided by Medicine Hat Regional Hospital.

Facility Inspection was completed on 26 - 27 September 2013.
Individuals present during the facility inspection:

- Don Stewart, DC Stewart Architect Limited
- Andrew Caller, Emans Smith Andersen Engineering
- Matt Tuff, SMP Engineering
- Gordon Werner, Medicine Hat Regional Hospital
- Kevin Durk, Medicine Hat Regional Hospital
- Fred Hall, Medicine Hat Regional Hospital
- Rod Groves, Medicine Hat Regional Hospital

Rating	Installed	Design Life	Updated
4 - Acceptable	2013	0	MAR-14



Main Floor Plan - Medicine Hat Regional Hospital