RECAPP Facility Evaluation Report

Calgary Health Region

Foothills Medical Centre - Main Building

B0076A

Calgary

Report run on: April 11, 2011 10:55 AM

Facility Details

Building Name: Foothills Medical Centre - Ma
Address: 1403 - 29 Street N. W.
Location: Calgary

Building Id: B0076A
Gross Area (sq. m): 91,542.00
Replacement Cost: $808,386,468
Construction Year: 0

Evaluation Details

Evaluation Company: Golder Associates Ltd.
Evaluation Date: February 2 2011
Evaluator Name: Zay Anderson

Total Maintenance Events Next 5 years: **$27,298,600**
5 year Facility Condition Index (FCI): **3.38%**

General Summary:

The Foothills Medical Centre Main Building is a 13-storey building with approximately 900 overnight beds.
For the purpose of the report, the front of the building is considered to be facing east.
The original 91,182 m2 13-storey building (with basement and sub-basement) was constructed in 1966.
A 360 m2 single-storey penthouse addition was constructed in 2000.
The current gross building area is reported to be about 91,542 m2.

The building is generally in acceptable condition.

Structural Summary:

Structural drawings were not available for review at the time of this assessment. Component details throughout the report are based on information obtained from the site representatives and observations made during the site reconnaissance.
The building has a poured foundation consisting of cast in place (CIP) concrete spread footings, strip footings, and slab on grade.
The superstructure of the original 1966 Section consists of structural steel framing supporting structural steel floor joists and steel Q-Deck with a concrete topping.
The superstructure of the 1979 Addition consists of structural steel framing supporting structural steel floor joists and steel Q-Deck with a concrete topping.

The building structure is generally in acceptable condition.

Envelope Summary:

The exterior walls of the building are generally clad with brick veneer backed by precast concrete panels and steel framing. The rooftop penthouse is clad with corrugated metal siding.
The majority of the roofing consists of loose laid ballast EPDM membrane. The penthouse roof and the roof above Supply Management consists of modified bituminous membrane (SBS).
The exterior windows are steel framed fixed insulated glazed windows.
Exterior doors consist of steel storefronts, automatic doors, large overhead doors, and steel utility doors. All in steel frames.

The building envelope is generally in acceptable condition.

Interior Summary:

Interior flooring consists of sheet and tile vinyl flooring in most of the building; terrazzo in the main stairwells; ceramic tile in some washrooms; epoxy coated and painted concrete in the mechanical rooms; large stone slabs in the main lobby; hardwood in the doctors lounge; and carpet in office areas of the building.
Interior walls mainly consist of painted drywall; wall paper in the nursery and NICU; ceramic tile in most corridors and elevator lobbies; plastic wall panels in the operating rooms; large stone slabs in the main lobby; and painted concrete in the mechanical rooms.
Ceiling finishes are approximately 50% suspended T-bar with inlayed acoustic tile and 50% perforated metal tiles hanging from a track mounting system.
Interior entrance doors are glass storefronts in steel or aluminum frames with panic style hardware. Interior ward entrance doors are typically steel with automatic openers. Interior common doors are painted steel set in painted steel frames with a combination of standard hardware and lever style openers.

Interior finishes are generally in acceptable condition.

Mechanical Summary:

Steam, natural gas, domestic cold water, chilled water and pneumatics are all provided from the power plant building via service tunnel and enter the building in the lower level mechanical room.

Domestic hot water is generated by steam to water heat exchangers. Domestic water conditioning is provided by a water softener system. Domestic water distribution provided is typically insulated black iron and copper and waste water piping is a combination of black iron and ABS.

Heating is provided from steam to hot water heat and steam to glycol heat exchangers delivering hydronic heating to fan coil units and unit heaters and air handling units (AHUs) throughout.

Cooling is provided from chilled water provided to air handling units (AHUs) throughout.

Ventilation is by multiple air handling units providing ventilation and pressurization to interior spaces throughout. General and biohazard exhaust is provided by multiple axial and centrifugal exhaust fans throughout.

Fire suppression is provided by a sprinkler system and standpipes provided throughout with two fire pumps and control cabinet.

The mechanical systems are generally in acceptable overall condition.

Electrical Summary:

Electrical service to the building is supplied from the power plant building to a site based loop system providing redundant power and emergency power.

13.2 kV service from the ring main loop enters the special six main electrical rooms; three at the basement level and three at the penthouse level. Power is distributed throughout the building from these six rooms and they are all interconnected by bus tie breakers for back-up/redundancy. Primary power distribution in each room is provided by a series of main load break switchgears, fused load breaks transformers, and central distribution disconnects and CDPs.

Secondary distribution is provided by 120/208 volt low-voltage distribution panels throughout the building, providing normal power and emergency power service to switchboards, panelboards and splitters throughout. Electrical branch circuit panelboards throughout provide normal and emergency power throughout. Electrical branch wiring in the building is standard wire in conduit. Flexible conduit and cable are provided for final connections to mechanical equipment.

Motor Control Centers and multiple individual motor starters and variable frequency drives provide service for various mechanical equipment throughout.

Interior lighting is provided by incandescent light fixtures, T12 fluorescent lamps with magnetic ballasts and T8 fluorescent lamps with electronic ballasts throughout. Exterior lighting is provided by high pressure sodium fixtures around the building perimeter. Emergency lighting is provided by emergency power supplied to a portion of the fluorescent lighting throughout and emergency battery packs with integral and remote heads. Emergency exit signs are a combination of LED and digital LCD fixtures throughout.

Security access is controlled by proximity card readers and keypads to select floor areas.

Two UPS systems provide limited emergency power to sensitive equipment throughout. Emergency power is supplied from three emergency generators (only one of which, Generator#1, is located in this building).

The electrical systems are generally in acceptable overall 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*

CIP concrete strip footings supporting perimeter and load bearing walls.
CIP concrete spread footings supporting structural steel columns and/or large mechanical components.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

A1030 Slab on Grade*

Concrete slab on grade throughout the lowest levels of the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

A2020 Basement Walls (& Crawl Space)*

Basement walls are a combination of CIP concrete and CMU construction.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

B1010.01 Floor Structural Frame (Building Frame)*

Structural steel frame supporting Q-Deck with lightweight concrete topping.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

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

Structural steel framing throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

B1010.03 Floor Decks, Slabs, and Toppings*

Steel Q-Deck with lightweight concrete topping.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

B1010.05 Mezzanine Construction*

Mezzanines in mechanical rooms and penthouses are typically steel framed with grated steel floors.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

B1010.09 Floor Construction Fireproofing*

Non-combustible building materials used for floor construction.
Spray on fire resistant coating in high risk areas such as mechanical and electrical rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

B1010.10 Floor Construction Firestopping*

Flexible ULC rated fire stops at all floor penetrations.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

B1010.11 Other Floor Construction*

Various steel framed catwalks in mechanical penthouse.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

B1020.01 Roof Structural Frame*

Structural steel frame supporting Q-Deck with lightweight concrete topping.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

B1020.02 Structural Interior Walls Supporting Roofs*

Load bearing interior walls structural steel framing.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

B1020.03 Roof Decks, Slabs, and Sheathing*

Steel Q-Deck with lightweight concrete topping.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

B1020.04 Canopies*

Steel framed canopy at main entrance.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

B1020.05 Roof Construction Vapor Retarders, Air Barriers, and Insulation*

Concealed.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

B1020.06 Roof Construction Fireproofing*

Non-combustible building materials used for roof construction.
Spray on fire resistant coating in high risk areas such as mechanical and electrical rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

B1020.07 Roof Construction Firestopping*

Flexible ULC rated fire stops at all roof penetrations.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

S2 ENVELOPE

B2010.01.01 Precast Concrete: Exterior Wall Skin*

Exposed colored precast concrete panels at the end of each wing of the building.
Precast concrete panels clad with brick veneer on the majority of the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	75	APR-11

B2010.01.02.01 Brick Masonry: Ext. Wall Skin*

The majority of the building is clad with brick veneer on precast concrete panels.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	75	APR-11

B2010.01.03 Stone Assemblies: Exterior Wall Skin*

Stone slab cladding at main entrance vestibule.

Rating	Installed	Design Life	Updated
5 - Good	2000	0	APR-11

B2010.01.06.03 Metal Siding**

Various sections of the rooftop penthouses are clad with metal siding.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	40	APR-11

Event: Replace Metal Siding (~1600 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2040	$489,100	Unassigned

Updated: APR-11

B2010.01.09 Expansion Control: Exterior Wall Skin*

Expansion joints are located between all precast concrete panels.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	75	APR-11

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

Polyurethane joint sealers at all material transitions and at all expansion joints.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	20	APR-11

Event: Replace Joint Sealers (~15,000 m)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$448,700	Unassigned

Updated: APR-11

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

Painted concrete sections between windows on the exterior of the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	15	APR-11

Event: Repaint Exterior Wall Sections (~3620 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$71,700	Unassigned

Updated: APR-11

B2010.02.01 Cast-in-place Concrete: Ext. Wall Const*

Sections of the lower levels of the building are CIP concrete construction.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

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

The majority of the building is constructed using structural steel framing.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

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

Concealed.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

B2010.05 Parapets*

Parapets clad with metal flashing at various locations of the roof.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

B2010.06 Exterior Louvers, Grilles, and Screens*

Painted and unpainted metal louvers and grilles throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

B2010.09 Exterior Soffits*

Decorative concrete soffits at main entrance.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

B2020.01.01.01 Steel Windows (Glass & Frame)**

Steel framed insulated double glazed units on all building sections.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	40	APR-11

Event: Replace Steel Windows (~3620 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$3,816,000	Unassigned

Updated: APR-11

B2030.01.06 Automatic Entrance Doors**

Sensor equipped automatic entrance doors at the main and emergency entrances.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace Automatic Doors (~3 Units)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$61,200	Unassigned

Updated: APR-11

B2030.02 Exterior Utility Doors**

Painted steel utility doors in painted steel frames at various ground level locations throughout the building exterior.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	40	APR-11

Event: Replace Exterior Utility Doors (~31 Units)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$27,800	Unassigned

Updated: APR-11

B2030.03 Large Exterior Special Doors (Overhead)*

Large steel insulated overhead doors at the Supply Management and Waste Management areas on the basement level.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

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

Modified bituminous membrane roofing on the penthouse roof, the Waste and Supply Management roof, and the Emergency (trauma) roof.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	25	APR-11

Event: Replace Modified Biuminous Membrane Roofing (~1500 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2025	$275,300	Unassigned

Updated: APR-11

B3010.04.05 Membrane Roofing (Single Ply, EPDM, PVC, TPO)**

Loose laid ballast EPDM roofing on each wing of the building and most of the protruding sections of the main floor.

Rating	Installed	Design Life	Updated
3 - Marginal	1966	25	APR-11

Event: Replace EPDM Membrane Roofing with SBS Roofing (~7600 m2)

Concern:

Roof has exceeded its expected lifetime, areas with insufficient ballast rock were observed, and leaks are become more frequent. The site representative reported that the building had been approved for $1,200,000 in roof replacements.

Recommendation:

Replace EPDM roofing.

It is recommended that the EPDM roofing be replaced with modified bituminous membrane (SBS) roofing.

The cost has been adjusted for the replacement with SBS roofing.

Type	Year	Cost	Priority
Failure Replacement	2011	$1,394,800	High

Updated: APR-11

B3010.05 Traffic Coatings: Exterior**

Painted crosswalk at main entrance and at emergency entrance. Repainting cost <$1,000.

Rating	Installed	Design Life	Updated
5 - Good	2005	15	APR-11

B3020.01 Skylights**

Skylights located in the ICU. Site representative reported that the skylights are being removed with roof replacement (refer B3010.04.05).

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	25	APR-11

Event: Replace Skylights (~225 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$550,000	Unassigned

Updated: APR-11

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

Soil vents, mechanical curbs, and roof drains on all roof sections.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	25	APR-11

S3 INTERIOR

C1010.01 Interior Fixed Partitions*

Likely steel or wood framed with GWB.
Painted/unpainted CIP concrete and painted/unpainted CMU partitions in the main kitchen; lower level mechanical rooms; and some lower level storage areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

C1010.02 Interior Demountable Partitions*

Demountable partitions at nursing stations and group offices throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

C1010.04 Interior Balustrades and Screens, Interior Railings*

Painted steel pipe railings at mechanical room mezzanines throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	40	APR-11

C1010.05 Interior Windows*

Interior windows at nursing stations,. Interview rooms, offices, and observation rooms throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	80	APR-11

C1010.06 Interior Glazed Partitions and Storefronts*

Interior glazed partition in the physiotherapy/rehabilitation room.
Interior glazed storefronts at main entrance, emergency entrance, and at various high traffic entrances throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	80	APR-11

C1010.07 Interior Partition Firestopping*

ULC rated firestops at all interior partition penetrations.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

C1020.01 Interior Swinging Doors (& Hardware)*

Patient rooms are typically solid wood doors in painted steel frames with lever type handsets in renovated areas and standard hardware in original areas.
Doors at entrances to wards are typically steel doors in steel frames with push button actuated automatic openers.
Doors to stairwells are typically fire rated assemblies with panic hardware.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	40	APR-11

C1020.02 Interior Entrance Doors*

Metal doors with glazed sections and panic hardware in metal frames.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

C1020.03 Interior Fire Doors*

ULC fire rated assemblies at all wing entrances and stairwells.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

C1020.04 Interior Sliding and Folding Doors*

Large, aluminum framed glazed sliding security doors at isolation rooms in the Psychology Ward.
Large, aluminum framed glazed sliding doors in Diagnostic Imaging and ICU areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	25	APR-11

C1030.01 Visual Display Boards**

Various white boards and tack boards throughout the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	20	APR-11

Event: Replace Whiteboards (~100 Units)

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$147,400	Unassigned

Updated: APR-11

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

Fabricated toilet partitions at all public washrooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace Toilet/Shower Partitions (~50 Units)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$66,500	Unassigned

Updated: APR-11

C1030.05 Wall and Corner Guards*

Plastic and stainless steel corner guards throughout the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	15	APR-11

C1030.06 Handrails*

Handrails throughout the building corridors are a combination of painted/stained wood; wood with resilient plastic coatings; and painted metal with resilient plastic coatings.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	40	APR-11

C1030.08 Interior Identifying Devices*

Pedestrian traffic signage, room name/number signage, ward designation signage, and other miscellaneous signage throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	20	APR-11

C1030.10 Lockers**

1/2 size lockers located near the elevators on the majority of the floors of the building.
1/2 size lockers located in staff change rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace Lockers (~2540 Units)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$935,000	Unassigned

Updated: APR-11

C1030.11 Postal Boxes and Chutes*

Dumb-weighted elevators are used to convey mail and other packages between floors.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

C1030.12 Storage Shelving*

Various painted wood and metal storage shelving located throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

C1030.14 Toilet, Bath, and Laundry Accessories*

Mirrors, liquid soap dispensers, waste baskets, paper and toilet paper dispensers and holders are provided in public, patient, and common washrooms throughout.
Shower curtains, curtain rods, and towel holders are provided in some patient washrooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	20	APR-11

C1030.16 Wardrobe and Closet Specialties*

Nurse and doctor scrub/uniform distribution facility on the basement level.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

C2010 Stair Construction*

Concrete stairs with terrazzo finish and ceramic tile wear guards finished with brushed stainless steel handrails and glass inserts.
Painted concrete stairs and painted steel stairs in mechanical penthouse and mechanical rooms throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

C2020.01 Tile Stair Finishes*

Ceramic tile wear guards on high traffic staircases.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	60	APR-11

C2020.02 Terrazzo Stair Finishes*

Terrazzo finishes on all high traffic staircases.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	60	APR-11

C2020.05 Resilient Stair Finishes**

Resilient heavy duty rubber on the staircase at the Seimens MRI office.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	20	APR-11

Event: Replace Rubber Stair Finish (~20 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$1,700	Unassigned

Updated: APR-11

C2020.08 Stair Railings and Balustrades*

Main staircase handrails consist of floor/wall mounted brushed aluminum with a rubber topping and a combination of aluminum and glass panels.
Other staircase handrails consist of floor/wall mounted painted steel pipe.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	40	APR-11

C3010.01 Concrete Wall Finishes (Unpainted)*

Sections of unpainted concrete wall finishes in various mechanical rooms throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	100	APR-11

C3010.02 Wall Paneling**

Rigid plastic panels on Operating Room walls.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	30	APR-11

Event: Replace Plastic Wall Panel (~410 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2030	$37,500	Unassigned

Updated: APR-11

C3010.06 Tile Wall Finishes**

Tile ceramic wall finishes throughout various corridors, utility rooms, washrooms, and shower rooms.
Tile ceramic wall finish throughout the main kitchen.
Tile ceramic wall finish in cart washing room in basement.
Tile ceramic wall finishes at elevator lobbies throughout (except main floor).

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	40	APR-11

Event: Replace Wall Tile (~12,350 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$3,301,300	Unassigned

Updated: APR-11

C3010.08 Stone Facing Wall Finishes: Interior*

Large stone slab wall tiles in the main floor lobby and elevator lobby.
Large stone slab wall tiles on section of wall in ambulance parking garage.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	100	APR-11

C3010.10 Wall Carpet*

0.6 m high wall carpet along corridors in Unit 112.

Rating	Installed	Design Life	Updated
4 - Acceptable	1985	0	APR-11

C3010.11 Interior Wall Painting*

Painted GWB throughout.

Rating	Installed	Design Life	Updated
3 - Marginal	1966	10	APR-11

Event: Repaint Localized Wall Damage (Allowance)

Concern:
Localized areas throughout the building with minor wall damage.
Recommendation:
Patch and repaint localized areas with minor wall damage.

Type	Year	Cost	Priority
Repair	2011	$5,000	Medium

Updated: APR-11

C3010.12 Wall Coverings*

Various localized areas with wall paper.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	15	APR-11

C3010.13 Wall Trim and Decoration*

cin most patient rooms, offices, main floor lobby, and in various corridors throughout.
Tapered terrazzo molding at base of wall along corridors and in other high traffic areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	1995	0	APR-11

C3020.01.01 Epoxy Concrete Floor Finishes*

Epoxy floor finish in mechanical penthouse and basement mechanical rooms.
Epoxy floor finish in elevator machine rooms.

Rating	Installed	Design Life	Updated
3 - Marginal	1966	0	APR-11

Event: Repalce Epoxy Floor Coating (~1100 m2)

Concern:
Epoxy floor finishes in mechanical rooms have worn/deteriorated and are in need of refinishing.

Recommendation:
Replace epoxy coating on mechanical room floors.

Type	Year	Cost	Priority
Failure Replacement	2012	$185,400	Low

Updated: APR-11

C3020.01.02 Paint Concrete Floor Finishes*

Painted concrete pads for mechanical and electrical components in mechanical rooms throughout.
Painted concrete floors in some service tunnels.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	10	APR-11

C3020.02 Tile Floor Finishes**

Ceramic tile floor finishes in washrooms, handicap shower areas, and various small localized areas throughout.

Rating	Installed	Design Life	Updated
3 - Marginal	1966	50	APR-11

Event: Repair Localized Damage to Floor Tile (~10 m2)

Concern:
Individual tiles (or groups of tiles) are broken or have become dislodged throughout the building.
Recommendation:
Repair/replace broken and dislodged tiles.

Type	Year	Cost	Priority
Repair	2012	$1,800	Medium

Updated: APR-11

Event: Replace Tile Floors (~590 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$103,700	Unassigned

Updated: APR-11

C3020.03 Terrazzo Floor Finishes*

Terrazzo flooring in the majority of the corridors; at landings throughout the main staircases; and in the preparation area of the kitchen.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	75	APR-11

C3020.04 Wood Flooring**

Wood flooring in the doctors lounge area.

Rating	Installed	Design Life	Updated
5 - Good	2008	30	APR-11

Event: Replace Wood Flooring (~25 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2038	$6,500	Unassigned

Updated: APR-11

C3020.05 Stone Flooring*

Large quarry slab flooring at the main floor lobby and main floor elevator lobby.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	0	APR-11

C3020.07 Resilient Flooring**

Vinyl flooring throughout many of the corridors, patient rooms, nursing stations, elevator lobbies, washrooms, and janitors rooms.
Approximately 50% sheet vinyl and 50% vinyl tile.

Rating	Installed	Design Life	Updated
4 - Acceptable	1995	20	APR-11

Event: Replace Sheet Vinyl (~30,685 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2015	$2,589,700	Unassigned

Updated: APR-11

Event: Replace Vinyl Tile (~30,685 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2015	$1,630,800	Unassigned

Updated: APR-11

C3020.08 Carpet Flooring**

Most offices and staff/patient/visitor lounges throughout the building are carpeted.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	15	APR-11

Event: Replace Carpet (~20,550 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2015	$1,401,400	Unassigned

Updated: APR-11

C3020.13 Traffic Coating: Interior**

Different colored lines have been painted on the corridor floors to direct patients to different units and rooms throughout each floor.

Rating	Installed	Design Life	Updated
4 - Acceptable	1995	25	APR-11

Event: Repaint Lines on Floor (Allowance)

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$20,000	Unassigned

Updated: APR-11

C3020.14 Other Floor Finishes*

Raised vinyl tile flooring in the computer mainframe room to allow for the cooling units below.

Rating	Installed	Design Life	Updated
3 - Marginal	2000	20	APR-11

Event: Repair Sections of Lifted Tile (~10 m2)

Concern:
Some of the vinyl tiles in the computer mainframe room have began to lift.
Recommendation:
Replace the lifting tiles in the computer mainframe room.

Type	Year	Cost	Priority
Repair	2011	$1,000	Medium

Updated: APR-11

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

The majority of the ceiling finishes are suspended T-bar frame with inlayed acoustic tiles.

Rating	Installed	Design Life	Updated
4 - Acceptable	1995	25	APR-11

Event: Replace Inlayed Acoustil Ceiling Tiles (~41,194 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$1,905,100	Unassigned

Updated: APR-11

C3030.09 Other Ceiling Finishes*

Perforated painted metal track style tile ceiling in most elevator lobbies and some corridors.

Rating	Installed	Design Life	Updated
3 - Marginal	1966	50	APR-11

Event: Replace Metal Tiles with Acoustic T-Bar (~41,194 m2)

Concern:
Metal tiles supported by a track system are original and are severely discolored with many damaged tiles and tracks.

Recommendation:
Replace metal tiles and track with inlayed acoustic T-bar system.

Type	Year	Cost	Priority
Failure Replacement	2011	$1,905,100	Medium

Updated: APR-11

D1010.01.01 Electric Traction Passenger Elevators**

12 hydraulic passenger elevators.
6 are for staff only and run from the basement to the 12th floor.
6 are for the public and run from the basement to the 12th floor.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace Traction Elevators (12 Units)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$2,202,400	Unassigned

Updated: APR-11

D1010.01.02 Hydraulic Passenger Elevators**

WAITNG FOR DEO TO GET BACK TO ME. I don't know where this elevator is..... I cant find it on the drawing or in the pics but he told me that it was present during the interview.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace One Hydraulic Elevator

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$75,700	Unassigned

Updated: APR-11

D1010.01.03 Electric Traction Freight Elevators**

Electric traction freight elevator located at the west end of the clinical wing. The elevator runs from the basement level to the penthouse level.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace One Traction Freight Elevator

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$183,600	Unassigned

Updated: APR-11

D1090 Other Conveying Systems*

Ceiling mounted patient lifts in some of the patient rooms.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	0	APR-11

S4 MECHANICAL

D2010.04 Sinks** - 1966 Stainless Steel Service Sinks

Single-basin, double-basin and trough style stainless steel (S/S) service sinks are provided throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace ~250 Stainless Steel Service Sinks

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$431,600	Unassigned

Updated: APR-11

D2010.04 Sinks** - 2001 Stainless Steel Service Sinks

Single-basin, double-basin and trough style stainless steel (S/S) service sinks are provided throughout. Estimated 50% replacements have occurred due to attrition and renovations since original construction.

Rating	Installed	Design Life	Updated
5 - Good	2001	30	APR-11

Event: Replace ~257 Stainless Steel Service Sinks

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$443,700	Unassigned

Updated: APR-11

D2010.04 Sinks** - Iron Enamel Service Sinks

Iron enamel service sinks are provided in housekeeping and mechanical rooms throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace ~24 Iron Enamel Service Sinks

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$58,800	Unassigned

Updated: APR-11

D2010.04 Sinks** - Vitreous China Service Sinks

Oversize vitreous china service sinks are provided in operating room prep. spaces, housekeeping spaces and utility rooms throughout.

Rating	Installed	Design Life	Updated
5 - Good	2001	30	APR-11

Event: Replace ~65 Vitreous China Service Sinks

Concern:
Oversized vitreous china service sinks and surgery scrub sinks are provided in housekeeping closets, clinical prep. Spaces and operating room spaces throughout.

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$79,600	Unassigned

Updated: APR-11

D2010.05 Showers** - 1966

Wall mounted shower heads and valves are provided in shower stalls throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace ~87 Shower Heads and Valves

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$43,900	Unassigned

Updated: APR-11

D2010.05 Showers** - 2001

Wall mounted shower heads and valves are provided in shower stalls throughout. Estimated 50% replacements have occurred due to attrition and renovations since original construction.

Rating	Installed	Design Life	Updated
5 - Good	2001	30	APR-11

Event: Replace ~87 Shower Heads and Valves

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$43,900	Unassigned

Updated: APR-11

D2010.06 Bathtubs** - 1966

Wall mounted bath & shower heads and control valves are provided with enamel steel tubs in patient rooms throughtout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace ~187 Bathtubs and Valves

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$372,100	Unassigned

Updated: APR-11

D2010.10 Washroom Fixtures (WC, Lav, Urnl)** - 1966

~265 vitreous china lavatories.
~41 flush tank toilets.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	35	APR-11

Event: Replace ~265 Lavatories and ~41 Toilets

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$400,800	Unassigned

Updated: APR-11

D2010.10 Washroom Fixtures (WC, Lav, Urnl)** - 1995

~ 211 flush valve toilets. Estimated ~50% replacement has occurred due to attrition and renovations since original construction.

Rating	Installed	Design Life	Updated
5 - Good	1995	35	APR-11

Event: Replace ~211 Toilets

Type	Year	Cost	Priority
Lifecycle Replacement	2030	$399,800	Unassigned

Updated: APR-11

D2010.10 Washroom Fixtures (WC, Lav, Urnl)** - 2001

~265 vitreous china lavatories.
~211 flush valve toilets.
~8 flush valve urinals.

Estimated ~50% replacement has occurred due to attrition and renovations since original construction.

Rating	Installed	Design Life	Updated
5 - Good	2001	35	APR-11

Event: Replace ~265 Lavatories, ~211 Toilets and 8 Urinals

Type	Year	Cost	Priority
Lifecycle Replacement	2036	$821,700	Unassigned

Updated: APR-11

D2020.01.01 Pipes and Tubes: Domestic Water*

Black iron main service from the power plant with black iron and copper distribution piping throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	40	APR-11

D2020.01.02 Valves: Domestic Water** - 1966

Isolation valves on water distribution throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	40	APR-11

Event: Replace ~350 Isolation Valves

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$411,700	Unassigned

Updated: APR-11

D2020.01.02 Valves: Domestic Water** - 1995

Isolation valves on water distribution throughout. Replacements have occurred since the original construction due to equipment attrition, repairs and renovations throughout.

Rating	Installed	Design Life	Updated
5 - Good	1995	40	APR-11

Event: Replace ~350 Isolation Valves

Type	Year	Cost	Priority
Lifecycle Replacement	2035	$411,700	Unassigned

Updated: APR-11

D2020.01.02 Valves: Domestic Water** - 2001

Isolation valves on water distribution throughout. Replacements have occurred since the original construction due to equipment attrition, repairs and renovations throughout.

Rating	Installed	Design Life	Updated
5 - Good	2001	40	APR-11

Event: Replace ~350 Isolation Valves

Type	Year	Cost	Priority
Lifecycle Replacement	2041	$411,700	Unassigned

Updated: APR-11

D2020.01.03 Piping Specialties (Backflow Preventors)** - 1990

~300 backflow preventors were reported throughout the building on water lines for various equipment feed connections and fire system connections. Approximately 25% replacement every 5 years was reported. There is no irrigation system connection present.

Rating	Installed	Design Life	Updated
4 - Acceptable	1990	20	APR-11

Event: Replace ~75 Backflow Preventors

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$233,800	Unassigned

Updated: APR-11

D2020.01.03 Piping Specialties (Backflow Preventors)** - 1995

~300 backflow preventors were reported throughout the building on water lines for various equipment feed connections and fire system connections. Approximately 25% replacement every 5 years was reported. There is no irrigation system connection present.

Rating	Installed	Design Life	Updated
4 - Acceptable	1995	20	APR-11

Event: Replace ~75 Backflow Preventors

Type	Year	Cost	Priority
Lifecycle Replacement	2015	$233,800	Unassigned

Updated: APR-11

D2020.01.03 Piping Specialties (Backflow Preventors)** - 2000

~300 backflow preventors were reported throughout the building on water lines for various equipment feed connections and fire system connections. Approximately 25% replacement every 5 years was reported. There is no irrigation system connection present.

Rating	Installed	Design Life	Updated
5 - Good	2000	20	APR-11

Event: Replace ~75 Backflow Preventors

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$233,800	Unassigned

Updated: APR-11

D2020.01.03 Piping Specialties (Backflow Preventors)** - 2005

~300 backflow preventors were reported throughout the building on water lines for various equipment feed connections and fire system connections. Approximately 25% replacement every 5 years was reported. There is no irrigation system connection present.

Rating	Installed	Design Life	Updated
5 - Good	2005	20	APR-11

Event: Replace ~75 Backflow Preventors

Type	Year	Cost	Priority
Lifecycle Replacement	2025	$233,800	Unassigned

Updated: APR-11

D2020.02.02 Plumbing Pumps: Domestic Water** - 1966

In the centre wing lower mechanical room there are:
3 - Armstrong 11.4 l/s domestsic water pumps to the high rise heat exchangers
3 - Armstrong 8.8 l/s domestic water pumps to the low rise heat exchangers.
1 - Armstrong 50.0 HP domestic hot water (DHW) pump.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	20	APR-11

Event: Replace 7 Domestic Water Pumps

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$96,000	Unassigned

Updated: APR-11

D2020.02.02 Plumbing Pumps: Domestic Water** - 1979

Two Aurora 300 gpm domestic water pumps are located in the Food Services Department.

Rating	Installed	Design Life	Updated
4 - Acceptable	1979	20	APR-11

Event: Replace 2 Domestic Water Pumps

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$18,700	Unassigned

Updated: APR-11

D2020.02.02 Plumbing Pumps: Domestic Water** - 1996

One Grundfos 3.0 HP DHW pump is located in the centre wing lower mechanical room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1996	20	APR-11

Event: Replace 1 Domestic Water Pump

Type	Year	Cost	Priority
Lifecycle Replacement	2016	$6,900	Unassigned

Updated: APR-11

D2020.02.02 Plumbing Pumps: Domestic Water** - 2008

A domestic water metering pump is located in the Food Services Department on the domestic water softener system.

Rating	Installed	Design Life	Updated
5 - Good	2008	20	APR-11

Event: Replace 1 Domestic Water Pump

Type	Year	Cost	Priority
Lifecycle Replacement	2028	$1,300	Unassigned

Updated: APR-11

D2020.02.04 Domestic Water Conditioning Equipment** - Food service

A domestic water softener system is located in the Food Services Department.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	20	APR-11

Event: Replace 1 Domestic Water Softener

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$2,100	Unassigned

Updated: APR-11

D2020.02.04 Domestic Water Conditioning Equipment** - Main

Two low rise ~2800 L water softener tanks, two high rise ~3400 L water softener tanks and one ~4400 L brine storage tank are provided in the lower mechanical room.

Rating	Installed	Design Life	Updated
5 - Good	2001	20	APR-11

Event: Replace 4 Water Softeners Tanks and 1 Brine Tanks

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$47,200	Unassigned

Updated: APR-11

D2020.02.06 Domestic Water Heaters**

Two ~9400 L domestic water heaters are provided in the lower mechanical room - one low rise and one high rise.

Rating	Installed	Design Life	Updated
5 - Good	2001	20	APR-11

Event: Replace 2 Domestic Heaters

Type	Year	Cost	Priority
Lifecycle Replacement	2021	$59,600	Unassigned

Updated: APR-11

D2020.03 Water Supply Insulation: Domestic*

Glass fiber and cementitious pipe insulation provided throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	40	APR-11

D2030.01 Waste and Vent Piping*

The building's black iron and ABS waste piping is connected to the main sewer lines to the site which are connected to the municipal system. Vent piping is through the roof.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	50	APR-11

D2030.02.04 Floor Drains*

Floor drains are located in mechanical rooms, washrooms and other service spaces throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

D2030.03 Waste Piping Equipment*

Two sanitary pumps and two duplex (4 pumps) sump pumps are provided in pits in each of the the northwest and southwest lower mechanical rooms. Concealed.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

D2040.01 Rain Water Drainage Piping Systems*

Roof drains connect to internal rain water leaders that connect to the the site storm water system which connects to the municipal storm water system.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

D2040.02.04 Roof Drains*

Strainer roof drains connect to internal rain water leaders.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	40	APR-11

D2090.10 Nitrous Oxide Gas Systems**

Nitrous oxide gas outlets and medical gas alarm panels are provided in operating room critical care and and trauma areas. Portable bottles with manifold are located in the lower level mechanical room.

Rating	Installed	Design Life	Updated
4 - Acceptable	2001	30	APR-11

Event: Replace ~34 Outlets and ~22 Alarm Panels

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$65,000	Unassigned

Updated: APR-11

D2090.11 Oxygen Gas Systems**

Oxygen gas distribution is provided to patient rooms and clinical/patient care spaces throughout the building. Portable bottles with manifold are located in the lower level mechanical room. A large above ground liquid oxygen storage vessel is located outside the building which is leased to the site and is therefore beyond the scope of this report.

Rating	Installed	Design Life	Updated
5 - Good	2001	30	APR-11

Event: Replace Oxygen Gas Systems (~5300 m)

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$445,300	Unassigned

Updated: APR-11

D2090.13 Vacuum Systems (Medical)**

The Busch Vacuum Systems medical vacuum system complete with four pumps and two storage tanks provides service to patient rooms and clinical/patient care spaces throughout the building.

Rating	Installed	Design Life	Updated
5 - Good	2004	30	APR-11

Event: Replace 1 Medical Vacuum System

Type	Year	Cost	Priority
Lifecycle Replacement	2034	$33,800	Unassigned

Updated: APR-11

D2090.16 Medical Air System*

Medical air distribution is provided to patient rooms and clinical/patient care spaces with flow control, monitoring and shut-off stations throughout the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	0	APR-11

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

~500 gallon fuel oil storage tank with spill containment is provided for Generator #1 in Generator #1 room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1989	0	APR-11

D3020.04.03 Fuel-Fired Unit Heaters**

A Young natural gas fired unit heater is provided in the generator room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1989	30	APR-11

Event: Replace 1 Unit Heater

Type	Year	Cost	Priority
Lifecycle Replacement	2019	$3,500	Unassigned

Updated: APR-11

D3020.04.04 Chimney (& Comb. Air): Fuel-Fired Heater*

Direct vent chimney is provided for the natural gas unit heater.

Rating	Installed	Design Life	Updated
4 - Acceptable	1989	0	APR-11

D3030.06.02 Refrigerant Condensing Units**

Two R22 refrigerant condensing units are located in the lower level mechanical room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	25	APR-11

Event: Replace 2 Refrigerant Condensing Units

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$12,200	Unassigned

Updated: APR-11

D3040.01.01 Air Handling Units: Air Distribution** - 1966

Engineered Air and Haakon air handling units provide tempered air ventilation to interior spaces throughout. Air is tempered by assorted combinations of chilled water, heated glycol and steam (humidification).

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace ~7 Air Handling Units

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$210,100	Unassigned

Updated: APR-11

D3040.01.01 Air Handling Units: Air Distribution** - 1997

Engineered Air and Haakon air handling units provide tempered air ventilation to interior spaces throughout. Air is tempered by assorted combinations of chilled water, heated glycol and steam (humidification). Replacements have occurred and new units added due to attrition and ongoing renovations since the original construction.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

Event: Replace ~7 Air Handling Units

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$210,100	Unassigned

Updated: APR-11

D3040.01.01 Air Handling Units: Air Distribution** - 2008

Engineered Air and Haakon air handling units provide tempered air ventilation to interior spaces throughout. Air is tempered by assorted combinations of chilled water, heated glycol and steam (humidification). Replacements have occurred and new units added due to attrition and ongoing renovations since the original construction.

Rating	Installed	Design Life	Updated
5 - Good	2008	30	APR-11

Event: Replace ~7 Air Handling Units

Type	Year	Cost	Priority
Lifecycle Replacement	2038	$210,100	Unassigned

Updated: APR-11

D3040.01.02 Fans: Air Distribution (Remote from AHU)*

Supply fans, return air fans and make-up air fans are provided throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

D3040.01.03 Air Cleaning Devices: Air Distribution*

HEPA filters, disposable cellulose fibre and other filter packs for air handling units and exhaust fans throughout. Filters are reported to be on a regular maintenance program.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

D3040.01.04 Ducts: Air Distribution*

The air distribution system includes ducting for fresh air, return air, supply air and exhaust air. Exhaust air ducting includes general building exhausts as well as local exhausts. The duct systems include duct work, dampers, diffusers and other related components.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

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

Concealed. It was reported that there is one variable air volume (VAV) per three patient rooms in addition to VAVs provided for public, administrative, clinical and service spaces throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

Event: Replace ~200 VAV Boxes

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$223,100	Unassigned

Updated: APR-11

D3040.01.07 Air Outlets & Inlets: Air Distribution*

The air outlets and inlets are of varying types and include air diffusers, dampers and supply and return air grilles.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

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

Steam distribution is provided to penthouse and lower level mechanical rooms and includes piping, isolation valves, pressure reduction valves, steam traps, condensate return piping and condensate return pumps.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	40	APR-11

Event: Replace Steam Distribution Systems (~13,000 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2037	$1,209,000	Unassigned

Updated: APR-11

D3040.03.01 Hot Water Distribution Systems** - 1980

Heating hot water distribution is provided to terminal heating devices throughout. Related accessories include a variety of circulation pumps, expansion tanks and filters.

Rating	Installed	Design Life	Updated
4 - Acceptable	1980	40	APR-11

Event: Replace Hot Water Distribution Systems (~30,514 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$2,837,900	Unassigned

Updated: APR-11

D3040.03.01 Hot Water Distribution Systems** - 1997

Heating hot water distribution is provided to terminal heating devices throughout. Related accessories include a variety of circulation pumps, expansion tanks and filters.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	40	APR-11

Event: Replace Hot Water Distribution Systems (~30,514 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2037	$2,837,900	Unassigned

Updated: APR-11

D3040.03.01 Hot Water Distribution Systems** - 2001

Heating hot water distribution is provided to terminal heating devices throughout. Related accessories include a variety of circulation pumps, expansion tanks and filters.

Rating	Installed	Design Life	Updated
4 - Acceptable	2001	40	APR-11

Event: Replace Hot Water Distribution Systems (~30,514 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2041	$2,837,900	Unassigned

Updated: APR-11

D3040.03.02 Chilled Water Distribution Systems** -1980

Chilled water distribution is provided to terminal devices throughout. Related accessories include a variety circulation pumps and expansion tanks.

Rating	Installed	Design Life	Updated
4 - Acceptable	1980	40	APR-11

Event: Replace Chilled Water Distribution Systems (~22,885 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2020	$1,165,100	Unassigned

Updated: APR-11

D3040.03.02 Chilled Water Distribution Systems** - 1997

Chilled water distribution is provided to terminal devices throughout. Related accessories include a variety circulation pumps and expansion tanks.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	40	APR-11

Event: Replace Chilled Water Distribution Systems (~22,885 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2037	$1,165,100	Unassigned

Updated: APR-11

D3040.03.02 Chilled Water Distribution Systems** - 2001

Chilled water distribution is provided to terminal devices throughout. Related accessories include a variety circulation pumps and expansion tanks.

Rating	Installed	Design Life	Updated
5 - Good	2001	40	APR-11

Event: Replace Chilled Water Distribution Systems (~22,885 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2041	$1,165,100	Unassigned

Updated: APR-11

D3040.03.02 Chilled Water Distribution Systems** - 2010

Chilled water distribution is provided to terminal devices throughout. Related accessories include a variety circulation pumps and expansion tanks.

Rating	Installed	Design Life	Updated
5 - Good	2010	40	APR-11

Event: Replace Chilled Water Distribution Systems (~22,885 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2050	$1,165,100	Unassigned

Updated: APR-11

D3040.04.01 Fans: Exhaust** - 1980

General building and biohazard exhaust fans are provided throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1980	30	APR-11

Event: Replace Exhaust Fans (30,514 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$488,600	Unassigned

Updated: APR-11

D3040.04.01 Fans: Exhaust** - 1997

General building and biohazard exhaust fans are provided throughout.

Rating	Installed	Design Life	Updated
5 - Good	1997	30	APR-11

Event: Replace Exhaust Fans (30,514 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$488,600	Unassigned

Updated: APR-11

D3040.04.01 Fans: Exhaust** - 2001

General building and biohazard exhaust fans are provided throughout.

Rating	Installed	Design Life	Updated
5 - Good	2001	30	APR-11

Event: Replace Exhaust Fans (30,514 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$488,600	Unassigned

Updated: APR-11

D3040.04.02 Air Cleaning Devices: Exhaust*

HEPA filters are provided at biohazard exhaust fans in the penthouses and near the inlets in the ceiling spaces throughout. Filters are reported to be maintained and disposed of by third party contractors.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

D3040.04.03 Ducts: Exhaust*

Painted metal high velocity ducts are provided.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	50	APR-11

D3040.04.05 Air Outlets and Inlets: Exhaust*

Grilled inlets provided throughout. Gooseneck outlets provided on the roof.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

D3040.05 Heat Exchangers** - 1966/76

2 - steam to glycol heat exchangers located in the emergency mechanical room (1966).
1 - steam to hot water heat exchanger located in the emergency mechanical room (1966).
2- steam to glycol heat exchangers in the northwest lower mechanical room (1976).
2- steam to glycol heat exchangers in the southwest lower mechanical room (1976).

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

Event: Replace ~7 Heat Exchangers

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$104,000	Unassigned

Updated: APR-11

D3040.05 Heat Exchangers** - 1989

2 - steam to glycol heat exchangers located in the operating room mechanical room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1989	30	APR-11

Event: Replace ~2 Heat Exchangers

Type	Year	Cost	Priority
Lifecycle Replacement	2019	$29,700	Unassigned

Updated: APR-11

D3040.05 Heat Exchangers** - 1997

2 - steam to glycol heat exchangers are provided for the heli-pad ice melt system.

Rating	Installed	Design Life	Updated
5 - Good	1997	30	APR-11

Event: Replace ~2 Heat Exchangers

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$29,700	Unassigned

Updated: APR-11

D3040.05 Heat Exchangers** - 2001

~15 - steam to glycol heat exchangers in the penthouse and lower level mechanical rooms.
~8 - steam to hot water heat exchangers located in the penthouse and lower level mechanical rooms.
~6 - steam to domestic hot water heat exchangers located in the lower level mechanical rooms.

Rating	Installed	Design Life	Updated
5 - Good	2001	30	APR-11

Event: Repalce ~29 Heat Exchangers

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$430,600	Unassigned

Updated: APR-11

D3050.01.01 Computer Room Air Conditioning Units**

3 Liebert air conditioning systems are provide in the main computer/server room. It was reported that a full upgrade (~$32 million) of the computer/server room, including air conditioning, is scheduled for spring/summer 2011. Therefore, the lifecycle replacement provided shall be for 2041.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

Event: Replace 3 Computer Room Air Conditioning Units

Type	Year	Cost	Priority
Lifecycle Replacement	2041	$54,600	Unassigned

Updated: APR-11

D3050.01.02 Packaged Rooftop Air Conditioning Units (& Heating Units)**

One Cancoil rooftop packaged air conditioner unit with Two 0.5 HP fans and R22 refrigerant is provided.

Rating	Installed	Design Life	Updated
4 - Acceptable	2005	25	APR-11

Event: Replace 1 Packaged Rooftop Air Conditioning Unit

Type	Year	Cost	Priority
Lifecycle Replacement	2030	$34,500	Unassigned

Updated: APR-11

D3050.01.03 Packaged Terminal Air Conditioning Units*

One DX air conditioning unit is located on the roof.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	30	APR-11

Event: Replace 1 DX Air Conditioning Unit

Type	Year	Cost	Priority
Lifecycle Replacement	2030	$2,000	Unassigned

Updated: APR-11

D3050.05.02 Fan Coil Units**

Hydronic fan coil units are provided at building entrances.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

Event: Replace ~7 Fan Coil Units

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$37,900	Unassigned

Updated: APR-11

D3050.05.06 Unit Heaters**

Hydronic unit heaters are provided in the penthouses, mechanical rooms and loading dock area.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

Event: Replace 15 Unit Heaters

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$50,500	Unassigned

Updated: APR-11

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

Concealed. Radiant ceiling heating provided at entrances throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	35	APR-11

Event: Replace~24 Radiant Heating Panels

Type	Year	Cost	Priority
Lifecycle Replacement	2032	$21,700	Unassigned

Updated: APR-11

D3050.06 Energy Recovery Units*

Heat recovery ventilators are provided on some of the exhaust systems.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	15	APR-11

D3060.02.02 Pneumatic Controls**

Pneumatic controls are used throughout the building. The compressor and air dryer are located in the power plant building.

Rating	Installed	Design Life	Updated
5 - Good	1997	40	APR-11

Event: Replace Pneumatic Controls with BMCS (~45,771 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2037	$951,800	Unassigned

Updated: APR-11

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

A Johnson Controls BMCS system is installed in the building for many of the base building HVAC components. The BMCS has had assorted upgrades and replacements due to attrition and ongoing renovations since the original construction and is working well in conjunction with the existing pneumatic controls.

Rating	Installed	Design Life	Updated
5 - Good	1997	25	APR-11

Event: Replace BMCS (~45,771 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$951,800	Unassigned

Updated: APR-11

D4010 Sprinklers: Fire Protection*

The main sprinkler and standpipe water main enters the building at the lower level mechanical room with distribution and flow control monitors throughout; typically wet-pipe with some pre-action system in areas containing sensitive equipment.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	60	APR-11

D4020 Standpipes*

The main sprinkler and standpipe water main enters the building at the lower level mechanical room with distribution and flow control monitors throughout. Fire department connections are provided around the building exterior at emergency exits, on the roof and in cabinets located in the corridors.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	60	APR-11

D4030.01 Fire Extinguisher, Cabinets and Accessories*

Dry chemical wall mounted fire extinguishers are provided throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

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

A specialized chemical fire suppression system is provided in the kitchen exhaust hoods.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	40	APR-11

Event: Replace 1 Dry Chemical Fire Extinguishing Systems

Type	Year	Cost	Priority
Lifecycle Replacement	2037	$13,400	Unassigned

Updated: APR-11

D4090.07 Fire Pumps & Water Storage Tanks*

2 Aurora 500 gpm fire pumps with one Cutler-Hammer and one Westinghouse fire pump control panel are located in the lower level mechanical room.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	40	APR-11

S5 ELECTRICAL

D5010.01 Main Electrical Transformers** - East Main

Primary electrical service is 13.2 kVolt provided from the power plant building via underground service tunnel to total of 12 primary electrical transformers located in basement level and penthouse level main electrical rooms. Redundancy is provided by bus tie breaker between various transformers.

East Main electrical Room:
TR1E - 1333 kVa
TR2E - 1333 kVa

Rating	Installed	Design Life	Updated
4 - Acceptable	1989	40	APR-11

Event: Replace 2 Main Electrical Transformers

Type	Year	Cost	Priority
Lifecycle Replacement	2029	$94,400	Unassigned

Updated: APR-11

D5010.01 Main Electrical Transformers** - North Main

Primary electrical service is 13.2 kVolt provided from the power plant building via underground service tunnel to total of 12 primary electrical transformers located in basement level and penthouse level main electrical rooms. Redundancy is provided by bus tie breaker between various transformers.

North Main electrical Room
TR1N - 1.33 mVa fluid filled, nitrogen filled air space.
TR2N - 1.33 mVa fluid filled, nitrogen filled air space.
TR3N - 2.00 mVa fluid filled, nitrogen filled air space.

Rating	Installed	Design Life	Updated
5 - Good	2005	40	APR-11

Event: Replace 3 Main Electrical Transformers

Type	Year	Cost	Priority
Lifecycle Replacement	2045	$141,600	Unassigned

Updated: APR-11

D5010.01 Main Electrical Transformers** - Penthouses

Primary electrical service is 13.2 kVolt provided from the power plant building via underground service tunnel to total of 12 primary electrical transformers located in basement level and penthouse level main electrical rooms. Redundancy is provided by bus tie breaker between various transformers.

TRPN1 - 1000kVa
TRPC1 - 2567 kVa
TRPS1 - 1000 kVa

Rating	Installed	Design Life	Updated
5 - Good	2002	40	APR-11

Event: Replace 3 Main Electrical Transformers

Type	Year	Cost	Priority
Lifecycle Replacement	2042	$141,600	Unassigned

Updated: APR-11

D5010.01 Main Electrical Transformers** - West Main

Primary electrical service is 13.2 kVolt provided from the power plant building via underground service tunnel to total of 12 primary electrical transformers located in basement level and penthouse level main electrical rooms. Redundancy is provided by bus tie breaker between various transformers.

West Main Electrical Room:
TR1W - 1500 kVa
TR2W - 1500 kVa
TR3W - 1000 kVa
TR4W - 1000 kVa

Rating	Installed	Design Life	Updated
4 - Acceptable	1999	40	APR-11

Event: Replace 4 Main Electrical Transformers

Type	Year	Cost	Priority
Lifecycle Replacement	2039	$188,700	Unassigned

Updated: APR-11

D5010.02 Secondary Electrical Transformers (Interior)** - 1997

~12 secondary transformers from 45 kVa to 225 kVa provide power for UPSs, MRIs, Xrays and seconday power distribution throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	40	APR-11

Event: Replace ~12 Secondary Electrical Transformers

Type	Year	Cost	Priority
Lifecycle Replacement	2037	$168,400	Unassigned

Updated: APR-11

D5010.02 Secondary Electrical Transformers (Interior)** - 2002

~12 secondary transformers from 45 kVa to 450 kVa provide power for UPSs, MRIs, Xrays and secondary power distribution throughout.

Rating	Installed	Design Life	Updated
5 - Good	2002	40	APR-11

Event: Replace ~12 Secondary Electrical Transformers

Type	Year	Cost	Priority
Lifecycle Replacement	2042	$151,300	Unassigned

Updated: APR-11

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

13.2kVa service from the ring main loop enters the Main Building (SSB) and is distributed from 6 main electrical rooms: West Electrical Room, East Electrical Room, North Electrical Room, South Penthouse Electrical Room, Centre Penthouse Electrical Room and North Penthouse Electrical Room. Each room is serviced by a series of main switchgear units, ring main disconnects, fused disconnects, tie busses and distribution panels.

2 - main switchgear from main loop and other building electrical rooms
4 - fused load break switches for transformers

2 - 13.2 kV main switchgear (service to transfromers TR1E and TR2E)
2 - 600 volt main switchgear (from transformers)
24 - main distribution disconnects
2 - tie breakers
1 - 120/208 volt, 1200 amp, 3-phase, 4-wire central distribution panel

Rating	Installed	Design Life	Updated
4 - Acceptable	1989	40	APR-11

Event: Replace 10 Main Switchboard/Load Break Switches & 27 Main Distribution Disconnects/CDPs

Type	Year	Cost	Priority
Lifecycle Replacement	2029	$695,700	Unassigned

Updated: APR-11

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

13.2kVa service from the ring main loop enters the Main Building (SSB) and is distributed from 6 main electrical rooms: West Electrical Room, East Electrical Room, North Electrical Room, South Penthouse Electrical Room, Centre Penthouse Electrical Room and North Penthouse Electrical Room. Each room is serviced by a series of main switchgear units, ring main disconnects, fused disconnects, tie busses and distribution panels.

3 - main switchgear from other building electrical rooms
3 - fused load break switches for TR1N, TR2N and TR3N

3 - main switchgear from TR1N, TR2N and TR3N
21 - main distribution disconnects
2 - bus tie breakers

6 - 600 volt and 208 volt normal power and emergency power CDPs

Rating	Installed	Design Life	Updated
5 - Good	1996	40	APR-11

Event: Replace 9 Main Switchgear/Load Breaks and 29 Main Distribution Disconnects/CDPs

Type	Year	Cost	Priority
Lifecycle Replacement	2036	$692,600	Unassigned

Updated: APR-11

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

13.2kVa service from the ring main loop enters the Main Building (SSB) and is distributed from 6 main electrical rooms: West Electrical Room, East Electrical Room, North Electrical Room, South Penthouse Electrical Room, Centre Penthouse Electrical Room and North Penthouse Electrical Room. Each room is serviced by a series of main switchgear units, ring main disconnects, fused disconnects, tie busses and distribution panels.

North Penthouse:
2 - ring main load break switchgear units
1 - fused load break switch for TRPN
1 - switchgear from TRPN
1 - tie breaker
2 - main distribution disconnects

Centre Penthouse:
2 - ring main load break switchgear units
1 - fused load break switch for TRPC1
1 - switchgear from TRPC1
1 - tie breaker
4 - main distribution disconnects

South Penthouse:
3 - ring main load break switchgear units
1 - fused load break switch for TRPS1
3 - switchgear units from TRPS1
9 - main distribution disconnects

Rating	Installed	Design Life	Updated
4 - Acceptable	2002	40	APR-11

Event: Replace 9 Main Switchgear/Load Breaks and 17 Main Distribution Disconnects/CDPs

Type	Year	Cost	Priority
Lifecycle Replacement	2042	$711,000	Unassigned

Updated: APR-11

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

13.2kVa service from the ring main loop enters the Main Building (SSB) and is distributed from 6 main electrical rooms: West Electrical Room, East Electrical Room, North Electrical Room, South Penthouse Electrical Room, Centre Penthouse Electrical Room and North Penthouse Electrical Room. Each room is serviced by a series of main switchgear units, ring main disconnects, fused disconnects, tie busses and distribution panels.

4 - main switchgear from main loop and other building electrical rooms
4 - fused load break switches for transformers

4 - main switchgear
25 - main distribution disconnects
4 - tie breakers.
1 - main distribution panel; two incoming feeds, one tie breaker and 4 transformer feeds.

Rating	Installed	Design Life	Updated
5 - Good	1999	40	APR-11

Event: Replace 12 Main Switchboard/Load Break Switches & 30 Main Distribution Disconnects/CDPs

Type	Year	Cost	Priority
Lifecycle Replacement	2039	$800,800	Unassigned

Updated: APR-11

D5010.05 Electrical Branch Circuit Panelboards (Secondary Distribution)** - 1997

Branch circuit panelboards for normal power and emergency power are provided throughout. Many panelboards are furnished with surge protection devices. Various upgrades and replacements have taken place since original construction due to ongoing attrition, renovations and medical equipment upgrades throughout.

Rating	Installed	Design Life	Updated
5 - Good	1997	30	APR-11

Event: Replace ~85 Electrical Branch Circuit Panelboards

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$414,200	Unassigned

Updated: APR-11

D5010.05 Electrical Branch Circuit Panelboards (Secondary Distribution)** - 2001

Branch circuit panelboards for normal power and emergency power are provided throughout. Many panelboards are furnished with surge protection devices. Various upgrades and replacements have taken place since original construction due to ongoing attrition, renovations and medical equipment upgrades throughout.

Rating	Installed	Design Life	Updated
5 - Good	2001	30	APR-11

Event: Replace ~85 Electrical Branch Circuit Panelboards

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$414,200	Unassigned

Updated: APR-11

D5010.07.01 Switchboards, Panelboards, and (Motor) Control Centers** - 1966

Five Cutler-Hammer Unitrol motor control centers (MCCs) are provided in mechanical rooms throughout with a total of ~100 starters and 50 spare/empty.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace ~100 starters

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$669,100	Unassigned

Updated: APR-11

D5010.07.01 Switchboards, Panelboards, and (Motor) Control Centers** - 1997

One Westinghouse MCC is provided with a total of ~14 starters and 31 spare/empty.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

Event: Replace ~14 starters

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$80,300	Unassigned

Updated: APR-11

D5010.07.01 Switchboards, Panelboards, and (Motor) Control Centers** - 2002

6 Cutler-Hammer Advantage Series 2100 and One Eaton/Cutler-Hammer Intelligent Series MCCs are provided in mechanical rooms throughout with a total of ~102 starters and 16 spare/empty.

Rating	Installed	Design Life	Updated
5 - Good	2002	30	APR-11

Event: Replace ~102 Starters

Type	Year	Cost	Priority
Lifecycle Replacement	2032	$669,100	Unassigned

Updated: APR-11

D5010.07.02 Motor Starters and Accessories** - 1966

Motor starters are located in mechanical and electrical rooms throughout the building, providing service for various mechanical equipment throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace ~10 Motor Starters and Accessories

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$12,600	Unassigned

Updated: APR-11

D5010.07.02 Motor Starters and Accessories** - 1989

Motor starters are located in mechanical and electrical rooms throughout the building, providing service for various mechanical equipment throughout. Replacements have occurred since the original construction due to attrition and ongoing renovations.

Rating	Installed	Design Life	Updated
4 - Acceptable	1989	30	APR-11

Event: Replace ~10 Motor Starters and Accessories

Type	Year	Cost	Priority
Lifecycle Replacement	2019	$12,600	Unassigned

Updated: APR-11

D5010.07.02 Motor Starters and Accessories** - 1997

Motor starters are located in mechanical and electrical rooms throughout the building, providing service for various mechanical equipment throughout. Replacements have occurred since the original construction due to attrition and ongoing renovations.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

Event: Replace ~10 Motor Starters and Accessories

Type	Year	Cost	Priority
Lifecycle Replacement	2027	$12,600	Unassigned

Updated: APR-11

D5010.07.02 Motor Starters and Accessories** - 2002

Motor starters are located in mechanical and electrical rooms throughout the building, providing service for various mechanical equipment throughout. Replacements have occurred since the original construction due to attrition and ongoing renovations.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	30	APR-11

Event: Replace ~10 Motor Starters and Accessories

Type	Year	Cost	Priority
Lifecycle Replacement	2032	$12,600	Unassigned

Updated: APR-11

D5010.07.03 Variable Frequency Drives** - 1996

ABB and Moeller variable frequency drives (VFDs) are located in mechanical rooms throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1996	30	APR-11

Event: Replace ~5 Variable Frequency Drives

Type	Year	Cost	Priority
Lifecycle Replacement	2026	$45,500	Unassigned

Updated: APR-11

D5010.07.03 Variable Frequency Drives** - 2002

Cutler-Hammer VFDs are located in mechanical rooms throughout.

Rating	Installed	Design Life	Updated
5 - Good	2002	30	APR-11

Event: Replace ~22 Variable Frequency Drives

Type	Year	Cost	Priority
Lifecycle Replacement	2032	$200,000	Unassigned

Updated: APR-11

D5020.01 Electrical Branch Wiring*

Electrical branch wiring in the building is standard wire in conduit. Flexible conduit and cable are provided for final connections to mechanical equipment.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	50	APR-11

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

Line voltage and keyed switches provided throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	30	APR-11

D5020.02.02.01 Interior Incandescent Fixtures*

Incandescent light fixtures are provided in various spaces throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1988	30	APR-11

D5020.02.02.02 Interior Fluorescent Fixtures** - T12

Original T12 fluorescent lamps with magnetic ballasts ballasts are provided throughout ~50% of the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1988	30	APR-11

Event: Replace T12 Fluorescent Fixtures With T8 Fixtures (~45,771 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2018	$3,995,400	Unassigned

Updated: APR-11

D5020.02.02.02 Interior Fluorescent Fixtures** - T8

Rating	Installed	Design Life	Updated
5 - Good	2002	30	APR-11

Event: Replace T8 Fluorescent Fixtures (~45,771 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2032	$3,995,400	Unassigned

Updated: APR-11

D5020.02.03.01 Emergency Lighting Built-in*

A portion of the fluorescent lighting throughout the building is on the back-up electrical power circuit.

Rating	Installed	Design Life	Updated
4 - Acceptable	1988	35	APR-11

D5020.02.03.02 Emergency Lighting Battery Packs**

Emergency battery packs with integral and remote heads have limited use throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	20	APR-11

Event: Replace ~20 Emergency Lighting Battery Packs

Type	Year	Cost	Priority
Lifecycle Replacement	2017	$23,300	Unassigned

Updated: APR-11

D5020.02.03.03 Exit Signs*

Assorted LED and digital LCD emergency exit signs are provided throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	30	APR-11

D5020.02.11 Operating Room Lighting*

Specialized high intensity operator room is provided in the operating room suites.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	0	APR-11

D5020.03.01.04 Exterior H.P. Sodium Fixtures*

Wall and soffit mounted high pressure sodium (HPS) light fixtures are provided at building entrances.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

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

Photocell controls are provided for HPS lamps on the building exterior.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

D5030.01 Detection and Fire Alarm**

Edwards EST3 panels are located in some electrical rooms throughout (one panel providing service for the floor it is on plus the floors directly above and below) and in the main electrical rooms. Fire alarm power booster panels are provided in electrical rooms throughout. End devices include smoke detectors, heat detectors, pull stations, bells strobes and horns throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	25	APR-11

Event: Replace Detection and Fire Alarm (~91542 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$2,517,000	Unassigned

Updated: APR-11

D5030.02.03 Security Access**

Proximity card readers and keypads are provided for access to select floor areas throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	25	APR-11

Event: Replace ~90 Proximity Card Readers and Keypads

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$23,600	Unassigned

Updated: APR-11

D5030.02.04 Video Surveillance**

Video surveillance is provided throughout. Monitoring is provided at central security located in another building. An estimate ~60 security cameras are present throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	25	APR-11

Event: Replace ~60 Surveillance Cameras

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$7,600	Unassigned

Updated: APR-11

D5030.04.01 Telephone Systems*

Nortel Meridian telephone system provided throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1982	25	APR-11

D5030.04.03 Call Systems**

Emergency patient/nursing call systems located in patient rooms, clinical areas and patient washrooms throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	25	APR-11

Event: Replace ~600 Call System Stations

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$146,700	Unassigned

Updated: APR-11

D5030.04.05 Local Area Network Systems*

Category 5 cabling and Wi-Fi provided throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	2005	15	APR-11

D5030.05 Public Address and Music Systems**

Public address (PA) speakers are located in corridors, hostel, administrative, clinical and service spaces throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	25	APR-11

Event: Replace 1 Public Address System

Type	Year	Cost	Priority
Lifecycle Replacement	2022	$5,400	Unassigned

Updated: APR-11

D5030.06 Television Systems*

CATV is provided SHAW Cable Systems throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	20	APR-11

D5090.01 Uninterruptible Power Supply Systems** - ICU

An Eaton Powerware 9390 UPS system is provided for the ICU off of the North Main electrical Room.

Rating	Installed	Design Life	Updated
5 - Good	2001	30	APR-11

Event: Replace 1 Uninterruptible Power Supply Systems

Type	Year	Cost	Priority
Lifecycle Replacement	2031	$43,300	Unassigned

Updated: APR-11

D5090.01 Uninterruptible Power Supply Systems** - Penthouse

A UPS system for critical equipment throughout the building is provided at the penthouse level. It was reported that the system will provide power for ~15 minutes, until back-up generator supply is established. The complete UPS system and related equipment consists of:

2 - Eaton Powerware 9315 UPS units.
1 - 480 volt input cabinet.
1 - 347/600 volt CDP.
1 - 347/600 fused switchboard.
1 - 347/600 volt transfer switch.
1 - 347/600 volt tie cabinet.
120 - batteries located in adjacent room.

Rating	Installed	Design Life	Updated
5 - Good	2008	30	APR-11

Event: Replace 1 set UPS Systems

Type	Year	Cost	Priority
Lifecycle Replacement	2038	$81,200	Unassigned

Updated: APR-11

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

Generator #1 is a Caterpillar "Magna Max" providing 120/208 volt. 3470 amp emergency power to the main building and is furnished with four batteries (2008) and battery charger. The generator control is located in the Generator Building with Generators #2 & #3 and is therefore beyond the scope of this report. This generator has ~568 hours run time and is reported to be tested for an hour on a monthly basis.

Rating	Installed	Design Life	Updated
4 - Acceptable	1989	35	APR-11

Event: Replace 1 Packaged Engine Generator System

Type	Year	Cost	Priority
Lifecycle Replacement	2024	$603,700	Unassigned

Updated: APR-11

D5090.06 Lightning Protection Systems*

Lightning protection cables and rods are provided at the roof perimeter.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	25	APR-11

S6 EQUIPMENT, FURNISHINGS AND SPECIAL CONSTRUCTION

E1010.06 Commercial Laundry and Dry Cleaning Equipment*

Commercial laundry equipment in the laundry facility located on the basement level of the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

E1020.02 Library Equipment*

Filing and record keeping equipment in the basement level records storage room.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	25	APR-11

E1020.07 Laboratory Equipment*

Microscopes, fume hoods, positive pressure rooms, sterile rooms, and other miscellaneous laboratory equipment throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	25	APR-11

E1020.08 Medical Equipment*

Various medical equipment throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	25	APR-11

E1030.03 Loading Dock Equipment*

Hydraulic loading dock ramps at basement level shipping and receiving.

Rating	Installed	Design Life	Updated
4 - Acceptable	2005	25	APR-11

E1090.01.03 Floor and Wall Cleaning Equipment*

Floor sweepers and buffers stored on the basement level of the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

E1090.01.04 Housekeeping Carts*

Housekeeping carts stored on the basement level of the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

E1090.02 Solid Waste Handling Equipment

Recycling, SHARPS, biohazardous, and solid waste handling equipment in the Waste Handling area of the basement level.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	25	APR-11

E1090.02.02 Waste Compactors and Destructors*

Waste compactors located at the waste management facility.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

E1090.02.07 Recycling Equipment*

Cardboard compactors located at the waste management facility.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

E1090.03 Food Service Equipment*

Full service commercial kitchen with food preparation and cleaning equipment.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	25	APR-11

E1090.04 Residential Equipment*

Residential appliances in various staff lounge and kitchen areas throughout.

Rating	Installed	Design Life	Updated
4 - Acceptable	1997	10	APR-11

E1090.07 Athletic, Recreational, and Therapeutic Equipment*

Exercise and therapeutic equipment such as weights, balance balls, mats, parallel bars, massage tables, and electro-therapy machines are located in the outpatient training area.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	15	APR-11

E2010.01 Fixed Artwork*

Various paintings and other artwork on walls throughout the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

E2010.02 Fixed Casework**

Wood, steel, and composite fixed casework throughout the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	35	APR-11

Event: Replace Fixed Casework (91,542 m2/gfa)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$8,389,400	Unassigned

Updated: APR-11

E2010.03.01 Blinds**

Vertical hanging blinds on approximately 30% of windows have blinds.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	30	APR-11

Event: Replace Blinds (1086 m2)

Type	Year	Cost	Priority
Lifecycle Replacement	2014	$116,200	Unassigned

Updated: APR-11

E2010.03.03 Shades*

Vinyl pull-down window shades on approximately 50% of the windows.

Rating	Installed	Design Life	Updated
4 - Acceptable	2000	0	APR-11

F1030.03 Radiation Protection*

Radiation protection wall treatments in the Diagnostic Imaging, MRI, Seimens MRI, and X-ray areas.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

F1040.05 Liquid and Gas Storage Tanks*

Oxygen and Nitrogen tanks are stored outside; however, distribution lines run throughout the building.
~20 bottles of nitrogen dioxide and ~6 bottles of carbon dioxide are stored in the basement of the building.
A 250 L diesel tank is present in the generator room in the basement.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	20	APR-11

S8 FUNCTIONAL ASSESSMENT

K4010.01 Barrier Free Route: Parking to Entrance*

Barrier free designated parking is present with an adequate ramp from the parking area to the main entrance.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

K4010.02 Barrier Free Entrances*

Entrance doors are of sufficient width to allow for wheelchair passage and are equipped with automatic openers.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

K4010.03 Barrier Free Interior Circulation*

Corridors are structurally sound and of sufficient width to allow for barrier free passage.
Interior doors to publicly accessible areas are equipped with automatic openers.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

K4010.04 Barrier Free Washrooms*

Barrier free washrooms are present in the building.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

K4030.01 Asbestos*

Asbestos management plan is in effect and up-to-date.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

Event: Continue Asbestos Management Plan

Type	Year	Cost	Priority
Preventative Maintenance	2012	$8,500	High

Updated: APR-11

K4030.02 PCBs*

No observed or reported sources of PBCs.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

K4030.03 Mercury*

Fluorescent light tubes contain a small amount of mercury vapour.
Blood pressure carts contain liquid mercury.

Rating	Installed	Design Life	Updated
4 - Acceptable	0	0	APR-11

K4030.04 Mould*

No specific sources of mould were identified; however, the site representative reported that there are many problems associated with mould throughout the building.

Rating	Installed	Design Life	Updated
2 - Poor	0	0	APR-11

Event: Conduct Mould Study

Concern:
Site representative reported ongoing issues with mould in various locations around the hospital.

Recommendation:
Conduct a study to determine the severity of the mould problem.

Type	Year	Cost	Priority
Study	2011	$15,000	High

Updated: APR-11

K4030.06 Radioactive Compounds*

Radioactive compounds are reportedly stored in the building. However, they are secured and a very limited number of people have access to them.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

K4030.08 Biohazardous Materials*

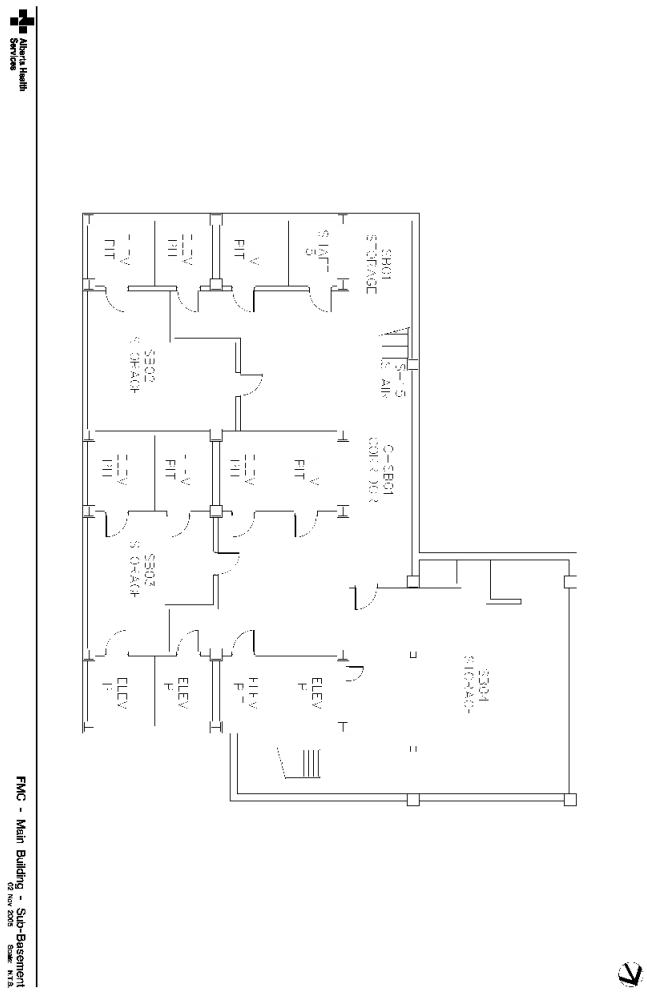
Biohazardous materials are present on site. The exact types of biohazardous materials is unknown.

Rating	Installed	Design Life	Updated
4 - Acceptable	1966	0	APR-11

K5010 Reports and Studies*

This facility was evaluated on February 3, 2011 by Golder Associates Ltd.

Rating	Installed	Design Life	Updated
5 - Good	2010	0	APR-11



FMC Main Building - Sub Basement (2010) NTS