

Facility Condition Assessment Summary Report

**British Columbia Institute of Technology
NE3 - Centre Applied Research**



Submitted by:

VFA Canada Corp.

Burnaby Centre

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Asset Detail Report

by Asset Name

NE3 - Centre Applied Research

Post BCIT
 Secondary
 Institution:
 Campus: BCIT Burnaby

Asset Name: NE 3 - Centre Applied Res.

Asset Number: NE3

STATISTICS

FCI Cost:	309,032	FCI:	0.29
Total Requirements Cost :	349,342	RI:	0.33

Current Replacement Value	1,059,652	Address 1	3700 Willingdon Avenue
Size	648 SM	Address 2	-
Year Constructed	1971	City	Burnaby
Year Renovated	-	State/Province/Region	British Columbia
Commission Date	-	Zip/Postal Code	V5G 3H2
Decommission Date	-	Architect	-
Ownership	Client Owned	Historical Category	None
Floors	1	Construction Type	IBC - Type 1A
Type	Building	Use	Multipurpose Use

PHOTO



NE 3 - Centre Applied Res.

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ASSET DESCRIPTION

ARCHITECTURAL

General

The NE3 building , is within the British Columbia Ministry of Advanced Education and is part of College of the BCIT (British Columbia Institute of Technology) in Burnaby's campus. It is located at 3700 Willingdon Avenue Burnaby, BC. Originally built on this site in 1971 with 648 SM of space. The facility is composed of a one level building (original 1971) and annex two level with attic space (2000).

Substructure

All costs in CAD.

The substructure construction of the building features concrete perimeter foundation walls on reinforced concrete strip footings. The facility has a concrete slab on grade at 1971 building and crawlspace at 2000 building.

Superstructure

The building has load bearing wood stud wall construction and wood frame for roof framing on both buildings.

Exterior Construction

Exterior walls at NE3 Building includes cedar singles wall(1971) and cement board siding construction (2000). Exterior windows are single and double glazed vinyl framed assemblies. Entry doors are typically glazed hollow metal assemblies. The roof includes adhered SBS modified roofing membrane covering.

Interior Construction

Floor finishes throughout the facility are vinyl composite tiles, ceramic tiles and concrete floor. Restrooms/change rooms generally have ceramic tiles walls finish. Wall finishes are painted gypsum wallboard and painted block. The ceiling finishes are generally ACT or no finish (open to roof structural components). The interior doors are finished wood assemblies, some with glazed panels. Interior door hardware is typically a combination of knob with panic hardware where required at exterior door fire exit locations.

Accessibility

The building is not considered barrier free per the requirements of section 3.8 Building Requirements for Persons with Disabilities of the 2006 British Columbia Building Code.

Occupancy Type

According to the 2006 British Columbia Building Code, Article 3.1.2.1. (1), the NE3 Building is classified as an Assembly Group A, Division 2 occupancy.

MECHANICAL

BCIT – Centre Applied Res. NE03

HVAC

Heating for the NE03 building is supplied by 900 MBH Hydrotherm gas-fired water heating boiler, serial # 16637 located in the boiler room # 118. Hot water is distributed by 5 various circulating pumps to the air handling unit heating coils, 4 hydronic fin tube heaters and 2 unit heaters.

Ventilation, cooling and heating is provided by 2 HVAC air handling units with 24 MBH of cooling rate, manufactured by Armstrong model EFC08SSA-1A installed inside the new building.

HVAC Units serves the three floors of the new building built in 2000.

Heating for some office spaces and some classroom spaces are also provided by perimeter radiant heating system supplemented by the overhead air distribution within each room.

Heating for the green house building is provided by 20 MBH hot water unit heaters.

Exhaust fans are provided for the washrooms, general spaces, crawl space and kitchen, two exhaust direct fans 650 CFM are used to serve main building and one rooftop centrifugal exhaust fan is fixed to serve the fume hood inside the lab room.

The building management system includes Direct Digital Control (DDC) installed in 2000 for both new and old building.

PLUMBING

A two inches domestic cold water service enters the building through the mechanical room. Piping is distributed to all plumbing fixtures and hose bibs.

Domestic hot water is produced by two 65 gallons “SUPER HOT” and “RHEEM RUUD” gas fired hot water heaters located in the mechanical rooms and one 60 gallons “REX” electric hot water heater located in new building. The heaters are equipped with a temperature, pressure and safety instruments.

All costs in CAD.

Plumbing fixtures includes vitreous china water closets, lavatories and showers in the washrooms; stainless steel kitchen sinks in the kitchen and staff rooms; custodian service/utility sinks in the janitor's room.

The building sanitary waste piping system with gravity discharge flows to the main campus system.

Rainwater is collected by gutters with downspouts which discharge directly to the ground.

Natural gas is distributed to the boiler and gas water heaters.

FIRE PROTECTION

The fire protection systems not include a wet fire sprinkler system. Numerous handheld fire extinguishers are located throughout the building to supplement the fire suppression system.

ELECTRICAL

Main Electrical Service

There is a pad mounted service 150kVA transformer and disconnect switch located along the exterior, it is where the electrical service enters the building. It is located along the exterior of Mechanical Room 106.

The building contains a 600A-120/208V (3-ph 4-wire) switchgear (SDC-NE-03) that provides the circuit breaking for the building. The panelboard is located in Mechanical Room 106.

Electrical Service and Distribution

Downstream electrical distribution is handled by panelboards distributed throughout the building.

Branch Wiring Devices

The branch wiring for this building includes a heavy concentration of interior branch wiring, electrical devices, conduit, wire, safety switches, cable trays, and utilization equipment.

Lighting

The building includes a lighting system with a variety of fixtures. The shop area has 900x1200mm suspended fluorescent lights that have no lenses. The office and class areas have recessed 600x1200mm fluorescents fixtures with prismatic lenses. The fixtures contain T8 lamps with electronic ballasts.

The exterior lighting consists of a few recessed can fixtures with incandescent lamps. They are mounted under the canopy area.

Telephone System

The building has a telephone system which includes conduit, cable, switches, punch panels, and head end equipment.

Fire Alarm System

This building includes a fire alarm system. The fire alarm system includes head end equipment, pull stations at all exit doors, bells, smokes, conduit, wire, and connections. There is a fire alarm control panels (FACP) located in Mechanical Room 106 (exterior). There is an annunciator panel located in the main entryway.

LAN System

The building includes a local area network system with head end equipment, conduit, switches, racks, patch panels, fiber optics, as well as Cat5 and Cat5e cable. There is an effort to add Cat6 wiring when upgrades occur.

Exit Signs

All costs in CAD.

The emergency lighting system includes the installation of exit signs. The installation has single and double sided exit signs, conduit, wire, boxes, conduit bends, connections and circuit breakers.

Emergency Lighting

The emergency lighting is handled by battery backup lights.

REQUIREMENTS

Requirement Name	Prime System	Category	Priority	Action Date	Cost
Natural Gas Supply for Bldg Renewal	D2090-Other Plumbing Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	21,647
Custodial Sink Renewal	D2010-Plumbing Fixtures	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	4,187
Gutters and Downspouts - Copper Renewal	B30-Roofing	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	17,916
Restroom Fixtures - 1971 Renewal	D2010-Plumbing Fixtures	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	5,073
Boilers HW - Gas Fired - 1972 Renewal	D3020-Heat Generating Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	51,741
Water Heater - Gas - Residential Renewal	D2020-Domestic Water Distribution	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	10,300
Hot Water Distribution - Expansion Tank Renewal	D3044-Hot Water Distribution	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	10,254
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040-Distribution Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	20,562
Disconnect & Transformer - 150kVA (480-120/208V) Renewal	D5012-Low Tension Service and Dist.	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	15,256
Fire Alarm System - Notification & Initiating Devices (Research Area) Renewal	D5037-Fire Alarm Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	7,599
Emergency Lighting Renewal	D5092-Emergency Light and Power Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	4,730
Telephone System Renewal	D5033-Telephone Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	7,115
Cedar Shingles - 1971 Renewal	B30-Roofing	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	26,373
Fire Alarm System - Notification & Initiating Devices (Smart House) Renewal	D5037-Fire Alarm Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	5,892

All costs in CAD.

Requirement Name	Prime System	Category	Priority	Action Date	Cost
Water Dist Complete - Average Renewal	D2020-Domestic Water Distribution	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2014	29,606
Window Unit Air Conditioner Renewal	D3030-Cooling Generating Systems	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2015	7,211
Card Access System Renewal	D5038-Security and Detection Systems	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2014	6,315
Exit Signs Renewal	D5092-Emergency Light and Power Systems	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2014	4,458
LAN System Renewal	D5039-Local Area Networks	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2015	27,962
Perimeter Fencing/Gate (Chain Link) Renewal	G2041-Fences and Gates	Beyond Useful Life	3- Long Term (3-5 years)	11/08/2016	10,499
Overhead Rolling Doors Renewal	B2030-Exterior Doors	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2016	14,337
Entrance Doors - Not Handicapped Accessible	B2030-Exterior Doors	Accessibility	5- Does Not Meet Current Code	-	18,070
Non Barrier Free Washrooms - Lack Accessible Stalls	C1010-Partitions	Accessibility	5- Does Not Meet Current Code	-	18,513
Door Hardware - Not Compliant Knob Type	-	Accessibility	5- Does Not Meet Current Code	-	3,728
Total					349,344