

# Facility Condition Assessment Summary Report

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**British Columbia Institute of Technology  
NE8 - Welding Building**



Submitted by:

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# **Asset Detail Report**

**by Asset Name**

**NE8 - Welding Building**

Post BCIT  
 Secondary  
 Institution:  
 Campus: BCIT Burnaby

Asset Name: NE 8 - Welding

Asset Number: NE8

STATISTICS

<b>FCI Cost:</b>	1,774,228	<b>FCI:</b>	0.44
<b>Total Requirements Cost :</b>	1,808,181	<b>RI:</b>	0.45

<b>Current Replacement Value</b>	4,024,178	<b>Address 1</b>	3700 Willingdon Avenue
<b>Size</b>	2,395 SM	<b>Address 2</b>	-
<b>Year Constructed</b>	1981	<b>City</b>	Burnaby
<b>Year Renovated</b>	-	<b>State/Province/Region</b>	British Columbia
<b>Commission Date</b>	-	<b>Zip/Postal Code</b>	V5G 3H2
<b>Decommission Date</b>	-	<b>Architect</b>	-
<b>Ownership</b>	Client Owned	<b>Historical Category</b>	None
<b>Floors</b>	1	<b>Construction Type</b>	-
<b>Type</b>	Building	<b>Use</b>	Classroom / Training

PHOTO



NE 8 - Welding

NE 8 - Welding

ASSET DESCRIPTION

ARCHITECTURAL

General

The NE8 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 1981 with 2,395 SM of space. The facility is composed of a one level building with mezzanino used for classroom, office and storage.

Substructure

All costs in CAD.

The substructure construction of the building features concrete perimeter foundation walls on reinforced concrete footings. The facility has a concrete slab on grade.

#### Superstructure

The building has both load bearing CMU's wall construction and steel columns and steel frame with concrete filled steel pan for the mezzanine floor framing and sloped steel open web joist with steel decking for roof framing.

#### Exterior Construction

Exterior walls at NE8 building includes metal cladding finishing's construction. Exterior windows are double glazed metal framed assemblies. Entry doors are typically either glazed / unglazed hollow metal assemblies. The roof includes sloped metal roof system covering and 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 600 x 1200 ACT or no finish (open to roof structural components). The interior doors are finished metal 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 NE8 building is classified as an Assembly Group A, Division 2 occupancy.

#### MECHANICAL

##### BCIT – Welding Shop NE08

##### HVAC

Heating for the welding NE08 building is provided from main boiler house.

The boilers provide hot water to the perimeter heating system and service rooms inside the NE08 facility. There is one circulating pump for the heating hot water.

The building includes a hot and warm water distribution system.

Heating, cooling and fresh air for the building are provided by six make up air units (MUA) and two air handling units (AHU).

Make up air units are manufactured by “Eng-Air” direct gas fired, three of them have the name plate and the rest without, units model are HE402HMCO, HE301HMCO and HE402HMCO.

AHUs are manufactured by “Lennox” indirect gas fired with A/C cooling. Both they have name plate, units model are LGA060SH2Y serial # 5602M05381 with 5 tons cooling /112 MBH heating and GCS16-048-120-5Y serial # 5604A07724 with 4 tons cooling / 95 MBH heating. Units are located on the rooftop of the building NE08.

Return air is drawn from the ceiling space into each unit mixing section. The mixed air is then drawn through dampers and discharged into the ductwork system again.

Air is delivered into the space through the round and square type diffusers.

The HVAC ventilation system includes 12 different kinds of exhaust fans and 2 dust collector units.

Four rooftop centrifugal exhaust fans manufactured by “Greenheck” model # BISW-21-X-10-11, six rooftop crawlspace exhaust fans with 684 l/s and 1652 l/s, and two 150 l/s ceiling fans.

*All costs in CAD.*

Supplemental heating includes perimeter heating unit installed in office and class rooms.

The building management system includes Direct Digital Control (DDC) for system optimization, basic desktop control, moderate sensor types and quantities located in mechanical room 101.

#### PLUMBING

A four inches domestic cold water service enters the building through room 109B.

Piping is distributed to all plumbing fixtures and hose bibs.

The domestic hot water is provided by 65 gallons "A.O.Smith" gas fired water heater located in mechanical room 10B model # BTRC365 and serial # 1011M001193.

Hot and cold water is distributed to restroom fixtures, janitor sinks and other points of use.

The washroom fixtures include a variety of vitreous china urinals, water closets and lavatories.

The plumbing fixtures also include stainless steel sink and three group hand wash stations located in the washrooms and staff locker rooms.

Rain water is drained from the rooftop by drains with cast iron risers.

Storm water is discharged by gravity into the city storm sewer.

The building includes a sanitary waste piping system with gravity discharge to the municipal system.

The building includes natural gas service for MUA and AH units.

#### FIRE PROTECTION

The fire protection systems include a wet fire sprinkler system serving the NE08 building. There is a Siamese fire hose connection for the fire fighters. Handheld fire extinguishers are located throughout the building to supplement the fire suppression system.

#### ELECTRICAL

##### Main Electrical Service

The building contains a 12.47kV, single-ended unit substation (SUB W). The system includes incoming feeders, a 15kV disconnect switch, and one 2000kVA 12.47kV-480/277V transformer. A 3200A-480/277V (3-ph 4-wire) switchgear provides the circuit breaking for the building. The switchgear includes metering. All equipment is located in room 123.

##### Electrical Service and Distribution

Downstream electrical distribution is handled by panelboards distributed throughout the building. There is also a transformer associated with the system.

##### 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 300x1200mm suspended fluorescent lights with T5 lamps and electronic ballasts. There are no lenses with the shop lights. The office and class areas have recessed 600x1200mm fluorescents with grid reflective lenses, they contain T8 lamps with electronic ballasts.

The exterior perimeter lighting consists of HID mounted in the wall. There are also six pendant mounted HID light fixtures under the exterior canopy.

##### Telephone System

*All costs in CAD.*

The building includes 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. The fire alarm control panel is located in the Mechanical Room.

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

The emergency lighting system includes the installation of exit signs. The installation includes 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
Emergency Lighting Renewal	D5092-Emergency Light and Power Systems	Beyond Useful Life	1- Immediate (within 1 year)	01/31/2011	17,483
Clock System Renewal	D5036-Clock and Program Systems	Beyond Useful Life	1- Immediate (within 1 year)	01/31/2011	45,214
Single Ended Unit Substation - 2000kVA [12.47kV & 480/277V] (Sub W) Renewal	D5011-High Tension Service and Dist.	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	397,550
Lighting - Exterior - Perimeter Renewal	D5022-Lighting Equipment	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	5,950
Fire Alarm System - Notification & Initiating Devices Renewal	D5037-Fire Alarm Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	49,860
Branch Wiring - Equipment & Devices Renewal	D5021-Branch Wiring Devices	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	28,650
Rooftop Make-up Air Unit - 1981 Renewal	D3040-Distribution Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	471,630
Water Dist Complete - Average Renewal	D2020-Domestic Water Distribution	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	85,088
Custodial Sink Renewal	D2010-Plumbing Fixtures	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	8,373

All costs in CAD.

Requirement Name	Prime System	Category	Priority	Action Date	Cost
Centrifugal Exhaust Fans w/Ducting Renewal	D3040-Distribution Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	15,703
Rooftop Exhaust Fans - Crawlspace Renewal	D3040-Distribution Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	17,917
Perimeter Heat System - Hydronic Fin Tube Renewal	D3040-Distribution Systems	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	33,132
Panelboards, Feeders, Disconnects, Transformers - 480/277V & 120/208V (1983) Renewal	D5012-Low Tension Service and Dist.	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	103,717
Dust Collection System Renewal	D3093-Dust and Fume Collectors	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	71,930
Restroom Fixtures Renewal	D2010-Plumbing Fixtures	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	24,287
Unit Heaters - Electric Renewal	D3050-Terminal and Package Units	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	8,108
Air Liquide Tank - 1000 Gallons Renewal	D3012-Gas Supply System	Beyond Useful Life	2- Short Term (1-2 years)	01/31/2013	20,993
Exit Signs Renewal	D5092-Emergency Light and Power Systems	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2014	16,479
Telephone System Renewal	D5033-Telephone Systems	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2015	1,098
LAN System Renewal	D5039-Local Area Networks	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2015	4,315
Overhead Crane - 2Ton Renewal	E1039-Other Vehicular Equipment	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2016	43,475
Transformers - Not Up To Current Standards	D5012-Low Tension Service and Dist.	Capacity/Design	3- Long Term (3-5 years)	01/31/2016	15,884
Overhead Rolling Doors Renewal	B2030-Exterior Doors	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2016	14,337
Door Assembly - Single Renewal	B2030-Exterior Doors	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2016	28,901
Windows - Aluminum Renewal	B2020-Exterior Windows	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2016	245,665
Vinyl Composite Tile Renewal	C3020-Floor Finishes	Beyond Useful Life	3- Long Term (3-5 years)	01/31/2016	14,372
Entrance Doors - Not Handicapped Accessible	B2030-Exterior Doors	Accessibility	5- Does Not Meet Current Code	-	18,070
<b>Total</b>					<b>1,808,181</b>

All costs in CAD.