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PART 1      GENERAL

1.1           ACTION AND INFORMATIONAL SUBMITTALS

- .1      Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2      Sustainable Design Submittals:
  - .1      Construction Waste Management:
    - .1      Submit project Waste Reduction Workplan highlighting recycling requirements.

1.2           CLOSEOUT SUBMITTALS

- .1      Submit in accordance with Section 01 78 00 - Closeout Submittals.

1.3           REFERENCES

- .1      Canadian Environmental Protection Act, 1999
- .2      Federal Halocarbon Regulations, 2003
- .3      Ozone-Depleting Substances Regulations, 1998
- .4      Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems, 1996
- .5      Canada's Strategy to Accelerate the Phase-Out of CFC and Halons Uses and to Dispose of the Surplus Stocks, CCME, 2001

PART 2      PRODUCTS

2.1           NOT USED

- .1      Not used.

PART 3      EXECUTION

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**3.1 DISCONNECTION AND REMOVAL OF EXISTING MECHANICAL WORK**

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- .1 Where indicated on drawings, disconnect and remove existing mechanical work, including hangers, supports, insulation, etc. Disconnect at point of supply, remove obsolete connecting services and make system safe. Cut back obsolete piping behind finishes and cap water-tight unless otherwise specified.
- .2 Where existing mechanical services extend through, or are in an area to serve items which are to remain, maintain services in operation. Include for rerouting existing services concealed behind existing finishes and which become exposed during renovation work, so as to be concealed behind new or existing finishes.
- .3 Unless otherwise specified, remove from site and dispose of existing materials which have been removed and are not to be relocated or reused.
- .4 Unless otherwise specified, remove from site and dispose of existing materials which have been removed and are not to be relocated or reused, except for following which are to be handed over to Departmental Representative.

**3.2 VENTILATION (System List and description)**

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- .1 System #1:
  - .1 Location: Basement mechanical.
  - .2 Use / purpose: supplies general ventilation heating and cooling to the building, through the main duct and take-off to perimeter terminal induction units and supply diffusers.
  - .3 Description: Indoor built-up heating, ventilation and air conditioning unit composed of a supply fan, chilled water cooling coil, filter bank, heating water coil.
  - .4 Services: 150mm  $\phi$  chilled water supply and return, condensate drain, 150mm  $\phi$  heating water supply and return piping, electrical supply.
- .2 System #1A:
  - .1 Location: Basement mechanical room.
  - .2 Use / purpose: returns air from each floor to system #1.
  - .3 Description: floor mounted centrifugal fan.
  - .4 Service: electrical supply.
- .3 System #2:
  - .1 Location: Roof - west side of ground floor.
  - .2 Use / purpose: supplies general ventilation heating and cooling to the interior zone of west side of the ground floor area, through supply diffusers.
  - .3 Description: Package roof mounted a/c unit with electric heating and Dx cooling system.
  - .4 Service: electrical supply.
- .4 System #3 - RTU-1:
  - .1 Location: Roof.
  - .2 Use / purpose: supplies high humidity ventilation and cooling to data/computer and LAN room on east side of 2nd floor, through supply diffusers.
  - .3 Description: Package roof mounted a/c unit with electric heating and Dx

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- cooling system.
  - .4 Services: Indoor humidifier, steam distribution to supply ductwork, condensate drain and cold water supply, electrical supply.
  - .5 System #4 – RTU-2:
    - .1 Location: Roof.
    - .2 Use / purpose: supplies general ventilation and cooling to the interior of west side of the second floor offices, through supply diffusers.
    - .3 Description: Package roof mounted a/c unit with electric heating and Dx cooling system.
    - .4 Service: electrical supply.
  - .6 Miscellaneous Fans:
    - .1 There is a variety of fans in the building, other than those part of the systems listed above.
    - .2 Washrooms exhaust fan, located on roof.
    - .3 Cabinet inline exhaust fan, located in basement mechanical room.
    - .4 Cabinet inline exhaust fan, located in basement sump pit room.
    - .5 Cabinet inline exhaust fan, located in basement elevator room.
    - .6 Cabinet inline exhaust fan, located in basement telephone room.
  - .7 Induction Units:
    - .1 Location: Basement, ground and second floors perimeter.
    - .2 Use / purpose: supplies general ventilation heating and cooling to each office.
    - .3 Description: perimeter wall recessed units.
    - .4 Services: Controls, supply ductwork from system#1
  - .8 Forced flow heaters:
    - .1 Location: Basement, ground and second floors (entrance and staircases).
    - .2 Use / purpose: provide heat to main entrance, vestibule and staircases.
    - .3 Description: wall recessed units.
    - .4 Services: Controls, heating supply and return piping, electrical supply.
  - .9 Miscellaneous Split System A/C Units:
    - .1 Location of evaporators: Ground and second floors.
    - .2 Location of condensing units: Roof.
    - .3 Use / purpose: supplied auxiliary cooling to staff rooms and LAN room.
    - .4 Description: wall hung unit.
    - .5 Services: Controls, refrigerants, electrical supply.
  - .10 General Considerations for Removing (Ventilation):
    - .1 Once the building has been designated a construction site, ventilation needs to be maintained or provided to meet workers health and safety requirements. The Contractor may decide to include the existing ventilation systems to provide ventilation for the site for a defined duration, but these systems are permitted to be removed as soon as the Contractor takes control of the site from a building code perspective.
  - .11 Required Decommissioning Activities (Ventilation):

- .1 All equipment, ducting and accessories can be removed once the building has been turned over to the Contractor for demolition. The decommissioning sequence must begin with the disconnection of any electrical supply, steam, and chilled water supply. All equipment removal leaving openings in the roof or walls must be scheduled at the end of the demolition schedule or the opening will need to be blocked and sealed to prevent unwanted water entry.

### 3.3 COOLING

- .1 System Description:
  - .1 Chilled water piping comes from Central Heating and Cooling Plant via tunnel located in the basement mechanical room and is distributed to cooling coils system #1. Chilled water pumps pumped return water to the plant. Piping has been disconnected from main inside tunnel and decommissioned some time ago but has not been demolished.
- .2 General Considerations for Removal:
  - .1 The cooling system can be decommissioned as soon as the building is handed over to the Demolition Contractor. All refrigeration and cooling equipment must be decommissioned and refrigerants must be removed and disposed of according to the Federal Halocarbons Regulations 2003 and Environment Canada's Environmental Code of Practice. Chilled and heating water sample will need to be analyzed to determine if it contains any chemicals listed as a hazardous waste and if applicable, collected and disposed of according to the requirements of the applicable Provincial and Federal regulations.
- .3 Required Decommissioning Activities:
  - .1 The decommissioning sequence must begin with the closing and locking of the two (2) main isolating valves on the chilled water supply and return at the cooling plant. Sample Chilled water for hazardous chemicals. Collect Chilled water and dispose if applicable. If no hazardous chemicals are found, drain chilled water piping and equipment to sewer. Collect and dispose of all refrigerant and decommission related equipment as per code and regulations requirements. Remove all piping and equipment. Closing and locking of the two (2) main isolating valves to be coordinate with Department Representative. Any shutdown that affect other buildings to be done after hours, preferably on weekends.

### 3.4 HEATING

- .1 System Description:
  - .1 High temperature heating piping comes from Heating and Cooling plant comes in the building via tunnel in basement mechanical room. Heating piping to supply various heating equipment such as: domestic hot water heat exchangers, heating coils in systems No.1, forced flow heater.

- .2 General Considerations for Removal:
  - .1 If the demolition work occurs in cold temperature, the site may need the heating system to remain operational at least until all piping systems have been drained.
- .3 Required Decommissioning Activities:
  - .1 The decommissioning sequence must begin with the closing and locking the main isolating valve on the high temperature supply and return piping. Sample heating water for hazardous chemicals. Collect heating water and dispose if applicable. If no hazardous chemicals are found, drain piping and equipment to sewer. Collect and dispose of glycol solution as per code and regulations requirements. The pipes entering the building are isolated from the mains in the tunnel. Remove and cap pipe at the mains in the tunnel. Remove all piping and equipment. Shutdown of the main line will be required for this work. A written shut down request will have to be submitted to the Department Representative for coordination with the plant. Work can only be done once a written confirmation has been received by the contractor. Any shutdown that affect other buildings to be done after hours, preferably on weekends.

### 3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

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END OF SECTION