

**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, current version.
- .2 Federal Halocarbon Regulations, current version.
- .3 Ozone-depleting Substances and Halocarbon Alternatives Regulations, current version.
- .4 Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems, current version.
- .5 Canada's Strategy to Accelerate the Phase-Out of CFC and Halons Uses and to Dispose of the Surplus Stocks, CCME, current version.

**Part 2 Products****2.1 NOT USED****Part 3 Execution****3.1 VENTILATION (SYSTEM LIST AND DESCRIPTION)**

- .1 System #1:
  - .1 Location: Penthouse.
  - .2 Use / purpose: supplies general ventilation and cooling to west side of the building, through perimeter terminal reheat units and supply diffusers. The system is connected in a loop to system #2 which supplies the east side of the building in the same general distribution pattern.
  - .3 Description: Indoor built-up heating, ventilation and air conditioning unit composed of a supply fan, chiller water cooling coil, steam heating coil, filter bank, pre-heat coil.
  - .4 Services: 150mm  $\phi$  chilled water supply and return, condensate drain, 150mm  $\phi$  30PSI steam supply, condensate return, electrical supply 40HP – 575/3/60.
- .2 System #1A:
  - .1 Location: Penthouse.

**COMMON WORK RESULTS  
FOR HVAC**

- .2 Use / purpose: returns air from the ground floor to system #1.
- .3 Description: Floor mounted centrifugal fan.
- .4 Services: electrical supply 2HP – 575/3/60.
- .3 System #2:
  - .1 Location: Penthouse.
  - .2 Use / purpose: supplies general ventilation and cooling to west side of the building, through perimeter terminal reheat units and supply diffusers. The system is connected in a loop to system #1 which supplies the west side of the building in the same general distribution pattern.
  - .3 Description: Indoor built-up heating, ventilation and air conditioning unit composed of a supply fan, chiller water cooling coil, steam heating coil, filter bank, pre-heat coil.
  - .4 Services: 150mm  $\phi$  chilled water supply and return, condensate drain, 150mm  $\phi$  30PSI steam supply, condensate return, electrical supply 40HP – 575/3/60.
- .4 System #3-4-5:
  - .1 Location: Penthouse.
  - .2 Use / purpose: general exhaust fan split in 3 zones; system #3 exhausts the basement, system#4 exhausts the 2nd floor, system #5 exhausts the 3rd floor.
  - .3 Description: in-line axial fan.
  - .4 Services: electrical supply 10HP – 575/3/60.
- .5 System #6:
  - .1 Location: Penthouse.
  - .2 Use / purpose: supplies high humidity ventilation and cooling to west side of the building, on 3rd, 2nd and basement floors, through perimeter terminal reheat units and supply diffusers.
  - .3 Description: Indoor built-up heating, ventilation and air conditioning unit composed of a supply fan, chiller water cooling coil, steam heating coil, filter bank, pre-heat coil.
  - .4 Services: 100mm  $\phi$  chilled water supply and return, condensate drain, 75mm  $\phi$  30PSI steam supply, condensate return, electrical supply 25HP – 575/3/60.
- .6 System #10:
  - .1 Location: Basement.
  - .2 Use / purpose:
  - .3 Description: Indoor built-up unit composed of a supply in-line ceiling mounted fan, glycol cooling coil, filter bank, and silencers.
  - .4 Services: 50mm  $\phi$  glycol supply and return, condensate drain, electrical supply 3HP – 575/3/60.
- .7 System #11:
  - .1 Location: Penthouse.
  - .2 Use / purpose:
  - .3 Description: Indoor built-up heating and ventilation unit composed of a supply fan, steam heating coil, filter bank, pre-heat coil.
  - .4 Services: 75mm  $\phi$  30PSI steam supply, condensate return, electrical supply 3HP – 575/3/60.
- .8 Miscellaneous Fans – Penthouse:

**COMMON WORK RESULTS  
FOR HVAC**

- .1 There is a variety of fans on the penthouse other than those part of the systems listed above.
- .2 Fans 6A, 7A and 8A are floor mounted centrifugal exhaust fans, with 2HP or 3HP motors, 575/3/60.
- .3 On the east side of the penthouse, located on a catwalk mezzanine are 24 small PVC or aluminium axial exhaust fans with motors from 1/4HP to 1HP, 120/1/60.
- .4 On the west side of the penthouse, located on a catwalk mezzanine are 24 small PVC or aluminium axial exhaust fans with motors from 1/4HP to 1HP, 120/1/60.
- .9 VAV Terminal Units with Electrical Duct Heaters:
  - .1 Location: Third floor.
  - .2 Description: Seven (7) VAV terminal units supply or return a few rooms on the third floor, combined to electrical duct heaters in a few locations.
  - .3 Services: Controls, electrical supply 208V/3/60.
- .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 awarded 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 The decommissioning of the ventilation systems must be coordinated with the decontamination process. The Contractor must obtain written confirmation that decontamination has been completed before beginning demolition work.
  - .2 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.

**3.2 COOLING**

- .1 System Description:
  - .1 The A large chiller located in the basement mechanical room has been decommissioned some time ago but has not been demolished. Chilled water supply and return now come from the Tunney's Pasture Heating and Cooling plant and is distributed up to the cooling coils of systems No.1 and No.2.
- .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.

**COMMON WORK RESULTS  
FOR HVAC**

- .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.

**3.3 HEATING**

- .1 System Description:
  - .1 Heating is provided by high pressure steam produced in the Tunney's Pasture Heating and Cooling plant. The steam comes in the building into a high-pressure header. Two pressure reducing stations drop the steam pressure to supply various heating equipment such as: domestic hot water heat exchangers, heating coils in systems No.1, No.2, No.6, No.9 and No.11, unit heaters, terminal reheat coils, perimeter radiator heating system. A condensate receiver tank and pumps return the condensate to the plant.
- .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 pressure steam supply. 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 leaving 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 Departmental Representative for coordination with the plant. Work can only be done once a written confirmation has been received by the contractor.

**3.4 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 19 - Construction/Demolition Waste Management.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**END OF SECTION**