



HVAC SPECIFICATION

WITS ORIGIN CENTER

WITS UNIVERSITY

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PART V – DETAILED SPECIFICATION

1.1 DESCRIPTION OF SYSTEM

1.1.1 PROJECT DESCRIPTION

Wits are doing the following for the Wits Origin Centre Building:

Warehouse/office area:

- Adding a new mechanical fresh air system for the:
 - 7 Offices within the warehouse of the Origins Centre
 - 1 Large meeting room
- Air-conditioning to the boardroom
- General Ventilation to the warehouse space.

Museum:

- Replace two existing package units. The existing two package units are constant volume will be replaced with constant volume units.
- Add an additional package unit to provide dedicated cooling to the space labelled Rain making.

1.1.2 DESIGN CRITERIA

The design conditions to be maintained are as follows (within acceptable ASHRAE design conditions):
22.5 C + 1.5 C (21C to 24C allowable) and 30-60%RH can be expected (RH not controlled)

The above conditions will be maintained when the ambient conditions are as follows:

Summer – :32.0 C Dry Bulb and 20C Wet Bulb and full solar load

Winter – :2 C Dry Bulb and no solar load

1.1.3 DRAWING INDEX

REFER TO THE DRAWING REGISTER ATTACHED TO THIS DOCUMENT.

1.2 V.E. – EQUIPMENT SCHEDULES

DX Split Units

- 1 of Hideaway Split Type Units c/w condensing unit, filter, 20m refrigerant piping between indoor and outdoor unit, fixing and all necessary fittings, wire basket cable trays and supports, galvanised trunking and covers, joints, fixings and accessories, flex, insulation, wiring, power, remote wired sensor, 20m 25mm dia PVC condensate drain piping, all electrics and controls, complete as shown on drawings and as per specifications to make it a complete working installation. Including installation. Total coil load = 6.6kW, Sensible coil load = 5.2kW, Split DX AC Hide Away Unit (AC01)

- Midwall Split Type Units c/w condensing unit, filter, 20m refrigerant piping between indoor and outdoor unit, fixing and all necessary fittings, wire basket cable trays and supports, galvanised trunking and covers, joints, fixings and accessories, flex, insulation, wiring, power, remote wired sensor, 20 metres 25mm dia PVC condensate drain piping, all electrics and controls, complete as shown on drawings and as per specifications to make it a complete working installation. Including Installation. Total cooling coil load = 4.7kW, Sensible cooling coil load = 4.5kW, Total heating coil load = 5.5kW, DX Split Midwall AC Unit.

FRESH AIR FAN:

- Ø315 Mixed Flow Type In-Line Fan Duty 334l/s @250Pa ESP, CW Timer, 2-off 1.5D Sound Attenuators (FAF01)
- Ø710 4-Pole Axial Fan, Duty 334l/s @250Pa ESP, CW Timer, 2-off 1.5D Sound Attenuators + POD (FAF02)

EXTRACTION AIR FAN:

- Ø710 4-Pole Axial Fan, Duty 334l/s @150Pa ESP, CW Timer, 2-off 1.5D Sound Attenuators + POD (EAF01)

CEILING FAN:

- Ø300 AIR CIRCULATING CEILING FAN C/W REMOTE

ROOFTOP PACKAGE UNIT:

Rooftop AC Packaged Unit c/w filter, return air plenum, 2x averaging sensors (allow for 25m for each sensor from the unit), inverter compressors, reverse cycle (Heat pump), fresh air and return air dampers, on board digital display, EC Plug Fan for 300Pa ESP, Integral Switchboard, condensate drain set c/w S-Trap, fixing and all necessary fittings, supports, joints, fixings and accessories, duct-flexible collars, insulation, complete as shown on drawings and as per specifications and RTPU Schedule. TC133.81kW, SC97.6kW, SA = 7755l/s, FA = 990l/s.

ROOFTOP PACKAGE UNIT 2:

Rooftop AC Packaged Unit c/w filter, return air plenum, 2x averaging sensors (allow for 25m for each sensor from the unit), inverter compressors, reverse cycle (Heat pump), fresh air and return air dampers, on board digital display, EC Plug Fan for 300Pa ESP, Integral Switchboard, condensate drain set c/w S-Trap, fixing and all necessary fittings, supports, joints, fixings and accessories, duct-flexible collars, insulation, complete as shown on drawings and as per specifications and RTPU Schedule. TC48.06kW, SC36.22kW, SA = 3000l/s, FA = 250l/s

ROOFTOP PACKAGE UNIT 3:

Rooftop AC Packaged Unit c/w economy cycle, filter, return air plenum, CO2 sensors, 2x averaging sensors (allow for 25m for each sensor from the unit), inverter compressors, reverse cycle (Heat pump), motorised fresh air and return air dampers, on board digital display, EC Plug Fan for 300Pa ESP, Integral Switchboard, condensate drain set c/w S-Trap, fixing and all necessary fittings, supports, joints, fixings and accessories, duct-flexible collars, insulation, complete as shown on drawings and as per specifications and RTPU Schedule. TC38.4kW, SC26.3kW, HC23.1kW, SA = 1445l/s, FA = 1140l/s.

1.3 BILLS OF QUANTITIES

TO BE COMPLETED BY TENDERER AND
SUBMITTED WITH HIS / HER TENDER

NOTE: It is the tenderer's responsibility to ensure the Bill of Quantities ties up with the Drawings, Specification and Equipment Schedule, any deviances or discrepancies should be noted and clarified.

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