

- 6.5.3.2** The electric panel heater shall come complete with integral controls incorporating a weekly time schedule, including night-time setback for frost protection.

6.5.4 Distribution Strategy

6.5.5 Event Space

- 6.5.5.1** Refrigerant pipework shall emanate from the DX-split heat pump as indicated on the combined mechanical services layout drawing.
- 6.5.5.2** The DX-split system shall be connected by a 2-pipe refrigerant circuit to their respective FCU, providing heating and cooling to achieve the required comfort conditions of the area.
- 6.5.5.3** All refrigerant pipework shall run within dedicated containment.
- 6.5.5.4** Refer to the Materials and Workmanship Specification for further information on pipework joints, insulation, fittings, fixings, supports, expansion, and ancillaries.

6.5.6 Cooling System

6.5.7 DX Split System - Event Space

- 6.5.7.1** Refer to section 6.5.2

6.5.8 Condensate

- 6.5.8.1** Gravity condensate drains shall be provided, refer to above ground drainage (AGD) layout drawing(s).

6.6 Ventilation Systems

6.6.1 Performance Objectives

- 6.6.1.1** The Contractor shall design, supply, test, commission and set to work a complete ventilation installation inclusive of all necessary plant, distribution equipment, controls etc. to provide a fully functional safe and energy efficient system.
- 6.6.1.2** The contractor shall test and commission the ventilation systems in line with the requirements defined within CIBSE Commissioning Code A: Air Distribution Systems

- 6.6.2.1** The internal spaces shall be served with fresh air by a means of mechanical ventilation, supplemented with natural ventilation via manually openable windows/doors.
- 6.6.2.2** Ventilation air distribution ductwork shall be to HVCA DW144 standard with all necessary fittings, dampers, access points, and grilles/diffusers.
- 6.6.2.3** Galvanised side entry plenum boxes shall be attached to the back of weather rated louvres. Spigot connection shall match the adjoining ductwork diameter.
- 6.6.2.4** Where flexible ductwork is installed, the contractor shall ensure the maximum length does not exceed 500mm. All flexible ductwork shall be free from knots and be well supported to avoid sagging. Refer also to the mechanical and workmanship specification for details of flexible ductwork connections.
- 6.6.2.5** Weather rated louvres shall meet HEVAC B2 classification to minimise water ingress.

6.6.4 00/MVHR/01 – Event Space

- 6.6.4.1** The outside air shall be drawn in through insulated ductwork emanating from a swan inlet terminal above the roof c/w insect mesh.
- 6.6.4.2** Extract air shall exhaust to atmosphere through insulated ductwork connected to a weather rated louvre, c/w insect mesh.
- 6.6.4.3** The MVHR shall pre-heat/pre-cool the incoming air via the thermal wheel heat exchanger.
- 6.6.4.4** The MVHR shall be provided with an integral control system with a touch screen interface.
- 6.6.4.5** The ventilation system shall operate at a constant volume flow rate and shall be activated/disabled on time control.
- 6.6.4.6** The contractor shall agree the time schedule with the client prior to commissioning.

6.6.5.1 Access doors shall be provided to satisfy all access and cleaning requirements as scheduled in DW/144 and TR19.

- 6.6.5.2** Access doors shall be installed no greater than 600mm from the item/equipment.
- 6.6.5.3** It is the Contractor's responsibility to position the access doors to avoid other services and still maintain clear access to the door. Any access doors rendered not fully accessible when the installation is completed shall be supplemented with additional site fitted access doors positioned to overcome the access issues.
- 6.6.6 Noise Control**
- 6.6.6.1** Attenuation shall be provided to the general ventilation system to achieve a room noise rating of NR35-40
- 6.6.6.2** All acoustic control equipment shall be provided to meet the requirements of the Materials and Workmanship Specification and as detailed within this specification.
- 6.6.7 Insulation**
- 6.6.7.1** Refer to materials & workmanship specification.
- 6.6.8 Natural Ventilation**
- 6.6.8.1** A passive approach to ventilation shall be adopted wherever feasible.
- 6.6.8.2** Natural ventilation is reliant on wind pressure and temperature difference. The Work Stage 4 design of these spaces has been carried out in accordance with the guidance in CIBSE Guide A, CIBSE Applications Manual 10 and all other relevant guidance and standards.
- 6.6.9 Event Space**
- 6.6.10** The event space shall be provided with mixed mode ventilation. During general operating conditions (max occupancy of 22 people), the fresh air requirements shall be met via the means of mechanical ventilation, as outlined in section 6.6.4. During times where special events are hosted and when the occupancy exceeds 22 people, the additional fresh air requirements shall be met via

the means of natural ventilation, via manually openable windows/doors.

6.6.11 For details of the free area requirement, please refer to the mechanical services drawing.

6.6.12 The free area stated has been sized to ensure the internal CO₂ conditions do not exceed 1200PPM for a prolonged period.

6.6.13 Welcome Kiosk

6.6.13.1 Fresh air requirements to the welcome kiosk shall be achieved via manually openable windows.

6.6.13.2 High level opening windows have been incorporated as shown on the combined mechanical services layout drawing.

6.6.13.3 The windows available free area has been sized to provide adequate ventilation to achieve a comfortable environment, in line with TM52: The limits of thermal comfort: Avoiding overheating in European buildings.

6.6.13.4 For details of the free area requirement, please refer to the mechanical services drawing.