UPN016 – Medical Science & Anatomy – Compliance Project – Planning Application Darwin Building

Overview

Both AHU1 and AHU2 are dedicated to the BSU on level 4 Medical Science and Anatomy Building but are located on the adjacent building Roof (Darwin Building) and are to be replaced with new units to ensure that the air supplied into the facility meets Home Office requirements.

To ensure that the air supplied by the two AHUs is at the correct temperature and humidity an external mounted humidifier will be required. The two existing condenser units will also be replaced 8 outdoor condensers units. In all the plant being installed on the roof is as follows:

2nr AHUs (Replacing the two existing)

1nr Humidifier

8nr Condensers (Replacing the two existing)

The plant will be located on Darwin Roof which is 23.5m above Gower Street and with AHU 2, the Humidifier and nr condenser units being mounted on a steel platform 3m higher than the roof level.

It has been established that the existing ductwork from AHU 1 is undersized and will therefore require larger ductwork in lieu of the existing to meet the Home Office Requirements. The new ductwork be routed in the same route but is 100mm wider and 50mm deeper. This is deemed a minimal change which cannot be seen from the ground or from the nearest building. Insulation thickness will be 50 mm the same thickness as the existing insulation.

The two AHUs as well as two of the condensers will be sited in the same location as the existing units, but as there is more equipment being installed than what is currently there additional space needs to be utilised to facilitate the installation.

Very little of the proposed plant will be visible from Gower Street and most of which is already visible, so there is minimal change to what is currently visible from Gower Street. Fig.1 shows a picture of the existing plant taken from Gower Street with the proposed work annotated.

Fig.1 Image of Darwin Roof From Gower Street

Location of Building and Plant

The location of Darwin building and the existing equipment can be seen on the below location and layout drawing, with the new locations of the additional plant identified in green and the replaced plant identified in yellow.

Dimensions of equipment

Equipment (Quantity)	Dimensions	Existing (mm)	Proposed (mm)
AHU 1	Length	2500	3150
	Width	2200	2000
	Height	2250 + 800	2670 + 800
AHU 2	Length	3500	2625
	Width	1050	1334
	Height	1200	1700
Condensers	Length	1200	1050
	Depth	420	417
	Height	1500	1335
Humidifier	Length	N/A	646
	Depth	N/A	467
	Height	N/A	1400

Table 1 Dimensions of Equipment

Specification Sheet

Images

AHU 1

Fig 2. Existing AHU1 Being Replaced

The replacement AHU will have the same configuration for the ductwork on system and atmosphere side of the unit. Dimensions are therefore taken of unit only, with an allowance of +800mm shown in table 1.

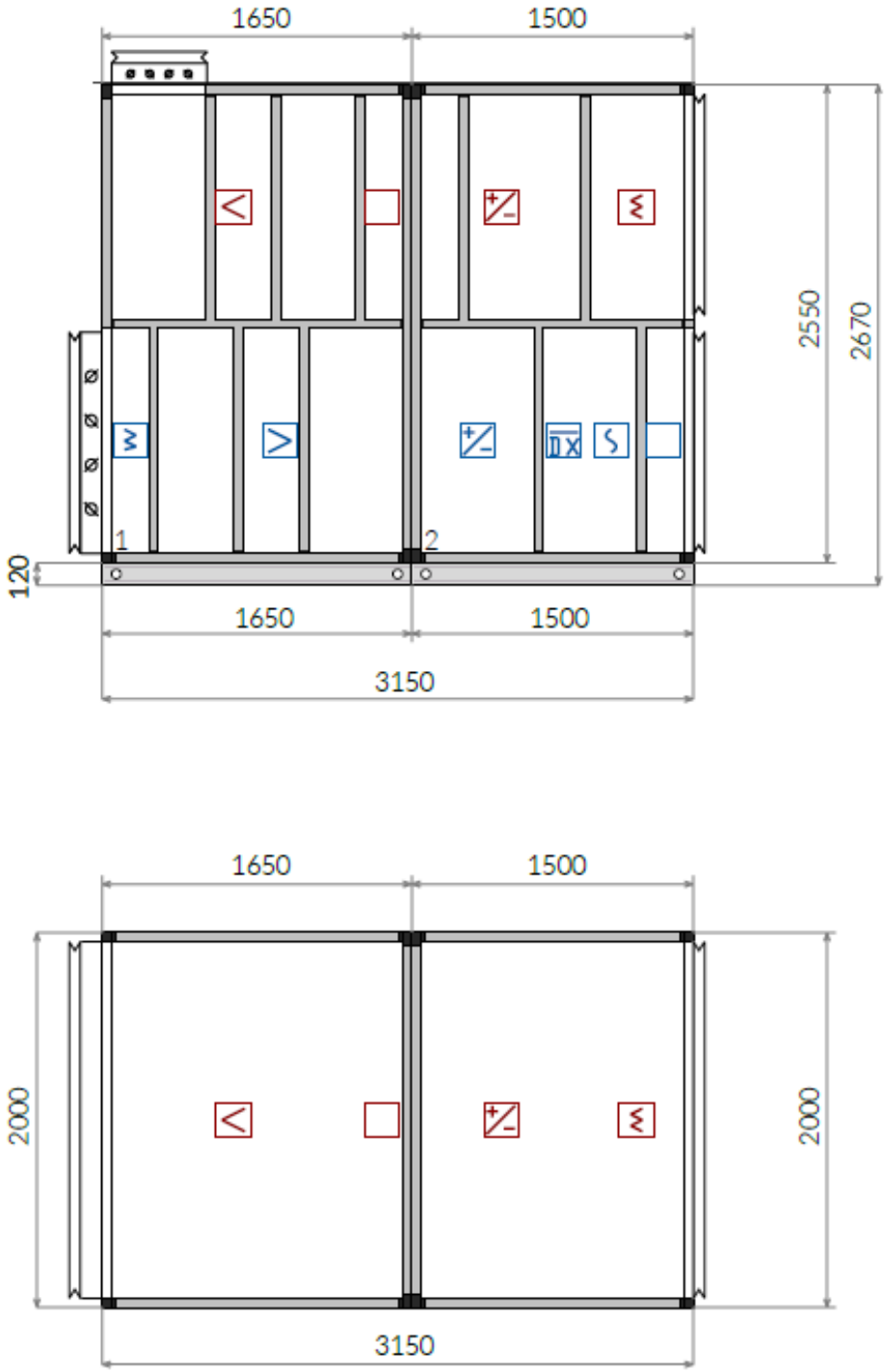

Fig 3. Proposed Replacement AHU1

AHU 2

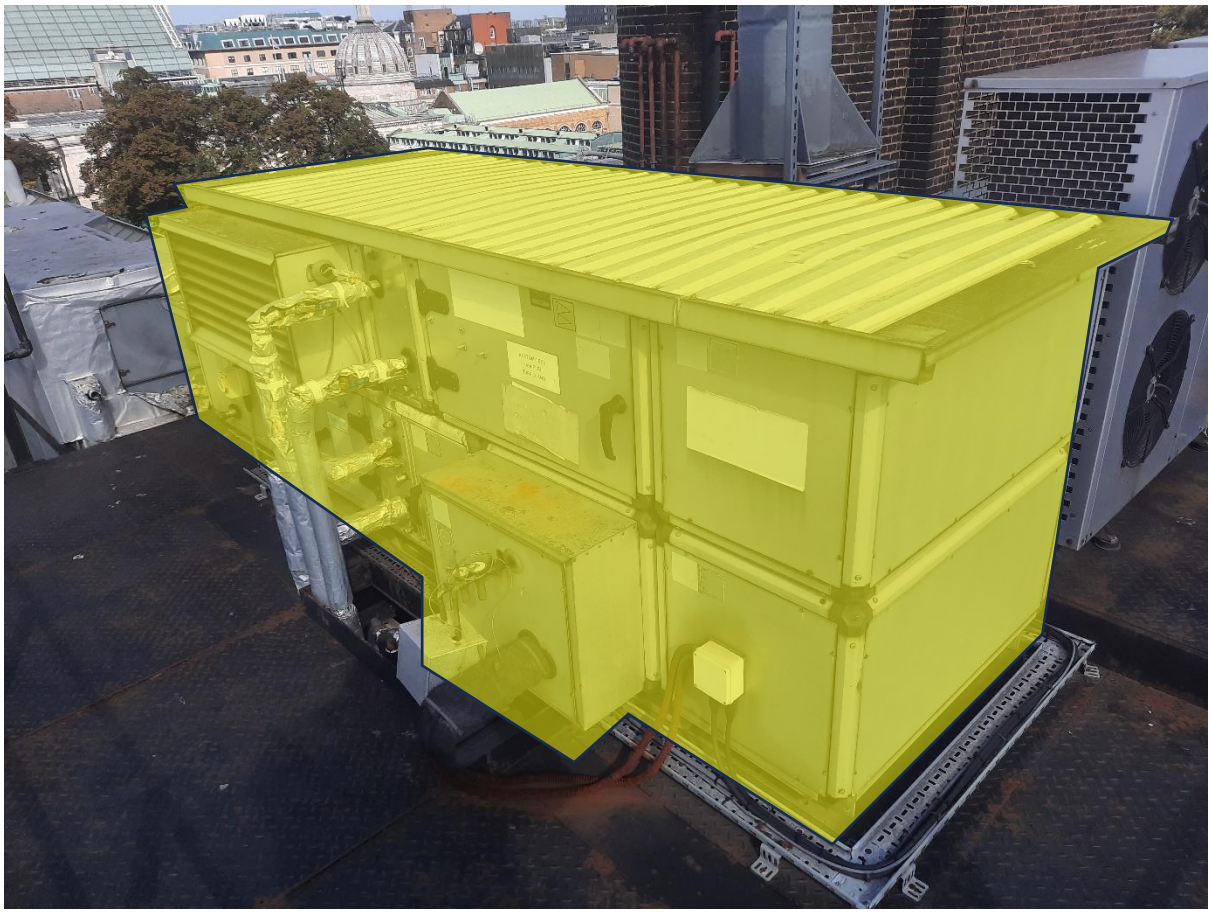

Fig 4. Existing AHU2 Being Replaced

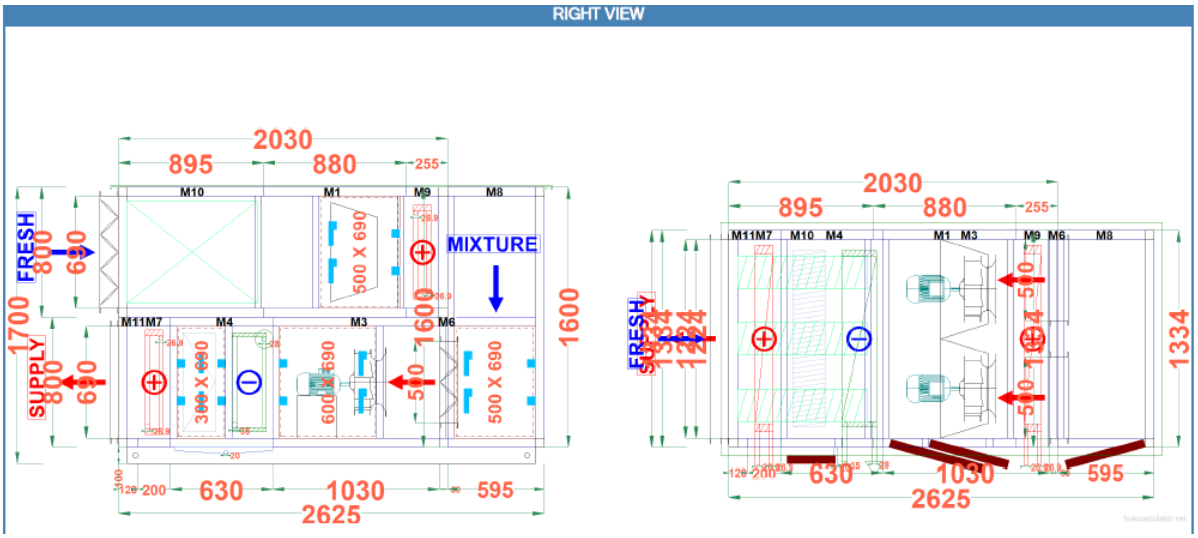

Fig 5. Proposed Replacement AHU2

Condenser

Fig 6. Existing Condenser Units to be replaced

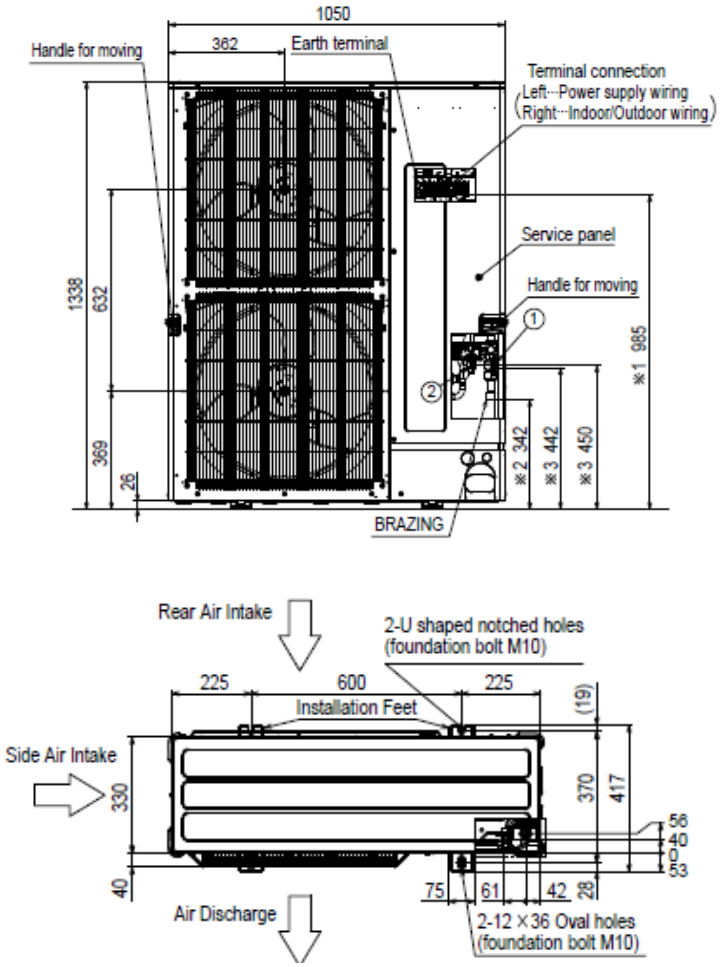

Fig 7. Proposed Replacement Condenser Units

Fig .8 Proposed Additional Condenser Locations

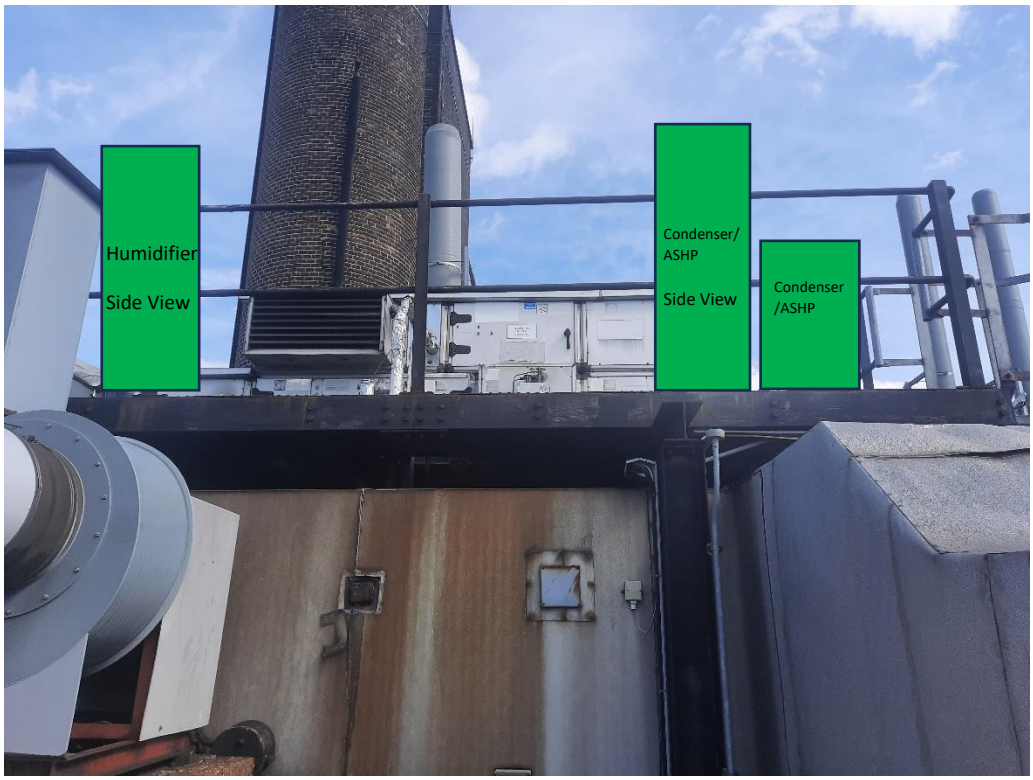

Fig .9 Proposed Additional Condenser and Humidifier Locations

Humidifier

For proposed Humidifier location please see figure 9 above.

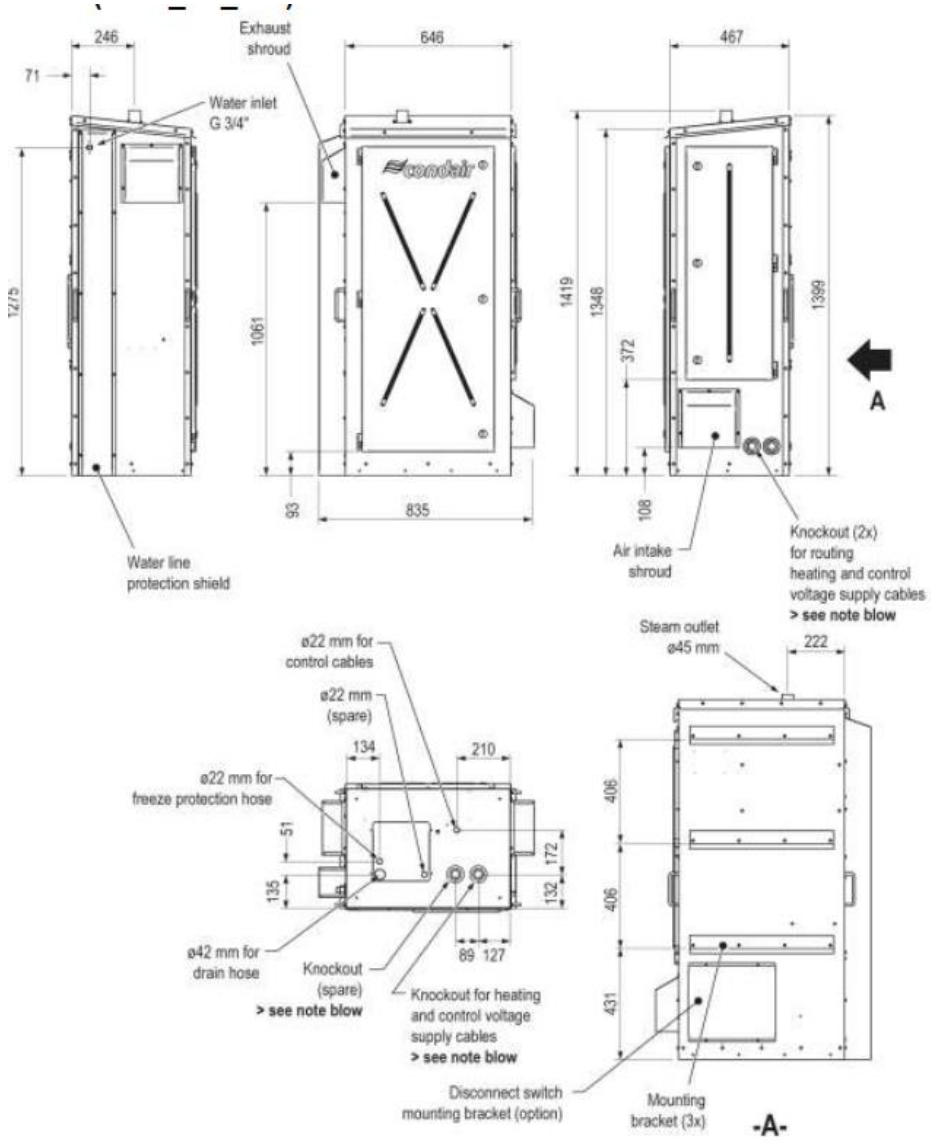

Fig .10 New Humidifier Dimensions

Fig 11. New Humidifier Image