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# Oriol

## Planning Condition 29 Intake and Emissions sources locations

	Name	Date
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Checked	Ryan Dunne	06/12/2023
Approved	Ryan Dunne	06/12/2023

<b>NTS @ A4</b>
SCALE & FORMAT

<b>Project Stage:4</b>
PROJECT STAGE

<b>D5: Issued for Planning</b>
SUITABILITY CODE

**ORL**

PROJECT

**ARP**

ORIGINATOR

**ZZ**

FUNCTIONAL  
BREAKDOWN

**ZZ**

SPACIAL  
BREAKDOWN

**TRP**

FORM

**J**

DISCIPLINE

**000020**

NUMBER

**P02**

REVISION

P02	06/12/2023	Issued for Planning
P01	27/11/2023	Issued for Planning

REV	Date	Revision Title
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**ALL REVISIONS**

**Subject** Oriel Planning Condition 29 Discharge  
**Job No/Ref** 277680-00  
**Date** 6th Decemeber 2023

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## 1. Planning Condition 29

Prior to commencement of above-ground development, full details of the mechanical ventilation system including air inlet locations shall be submitted to and approved by the local planning authority in writing. Air inlet locations should be located away from busy roads and the generator exhaust stack, catering exhausts or any other emission sources and as close to roof level as possible, to protect internal air quality. The development shall thereafter be constructed and maintained in accordance with the approved details.

## 2. Evidence

### 2.1.1 Mechanical Ventilation Systems description.

#### *Plant*

Oriel is entirely mechanically ventilated except for the emergency medical gas manifold room on the 4<sup>th</sup> floor and the radiology Air Handling Units (AHU) plant room on the lower ground. All the systems are Full Fresh air with no recirculation. No openable windows are present in the development.

- 4 units are located on the lower ground floor
- 29 units are located on the fourth floor.
- 3 units are located on the 8<sup>th</sup> floor
- 2 units are located on the 6<sup>th</sup> floor
- 2 units are located on the 7<sup>th</sup> Floor
- 6 units are located across the 9/10<sup>th</sup> floor

The tissue centre located on the 8<sup>th</sup> floor is yet undesignated at the time of this submission and the design for this has yet to be fully defined.

All AHUs include air filtration, heating and cooling, the biological services units are the only units in the development that have steam humidification which is generated locally using electricity and water.

#### *Smoke Exhaust Systems*

The following areas have systems for smoke control/extract.

- Stair Cores in accordance with Approved document B
- Basement and Lower ground areas in accordance with Approved document B
- Atrium
- Loading Bay

#### *Local Ventilation units*

There are some areas that are not served by bespoke AHUs. Plant areas and shared spaces utilise packaged ventilation units mounted in ceiling voids which draw air from the façade locally, either through high-level louvres above windows or full height louvre plenums connected to louvres in plant areas.

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## *Room design*

There are various design strategies that are employed to provide ventilation to rooms and their associated heating and cooling requirements. Fresh air is supplied to rooms using supply diffusers typically come across the following types of heating and cooling terminal devices are installed across the development.

- Active Chilled beams
- Fan Coil units
- Wet heater batteries

Active Chilled beams provide fresh air to spaces in lieu of ventilation diffusers in some rooms.

There are a mix of ventilation rates basis, fixed air change rates for specialist healthcare and lab areas and per person ventilation rates for the remaining areas based upon expected occupancy. The basis for the ventilation rates per person is 12l/s/person.

### **2.1.2 Inlet and exhaust Locations**

Generator Exhaust stack locations are located at the roof of the building and discharge vertically. They are located as indicated in the images below.

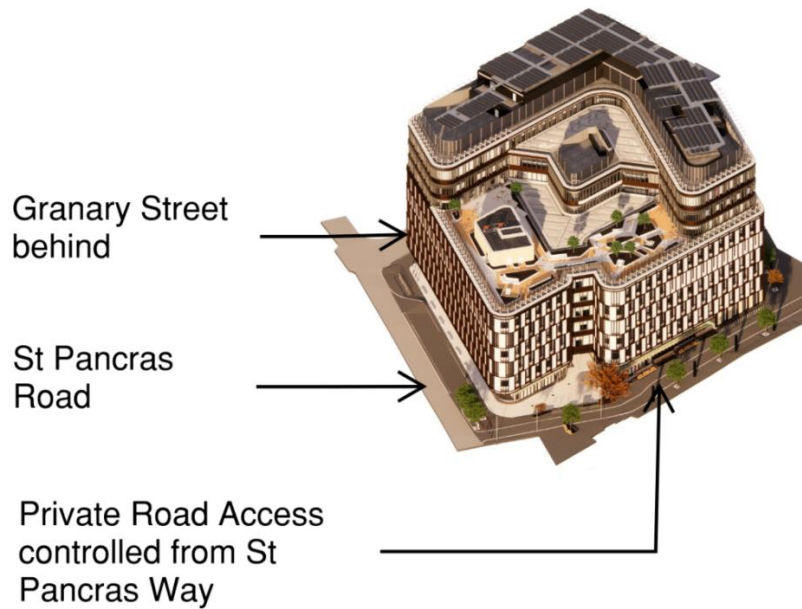
Air inlets for mechanical ventilation for the building. Are in various locations:

- A. At ground level on the south side of the building
- B. On the fourth floor on all elevations (Indicated in Blue)
- C. On the eighth floor on the northwest elevation
- D. At the sixth floor on the pavilion structure on the terrace
- E. At the roof level at the top of core D
- F. On the sixth floor at high level on south elevation
- G. On the Seventh floor at high level on the northeast elevation
- H. On the tenth floor at high level on the north elevation
- I. At the high level on the 6 the floor on the north east elevation
- J. High Level on East Façade on the upper ground floor
- K. High Level adjacent on the upper ground floor on the north facade (plant room only)
- L. High Level adjacent on the upper ground floor on the north façade

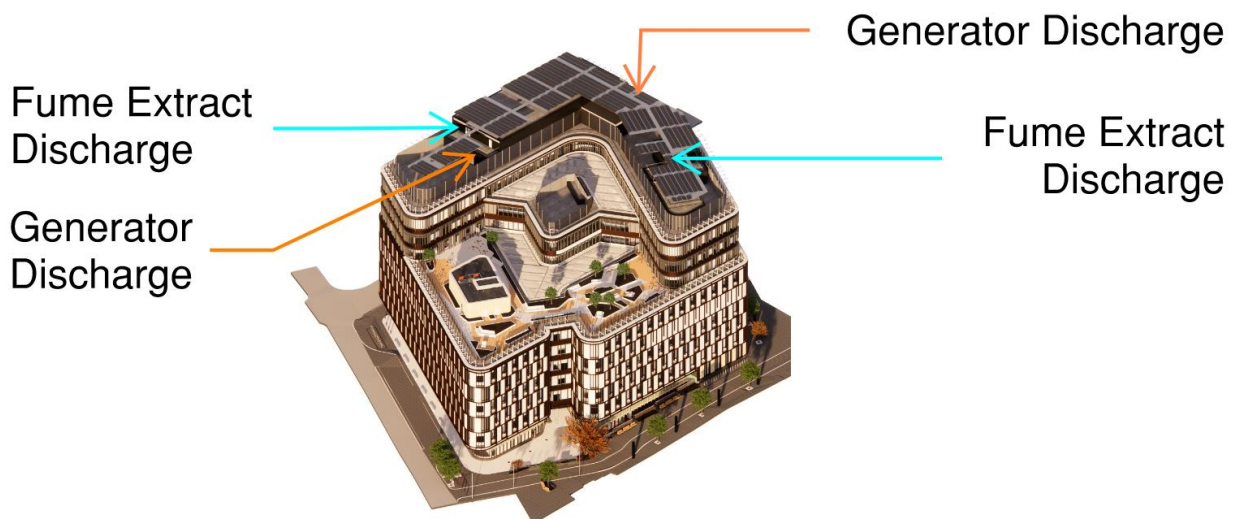
These are shown in detail on the images included in this File Note.

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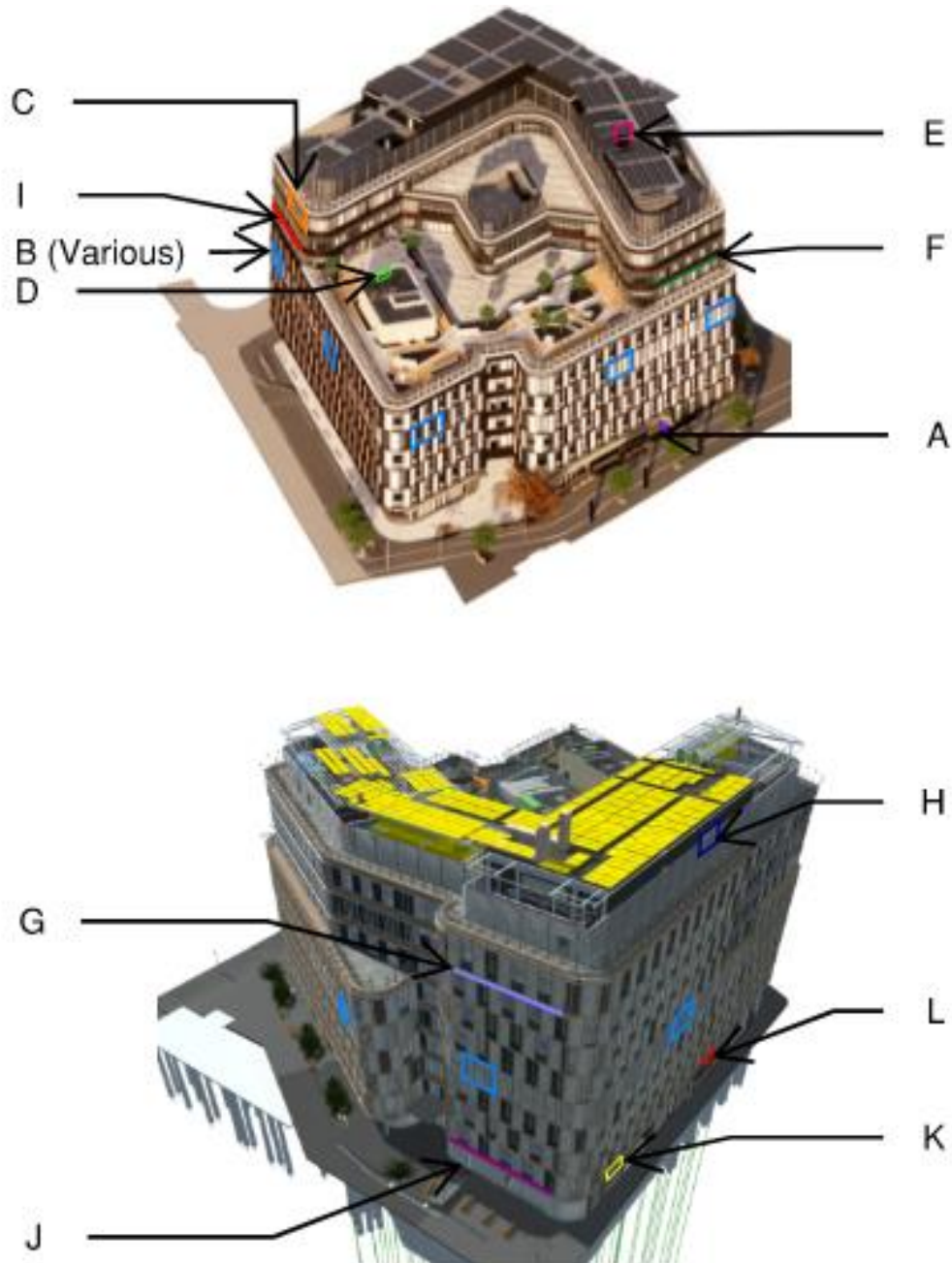
**Figure 1 - Contextual 3D view of development - Southwest view**



**Figure 2 - Emission Source Discharge locations**

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**Figure 3 - Location of air inlets South West View Top North east view Bottom**

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## Appendix 1 – Mechanical Ventilation Drawings and Document List

Document Number	Document Title
<b>Ventilation Specification</b>	
ORL-ARP-XX-XX-TSP-M-00003	Ventilation System Specification

Drawing Number	Drawing Title	Drawing Number	Drawing Title
<b>Ventilation Layouts</b>			
ORL-ARP-ZD-B1 -DPL-M-004501	Ventilation Layout, Basement Floor, Zone D	ORL-ARP-ZA-02-DPL-M-004526	Ventilation Layout, Second Floor, Zone A
ORL-ARP-ZC-08-DPL-M-004570	Ventilation Layout, Eighth Floor, Zone C	ORL-ARP-ZB-02-DPL-M-004527	Ventilation Layout, Second Floor, Zone B
ORL-ARP-ZD-08-DPL-M-004571	Ventilation Layout, Eighth Floor, Zone D	ORL-ARP-ZC-02-DPL-M-004528	Ventilation Layout, Second Floor, Zone C
ORL-ARP-ZH-08-DPL-M-004574	Ventilation Layout, Eighth Floor, Zone H	ORL-ARP-ZD-02-DPL-M-004529	Ventilation Layout, Second Floor, Zone D
ORL-ARP-ZA-05-DPL-M-004550	Ventilation Layout, Fifth Floor, Zone A	ORL-ARP-ZE-02-DPL-M-004530	Ventilation Layout, Second Floor, Zone E
ORL-ARP-ZB-05-DPL-M-004551	Ventilation Layout, Fifth Floor, Zone B	ORL-ARP-ZF-02-DPL-M-004531	Ventilation Layout, Second Floor, Zone F
ORL-ARP-ZC-05-DPL-M-004552	Ventilation Layout, Fifth Floor, Zone C	ORL-ARP-ZG-02-DPL-M-004532	Ventilation Layout, Second Floor, Zone G
ORL-ARP-ZD-05-DPL-M-004553	Ventilation Layout, Fifth Floor, Zone D	ORL-ARP-ZH-02-DPL-M-004533	Ventilation Layout, Second Floor, Zone H
ORL-ARP-ZE-05-DPL-M-004554	Ventilation Layout, Fifth Floor, Zone E	ORL-ARP-ZB-07-DPL-M-004564	Ventilation Layout, Seventh Floor, Zone B
ORL-ARP-ZF-05-DPL-M-004555	Ventilation Layout, Fifth Floor, Zone F	ORL-ARP-ZC-07-DPL-M-004565	Ventilation Layout, Seventh Floor, Zone C
ORL-ARP-ZG-05-DPL-M-004556	Ventilation Layout, Fifth Floor, Zone G	ORL-ARP-ZD-07-DPL-M-004566	Ventilation Layout, Seventh Floor, Zone D
ORL-ARP-ZH-05-DPL-M-004557	Ventilation Layout, Fifth Floor, Zone H	ORL-ARP-ZE-07-DPL-M-004567	Ventilation Layout, Seventh Floor, Zone E
ORL-ARP-ZA-01-DPL-M-004518	Ventilation Layout, First Floor, Zone A	ORL-ARP-ZF-07-DPL-M-004568	Ventilation Layout, Seventh Floor, Zone F
ORL-ARP-ZB-01-DPL-M-004519	Ventilation Layout, First Floor, Zone B	ORL-ARP-ZH-07-DPL-M-004569	Ventilation Layout, Seventh Floor, Zone H

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Drawing Number	Drawing Title	Drawing Number	Drawing Title
ORL-ARP-ZC-01-DPL-M-004520	Ventilation Layout, First Floor, Zone C	ORL-ARP-ZB-06-DPL-M-004558	Ventilation Layout, Sixth Floor, Zone B
ORL-ARP-ZD-01-DPL-M-004521	Ventilation Layout, First Floor, Zone D	ORL-ARP-ZC-06-DPL-M-004559	Ventilation Layout, Sixth Floor, Zone C
ORL-ARP-ZE-01-DPL-M-004522	Ventilation Layout, First Floor, Zone E	ORL-ARP-ZD-06-DPL-M-004560	Ventilation Layout, Sixth Floor, Zone D
ORL-ARP-ZF-01-DPL-M-004523	Ventilation Layout, First Floor, Zone F	ORL-ARP-ZE-06-DPL-M-004561	Ventilation Layout, Sixth Floor, Zone E
ORL-ARP-ZG-01-DPL-M-004524	Ventilation Layout, First Floor, Zone G	ORL-ARP-ZF-06-DPL-M-004562	Ventilation Layout, Sixth Floor, Zone F
ORL-ARP-ZH-01-DPL-M-004525	Ventilation Layout, First Floor, Zone H	ORL-ARP-ZH-06-DPL-M-004563	Ventilation Layout, Sixth Floor, Zone H
ORL-ARP-ZA-04-DPL-M-004542	Ventilation Layout, Fourth Floor, Zone A	ORL-ARP-ZC-10-DPL-M-004581	Ventilation Layout, Tenth Floor, Zone C
ORL-ARP-ZB-04-DPL-M-004543	Ventilation Layout, Fourth Floor, Zone B	ORL-ARP-ZD-10-DPL-M-004582	Ventilation Layout, Tenth Floor, Zone D
ORL-ARP-ZC-04-DPL-M-004544	Ventilation Layout, Fourth Floor, Zone C	ORL-ARP-ZE-10-DPL-M-004583	Ventilation Layout, Tenth Floor, Zone E
ORL-ARP-ZD-04-DPL-M-004545	Ventilation Layout, Fourth Floor, Zone D	ORL-ARP-ZF-10-DPL-M-004584	Ventilation Layout, Tenth Floor, Zone F
ORL-ARP-ZE-04-DPL-M-004546	Ventilation Layout, Fourth Floor, Zone E	ORL-ARP-ZA-03-DPL-M-004534	Ventilation Layout, Third Floor, Zone A
ORL-ARP-ZF-04-DPL-M-004547	Ventilation Layout, Fourth Floor, Zone F	ORL-ARP-ZB-03-DPL-M-004535	Ventilation Layout, Third Floor, Zone B
ORL-ARP-ZG-04-DPL-M-004548	Ventilation Layout, Fourth Floor, Zone G	ORL-ARP-ZC-03-DPL-M-004536	Ventilation Layout, Third Floor, Zone C
ORL-ARP-ZH-04-DPL-M-004549	Ventilation Layout, Fourth Floor, Zone H	ORL-ARP-ZD-03-DPL-M-004537	Ventilation Layout, Third Floor, Zone D
ORL-ARP-ZA-LG-DPL-M-004502	Ventilation Layout, Lower Ground Floor, Zone A	ORL-ARP-ZE-03-DPL-M-004538	Ventilation Layout, Third Floor, Zone E
ORL-ARP-ZB-LG-DPL-M-004503	Ventilation Layout, Lower Ground Floor, Zone B	ORL-ARP-ZF-03-DPL-M-004539	Ventilation Layout, Third Floor, Zone F
ORL-ARP-ZC-LG-DPL-M-004504	Ventilation Layout, Lower Ground Floor, Zone C	ORL-ARP-ZG-03-DPL-M-004540	Ventilation Layout, Third Floor, Zone G
ORL-ARP-ZD-LG-DPL-M-004505	Ventilation Layout, Lower Ground Floor, Zone D	ORL-ARP-ZH-03-DPL-M-004541	Ventilation Layout, Third Floor, Zone H
ORL-ARP-ZE-LG-DPL-M-004506	Ventilation Layout, Lower Ground Floor, Zone E	ORL-ARP-ZA-UG-DPL-M-004510	Ventilation Layout, Upper Ground Floor, Zone A



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ORL-ARP-ZF-LG-DPL-M-004507	Ventilation Layout, Lower Ground Floor, Zone F	ORL-ARP-ZB-UG-DPL-M-004511	Ventilation Layout, Upper Ground Floor, Zone B
ORL-ARP-ZG-LG-DPL-M-004508	Ventilation Layout, Lower Ground Floor, Zone G	ORL-ARP-ZC-UG-DPL-M-004512	Ventilation Layout, Upper Ground Floor, Zone C
ORL-ARP-ZH-LG-DPL-M-004509	Ventilation Layout, Lower Ground Floor, Zone H	ORL-ARP-ZD-UG-DPL-M-004513	Ventilation Layout, Upper Ground Floor, Zone D
ORL-ARP-ZC-09-DPL-M-004575	Ventilation Layout, Ninth Floor, Zone C	ORL-ARP-ZE-UG-DPL-M-004514	Ventilation Layout, Upper Ground Floor, Zone E
ORL-ARP-ZD-09-DPL-M-004576	Ventilation Layout, Ninth Floor, Zone D	ORL-ARP-ZF-UG-DPL-M-004515	Ventilation Layout, Upper Ground Floor, Zone F
ORL-ARP-ZE-09-DPL-M-004577	Ventilation Layout, Ninth Floor, Zone E	ORL-ARP-ZG-UG-DPL-M-004516	Ventilation Layout, Upper Ground Floor, Zone G
ORL-ARP-ZF-09-DPL-M-004578	Ventilation Layout, Ninth Floor, Zone F	ORL-ARP-ZH-UG-DPL-M-004517	Ventilation Layout, Upper Ground Floor, Zone H
Ventilation Schematics		ORL-ARP-ZA-02-DPL-M-004526	Ventilation Layout, Second Floor, Zone A
ORL-ARP-XX-XX-GSC-M-004301	Ventilation Summary Systems Schematic	ORL-ARP-ZB-02-DPL-M-004527	Ventilation Layout, Second Floor, Zone B
ORL-ARP-XX-XX-GSC-M-004306			
OPERATING THEATRE AHU-04-01			
ORL-ARP-XX-XX-GSC-M-004307	OPERATING THEATRE 2 L03 AHU-04-02	ORL-ARP-XX-XX-GSC-M-004330	SURGICAL SERVICE RECOVERY L03 AHU-04-24
ORL-ARP-XX-XX-GSC-M-004308	OPERATING THEATRE 3 L03 AHU-04-03	ORL-ARP-XX-XX-GSC-M-004331	SURGICAL SERVICE RECOVERY L02 & L03 AHU-04-25
ORL-ARP-XX-XX-GSC-M-004309	OPERATING THEATRE 4 L03 AHU-04-04	ORL-ARP-XX-XX-GSC-M-004343	BIOLOGICAL SERVICES UNIT GENERAL SUPPLY & EXTRACT AHU-10-01,02,03 & 04
ORL-ARP-XX-XX-GSC-M-004310	OPERATING THEATRE 5 L03 AHU-04-05	ORL-ARP-XX-XX-GSC-M-004344	BIOLOGICAL SERVICES UNIT IVC SUPPLY AND EXTRACT AHU-09-01,02,03&04
ORL-ARP-XX-XX-GSC-M-004311	OPERATING THEATRE 6 L03 AHU-04-06	ORL-ARP-XX-XX-GSC-M-004332	SURGICAL SERVICE RECOVERY L02 & L03 AHU-04-26
ORL-ARP-XX-XX-GSC-M-004312	OPERATING THEATRE 7 L03 AHU-04-07	ORL-ARP-XX-XX-GSC-M-004333	OUTPATIENTS & OCULAR PROSTHETICS L05 AHU-04-27
ORL-ARP-XX-XX-GSC-M-004313	OPERATING THEATRE 8 L03 AHU-04-08	ORL-ARP-XX-XX-GSC-M-004334	OUTPATIENTS & OCULAR PROSTHETICS L05 AHU-04-28

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Drawing Number	Drawing Title	Drawing Number	Drawing Title
ORL-ARP-XX-XX-GSC-M-004314	OPERATING THEATRE 9 L03 AHU-04-09	ORL-ARP-XX-XX-GSC-M-004335	L04 FRESH AND EXHAUST AIR AHU CONNECTIONS
ORL-ARP-XX-XX-GSC-M-004315	OPERATING THEATRE 10 L03 AHU-04-10	ORL-ARP-XX-XX-GSC-M-004346	ATRIUM SUPPLY & EXTRACT AHU-LG-29 & 30 (renamed)
ORL-ARP-XX-XX-GSC-M-004316	OPERATING THEATRE 11 L03 AHU-04-11	ORL-ARP-XX-XX-GSC-M-004305	EDUCATION UG AHU-LG-04
ORL-ARP-XX-XX-GSC-M-004317	OPERATING THEATRE 12 L03 AHU-04-12	ORL-ARP-XX-XX-GSC-M-004339	BASIC RESEARCH L05 AHU-08-02
ORL-ARP-XX-XX-GSC-M-004318	OPERATING THEATRE 13 L03 AHU-04-13	ORL-ARP-XX-XX-GSC-M-004338	BASIC RESEARCH L05&L06 AHU-08-01
ORL-ARP-XX-XX-GSC-M-004319	OPERATING THEATRE 14 L03 AHU-04-14	ORL-ARP-XX-XX-GSC-M-004340	BASIC RESEARCH L06 AHU-08-03
ORL-ARP-XX-XX-GSC-M-004320	EDUCATION L04 L06 AHU-04-15 (renamed)	ORL-ARP-XX-XX-GSC-M-004345	STAIR CORE SMOKE EXTRACT
ORL-ARP-XX-XX-GSC-M-004321	CLINICAL RESEARCH FACILITY L01 AHU-04-16	ORL-ARP-XX-XX-GSC-M-004341	TOILET CORE A AHU-09-05
ORL-ARP-XX-XX-GSC-M-004322	TRANSLATIONAL RESEARCH L01 AHU-04-17	ORL-ARP-XX-XX-GSC-M-004342	TOILET CORE B AHU-10-05 & 06
ORL-ARP-XX-XX-GSC-M-004323	OUTPATIENTS CYP UG AHU-04-18	ORL-ARP-XX-XX-GSC-M-004336	TOILET CORE D AHU-06-01&02
ORL-ARP-XX-XX-GSC-M-004324	PRIVATE PATIENTS UNIT L02 AHU-04-19	ORL-ARP-XX-XX-GSC-M-004347	Plant Room Ventilation Schematic (L4, L8 & L10)
ORL-ARP-XX-XX-GSC-M-004349	Plant Room Ventilation Schematic (LG & UG)	ORL-ARP-XX-XX-GSC-M-004348	Fume Extract System Schematic
ORL-ARP-XX-XX-GSC-M-004325	PRIVATE PATIENTS UNIT L02 AHU-04-20	ORL-ARP-XX-XX-GSC-M-004337	OFFICE L07 AHU-07-01 & 02
ORL-ARP-XX-XX-GSC-M-004326	OUTPATIENTS L01 AHU-04-21	ORL-ARP-XX-XX-GSC-M-004303	FM & PLANTROOMS - AHU-LG-02
ORL-ARP-XX-XX-GSC-M-004327	OUTPATIENTS L01 AHU-04-22	ORL-ARP-XX-XX-GSC-M-004304	A&E AND PHARMACY DEPARTMENT LG AHU-LG-03
ORL-ARP-XX-XX-GSC-M-004328	OPTOMETRY, OUTPATIENTS & ELECTRODIAGNOSTIC L02 AHU-04-23	ORL-ARP-XX-XX-GSC-M-004302	RADIOLOGY DEPARTMENT LG AHU-LG-01
<b>AHU Zone Strategy</b>		ORL-ARP-XX-XX-GSC-M-004329	SURGICAL SERVICE RECOVERY L04 AHU-04-24
ORL-ARP-ZZ-08-DPL-M-004211	AHU Zone Strategy, Eight Floor		

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Drawing Number	Drawing Title	Drawing Number	Drawing Title
ORL-ARP-ZZ-05-DPL-M-004208			
ORL-ARP-ZZ-01-DPL-M-004204	AHU Zone Strategy, First Floor	ORL-ARP-ZZ-02-DPL-M-004205	AHU Zone Strategy, Second Floor
ORL-ARP-ZZ-04-DPL-M-004207	AHU Zone Strategy, Fourth Floor	ORL-ARP-ZZ-07-DPL-M-004210	AHU Zone Strategy, Seventh Floor
ORL-ARP-ZZ-LG-DPL-M-004202	AHU Zone Strategy, Lower Ground	ORL-ARP-ZZ-06-DPL-M-004209	AHU Zone Strategy, Sixth Floor
		ORL-ARP-ZZ-03-DPL-M-004206	AHU Zone Strategy, Third Floor
		ORL-ARP-ZZ-UG-DPL-M-004203	AHU Zone Strategy, Upper Ground

AHU Zone Strate