



ENGINEER'S TEAM LTD

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REV. NO.	DESCRIPTION	DATE	BY
01	Add Grease Trap & update the plumbing plans	03/02/26	AA
02	Create leak detection, Gas & Fire protection etc plans	06/27/26	AA
03	Fix HVAC system and add new system	07/21/26	AA
04	Change VRF system & Fix Ventilation	07/27/26	AA
05	Provide more information about the HVAC system	08/04/26	AA
05	HVAC Elevation Plan & Filtrations Specification.	08/16/26	AA

PROJECT: 25 WILBURY AVENUE

TITLE: HVAC CALCULATION

PROJ. NO. PROJ. ENGR. SCALE @ 24X36: 1:100

DATE : September 14, 2026

DRAWING NO. M - 1 4 REV. 6

Air System Sizing Summary for HVAC CASTLE SYSTEM

Project Name: 219 Project 07/16/2026
Prepared by: Engineer's Team LTD 03:52PM

Air System Information

Air System Name HVAC CASTLE SYSTEM Number of zones 1
Equipment Class SPLT AHU Floor Area 102.6 m²
Air System Type SZCAV Location London - Kew, United Kingdom

Sizing Calculation Information

Calculation Months Jan to Dec Zone L/s Sizing Sum of space airflow rates
Sizing Data Calculated Space L/s Sizing Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load 14.6 kW Load occurs at Aug 1700
Sensible coil load 10.9 kW OA DB / WB 27.8 / 19.9 °C
Coil L/s at Aug 1700 787 L/s Entering DB / WB 25.5 / 18.8 °C
Max block L/s 787 L/s Leaving DB / WB 14.0 / 13.3 °C
Sum of peak zone L/s 787 L/s Coil ADP 12.4 °C
Sensible heat ratio 0.747 Bypass Factor 0.120
L/s (kW) 53.9 Resulting RH 55 %
m³/kW 7.0 Design supply temp. 12.8 °C
W/m² 142.2 Zone T-stat Check 1 of 1 OK
Water flow @ 5.6 K rise N/A Max zone temperature deviation 0.0 K

Central Heating Coil Sizing Data

Max coil load 10.0 kW Load occurs at Des Htg
Coil L/s at Des Htg 787 L/s W/m² 97.2
Max coil L/s 787 L/s Ent. DB / Lvg DB 13.7 / 24.2 °C
Water flow @ 11.1 K drop N/A

Supply Fan Sizing Data

Actual max L/s 787 L/s Fan motor BHP 0.00 BHP
Standard L/s 786 L/s Fan motor kW 0.00 kW
Actual max L/(s·m²) 7.67 L/(s·m²) Fan static 0 Pa

Outdoor Ventilation Air Data

Design airflow L/s 230 L/s L/s/person 6.07 L/s/person
L/(s·m²) 2.25 L/(s·m²)

Zone Sizing Summary for HVAC CASTLE SYSTEM

Project Name: 219 Project 07/16/2026
Prepared by: Engineer's Team LTD 03:52PM

Air System Information

Air System Name HVAC CASTLE SYSTEM Number of zones 1
Equipment Class SPLT AHU Floor Area 102.6 m²
Air System Type SZCAV Location London - Kew, United Kingdom

Sizing Calculation Information

Calculation Months Jan to Dec Zone L/s Sizing Sum of space airflow rates
Sizing Data Calculated Space L/s Sizing Individual peak space loads

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Sensible Peak Load L/(s·m²)	Reheat Coil Load (kW)	Reheat Coil Load @ 11.1 K (kW)	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11.1 K	Mixing Box Fan Airflow (L/s)
Zone 1	787	787	7.67	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	10.5	Jul 2200	2.9	102.6

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
Dining Area 1	1	1.7	Jul 2000	124	1.0	31.6	3.92
Dining Area 2	1	1.6	Jul 2200	119	0.8	28.1	4.24
Noodle bar Area	1	5.2	Jul 2200	391	0.5	20.9	18.71
Noodle bar dining	1	2.0	Jul 2200	152	0.6	22.0	

Ventilation Sizing Summary for HVAC CASTLE SYSTEM

Project Name: 219 Project 07/16/2026
Prepared by: Engineer's Team LTD 03:52PM

1. Summary

Ventilation Sizing Method Sum of Space OA Airflows
Design Ventilation Airflow Rate 230 L/s

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (m²)	Maximum Occupants	Maximum Supply Air (L/s)	Required Outdoor Air (L/s/person)	Required Outdoor Air (L/(s·m²))	Required Outdoor Air (L/s)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (L/s)
Zone 1									
Dining Area 1	1	31.6	9.0	123.9	3.80	0.90	0.0	0.0	62.6
Dining Area 2	1	28.1	9.0	119.2	3.80	0.90	0.0	0.0	59.5
Noodle bar Area	1	20.9	5.0	391.1	3.80	0.60	0.0	0.0	31.5
Noodle bar dining	1	22.0	15.0	152.3	3.80	0.90	0.0	0.0	76.8
Totals (incl. Space Multipliers)				786.5					230.5

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Dedicated Outdoor Air System (DOAS) Sizing Summary for HVAC DEDICATED OUTDOOR AIR

Project Name: 219 Project 06/20/2026
Prepared by: Engineer's Team LTD 05:32PM

Air System Information

Air System Name HVAC DEDICATED OUTDOOR AIR Number of zones 1
Equipment Class TERM Floor Area 121.4 m²
Air System Type PKG-FC Location London - Kew, United Kingdom

Sizing Calculation Information

Calculation Months Jan to Dec Zone L/s Sizing Sum of space airflow rates
Sizing Data Calculated Space L/s Sizing Individual peak space loads

Ventilation Fan Sizing Data

Actual max L/s 262 L/s Fan motor BHP 0.00 BHP
Standard L/s 262 L/s Fan motor kW 0.00 kW
Actual max L/(s·m²) 2.16 L/(s·m²) Fan static 0 Pa

Outdoor Ventilation Air Data

Design airflow L/s 262 L/s L/s/person 6.09 L/s/person
L/(s·m²) 2.16 L/(s·m²)

Zone Sizing Summary for HVAC DEDICATED OUTDOOR AIR

Project Name: 219 Project 06/20/2026
Prepared by: Engineer's Team LTD 05:32PM

Air System Information

Air System Name HVAC DEDICATED OUTDOOR AIR Number of zones 1
Equipment Class TERM Floor Area 121.4 m²
Air System Type PKG-FC Location London - Kew, United Kingdom

Sizing Calculation Information

Calculation Months Jan to Dec Zone L/s Sizing Sum of space airflow rates
Sizing Data Calculated Space L/s Sizing Individual peak space loads

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (kW)	Sens Coil Load (kW)	Coil Entering DB / WB (°C)	Coil Leaving DB / WB (°C)	Water Flow @ 5.6 K (L/s)	Time of Peak Coil Load	Zone L/(s·m²)
Zone 1	16.0	11.7	19.6 / 24.3	13.1	-	Jul 1900	7.38

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (kW)	Heating Coil Ent.Lvg DB (°C)	Htg Coil Water Flow @11.1 K (L/s)	Fan Design Airflow (L/s)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (L/s)
Zone 1	5.1	19.6 / 24.3	-	895	0.000	0.000	262

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m²)
Zone 1	12.0	Jul 2200	3.3	121.4

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m²)	Space L/(s·m²)
Zone 1							
Dining Area 1	1	1.7	Jul 2000	124	1.0	31.6	3.93
Dining Area 2	1	1.6	Jul 2200	119	0.8	28.1	4.25
Kitchen	1	1.2	Jul 2000	91	0.3	15.7	5.81
Noodle bar Area	1	5.2	Jul 2200	392	0.5	20.9	18.75
Noodle bar dining	1	2.0	Jul 2200	153	0.6	22.0	6.94
Washroom	1	0.2	Jul 1900	16	0.1	3.1	5.21

According to calculation:

Maximum occupants 43 person

Required outdoor air 10 L/s per person

Total required outdoor air 430 L/s

And the new system supply 430 L/s fresh outdoor air



Designed By Engr. Al Amin (MEP Engineer | Director - Engineer's Team LTD)

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 <https://engrteam.com>

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- HVAC Layout Plan
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- Plumbing Engineering Services
- Fire protection & Security systems
- Specialized services

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