



ENGINEERING SERVICES SPATIALS





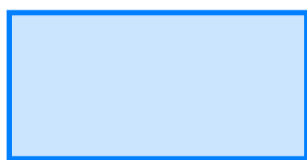





47359_ESP_01 - 461 Chapel Road, Bankstown

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Date 23.01.2025 - Revision 1

Legend

This legend below indicates the colour scheme used to identify which engineering discipline it is.

Blocks	Numbers	Engineering Discipline
		Mechanical Services
		Electrical Services
		Hydraulic Services
		Fire Protection Services
		Vertical Transport Services

Coordination Actions

Coordination issues are typically clouded in red with a red number assigned. This table summarises the details of each issue including any suggested changes to resolve that issue.

Action Reference No.	Action	Issue status
C1	Egress around fire tanks is under review. Columns to be revised as indicated. We recommend relocating the OSD tank to allow for the fire tank arrangement as shown.	Open
C2	Columns in switch room to be reviewed. If columns need to remain, the switch room may need to get deeper.	Open
C3	Egress design compliance to be confirmed. We recommend having a direct egress path to the fire control room from outside, to be confirmed by BCA.	Open
C4	We recommend allowing for traffic bollards around the substation due to the proximity to the vehicle travel path.	Open
C5	Carpark exhaust fans to be located at high level. To be coordinated with waste room layout and garbage chute locations.	Open
C6	Stair pressurisation fans to be stacked as shown.	Open
C7	Carpark intake to be coordinated with landscaping in communal outdoor space.	Open
C8	Plant to be reviewed by acoustics to determine acoustic treatment required for space. Intent for plant space to be open to above to allow for ventilation to plant.	Open
C9	Access to roof to have integrated ladder complete with handrail. We recommend egress paths to rooftop to be reviewed by BCA.	Open
C10	No built form is permitted above kiosk substations. To retain substations as kiosk type, extent of building to be reviewed.	Open
C11	900mm clear trench is required below the kiosk to allow for HV feeder from authority connection, and between kiosk and main switch room. This will result in a low head height area as shown.	Open
C12	Cupboards are required to transition on level to connect to basement level. Transition and riser location to be coordinated with architecture	Open
C13	Anything within the 3m radius of the kiosk substations is required to be blast proof. Location and extent of roller shutter door to be reviewed to ensure this is not within the blast radius.	Open

Spatial Matrix

This matrix below summarises the engineering spaces required to support this development. The numbers in the first column are the numbers shown on each plan indicating the location of each engineering item. The colours indicate which engineering discipline it is. Read the comments for specific instructions and refer to the Design Guide for a full explanation of each system.

Item No.	Engineering item	Dimensions or area (sqm)	Comment
1	Car park Communication Cupboard	1m (l) x 0.6m (d) x 2.1m (h)	One cupboard per level, and per 60 m radius i.e. max cable length out from each cupboard. Often located close to the building core and lifts.
2	Car park Electrical Cupboard	1m (l) x 0.6m (d) x 2.1m (h)	One cupboard per level, and per 60 m radius i.e. max cable length out from each cupboard. Often located close to the building core and lifts.
3	Communications Building Distributor Room	3.2m (l) x 3m (w) x 2.6m (h)	Where practical provide direct access for cabling from the street and near to the communications riser
4	Distribution Board, Communications Board, Fire Hose Reel	0.8m (w) x 0.5m (d), 0.9m (w) x 0.5m (d), 1m (w) x 0.5m (d)	Required for each retail tenancy typically located towards the rear of the room.
5	Electrical Substation	5.3m (l) x 3.3m (w) x 1.7m (h)	Refer to the substation section for the external padmount substation requirements
6	EV Charger Distribution Board(s)	0.6m (l) x 0.3m (d) x 1.5m (h)	To be evenly distributed throughout the car park close to the EV charging points they serve
7	Main Electrical Switchrooms	9.7m (l) x 4.5m (w) x 3m (h)	Locate adjacent the substation. Allow for two means of egress via separate doors. Refer to the design guide for further details.
8	Fire brigade booster assembly	4m (w) x 0.7m (d) x 1.8m (h)	Locate near to the front entry and allow for fire truck hardstand
9	Fire Control Room	4m (l) x 2.5m (w) x 2.4m (h)	Note this room requires direct access from the building entrance or main lobby from within a fire corridor. Agreed the location with your BCA consultant and Fire Safety Engineer.
10	Fire Pump Room	7m (l) x 5m (w) x 2.4m (h)	Provide direct access from an external facade or fire stair
11	Fire Water Storage Tank Room	87.84kL	This is the total volume required within the tank. Must be located on the same level or above fire pump room. Two tanks of equal volume can be used. Refer to the design guide for specific requirements.
12	Authority Cold Water Meter	3.3m (l) x 0.5m (d) x 1m (h)	The space is currently allocated within the cold water pump room. No additional space required. Locate close to the site boundary. Refer to the hydraulic section of this report for details
13	Cold Water Pump Room	5.5m (l) x 3m (d) x 2.4m (h)	To be located close to the site boundary.
14	Grease Arrestor(s)	5m (l) x 3.2m (w) 2.8m (h)	Locate below and close to the retail tenancy they serve. For multiple F&B tenants locate centrally to tenancies across the site
15	Rainwater Reuse Tank	5m (l) x 5m (w) x 2.2m (h)	This allowance is an estimate only and is subject to sustainability targets. Confirm this requirement with a sustainability consultant.
16	Rainwater Tank Filtration and Pumps	3m (l) x 1.5m (w) x 2.3m (h)	Locate adjacent the rainwater tank
17	Sewer Pump Station (inground)	1.8m (l) x 1.8m (w) x 2m (h)	Inground only. TBD pending detailed invert level study to determine exact requirements (if any)
18	Stormwater Pump Station (inground)	1.8m (l) x 1.8m (w) x 2m (h)	Inground only. TBD pending detailed invert level study by Civil Engineer to determine exact requirements (if any)
19	Mixed-Use Lift Dimensions	2500mm (w) x 2500mm (d)	Refer to the lift section for full details
20	Car Park Ventilation Fan Room	As Drawn	Allow for a supply and exhaust fan room. For further requirements refer to the design guide.
21	On floor Communications Cupboard	1.2m (l) x 0.6m (d) x 2.1m (h)	To be vertically aligned up through the building located in common areas such as corridors
22	On floor Electrical Cupboard	1.8m (l) x 0.6m (d) x 2.1m (h)	To be vertically aligned up through the building located in common areas such as corridors
23	Central Fire Protection Riser	0.8m (l) x 0.4m (w)	This riser is in addition to the wet fire risers within the fire stairs. Locate adjacent to the fire stair.
24	Fire extinguishers	0.4m (w) x 0.4m (d)	Located within 10m of each single occupancy unit. Mounted between 100mm and 1200mm above floor level
25	Fire Pump Flue Shaft	0.4m (l) x 0.4m (w)	Locate within a fire rated shaft discharging to atmosphere
26	Hydrant and sprinkler zone valve assembly	1.5m (w) x 0.5m (d)	Note the required BCA clearances within the typical apartment section. Generally a 1,300mm stair landing will provide sufficient clearances.
27	Main Hydraulic Riser	2m (l) x 0.8m (w)	To be located off a common corridor, vertically aligned up through the building.
28	Water Meter Cupboard	0.9m (l) x 0.5m (d) x 2.3m (h)	Required on each level, ideally full height, centrally located and vertically aligned up through the building within the common corridor with clear access for maintenance.
29	Lift Shaft Dimensions	2500mm (w) x 2500mm (d)	This figure is the clear internal dimension per lift which excludes the structure. Refer to the lift section for lift numbers and further details.
30	Air conditioning condenser area	900mm (l) x 400mm (d) x 900mm (h)	The air conditioner on balcony dimensions are per apartment. Locate on the balcony away from the handrail close to the external apartment wall.
31	Car Park Ventilation Exhaust Air Riser	1.3	Ensure the exhaust air shaft aligns vertically up through the building. Ideally, locate the shaft close to the car park exhaust air fan room, to which it connects.
32	Car Park Ventilation Supply Air Riser	1.1	Ensure the supply air shaft aligns vertically up through the building. Ideally, locate the shaft close to the car park supply fan room, to which it connects.
33	Commercial Kitchen Exhaust Shafts	0.8	Locate the vertically aligned fire-rated shafts close to the commercial kitchen exhaust hoods they serve. Note the shaft size is typical refer to the Engineering Options Report for the full itemised list of kitchen exhaust shaft sizes for each retail tenancy.
34	Fire Control Room Ventilation (sqm)	0.52	The supply air required for the fire control room must be fire-rated.
35	Fire Pump Room Ventilation (sqm)	0.26	Note that general supply and exhaust is required. Refer to the fire pump section for additional requirements.

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REVISIONS		
REV	DESCRIPTION	DATE
01	PRELIMINARY ISSUE	23.01.2025

PROJECT
461 CHAPEL ROAD, BANKSTOWN, NSW 2200
DRAWING TITLE
ENGINEERING SERVICES SPATIALS - SPATIAL MATRIX

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
23.01.2025	TC	TC	LA	1:100
NORTHPOINT	PROJECT NUMBER	SKETCH NUMBER	SHEET SIZE	REVISION
	47359	ESP_01	A1	01

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Item No.	Engineering item	Dimensions or area (sqm)	Comment
36	Garbage Room Exhaust (sqm)	0.21	Refer to the garbage room ventilation section for requirements to assess if exhausting to a local facade is possible. If not, the noted shaft size will be required. We recommend including a hot water heater below the sink in each garbage room.
37	Grease Arrestor Room Exhaust (sqm)	0.09	Refer to the design guide for requirements to assess if the supply and exhaust air can run from a local facade. If not, the supply or exhaust air must run-up to the roof, noting the required shaft size. Tip: separate air intakes and air discharge locations by 6m.
38	Loading Dock Exhaust (sqm)	0.6	Refer to the loading dock ventilation section for requirements to assess if the supply and exhaust air can run from a local facade. If not, the supply or exhaust air must run-up to the roof, noting the required shaft size. Tip: separate air intakes and air discharge locations by 6m.
39	Lobby Relief Shaft (sqm)	3.15	The lobby relief grille must connect directly to the communal corridor and have a clear path between it and the fire stair doors that it is relieving air from. The shaft must be vertically aligned.
40	Main switch room Ventilation (sqm)	0.2	Two of these noted shafts are required if the room is ventilated from the roof. Refer to the main switch room ventilation section for requirements if it is preferred and possible to ventilated this space to/ from a local facade.
41	Retail Garbage Room Exhaust (sqm)	0.8	Refer to the retail garbage room exhaust section for requirements to assess if exhausting to a local facade is possible. If not, exhaust to the roof noting the required shaft size. A single shaft can serve multiple garbage rooms.
42	Stair Pressurisation Shaft (sqm)	1.4	One required per fire stair. Locate the shaft directly adjoining each fire stair in a dedicated vertically aligned fire-rated enclosure. Note the requirements for top and bottom supply into the common shaft.
43	Storage Room Ventilation (sqm)	0.3	Intake via a local facade if possible to avoid this shaft.
44	MATV antennas	2m (l) x 2.5m (w) x 1.5m (h)	External zone located on the roof ideally close to the communication riser below.
45	Solar PV Array (sqm)	599	Locate away from roof edges and areas with overshadowing
46	Commercial Kitchen Exhaust Roof Fans	2m (l) x 1m (w) x 1.2m (h)	Locate the rooftop exhaust fans in a safe location for access and maintenance, near the exhaust shafts and well away (6m minimum) from any air intakes.
47	Lobby Relief Fan	2.2m (l) x 1.2m (w) x 1.3m (h)	Locate the fan on the roof, ideally above or directly adjacent the lobby relief shaft below to which they physically connect.
48	Stair Pressurisation Fan	3m (l) x 0.9m (w) x 1.2m (h)	Locate the fan on the roof, ideally above or directly adjacent the stair pressurisation shaft(s) below to which they physically connect.
49	Mixed-Use Air Conditioning Condensers	As Drawn.	Locate outside (or in a well ventilated space like a car park) close to the retail tenancy it serves. Note fan coil units
50	Electric Water Heater	500mmØ x 885mm (h)	A tank is required per apartment, and is sized to store 80L of hot water.
51	Fire truck hardstand	13m (l) x 6m (w)	A hard surface (28 tonne truck), within 8m of the fire booster assembly set, at the official address of the development. If the access is more than 120m long, a turning circle is required. Minimum access width 4.5m.
52	Community Hall PAC Unit Plant	4.9m (l) x 4.2m (w) x 4.3m (h)	To be located on the roof above the community multipurpose halls. Units to be acoustically treated where in proximity to apartments. If units are located in an enclosed plant room, an extensive louvred facade is required.
53	Community Hall PAC Unit Supply & Return Risers	1.25m (w) x 1.05m (d)	A supply and return riser is required for each PAC unit. Locate within close proximity to the packaged unit plant space.
54	Electric Water Heater	500mmØ x 1620mm (h)	This tank is required for a 4 bedroom apartment, and is sized to store 160L of hot water.

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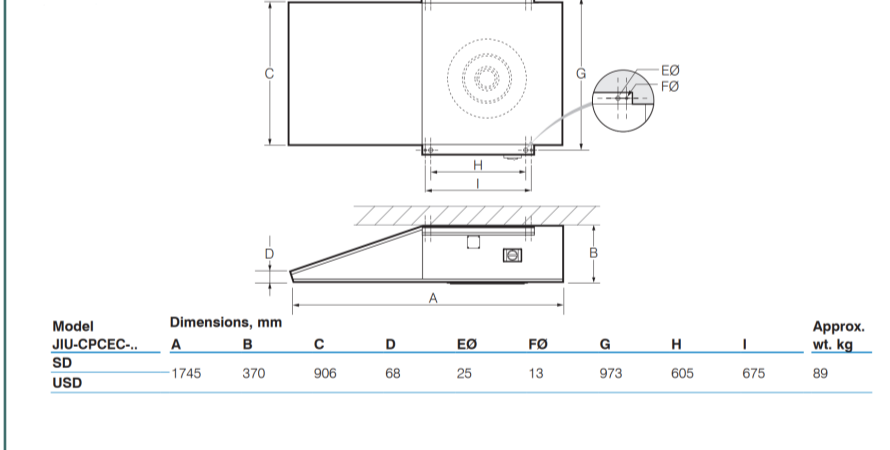
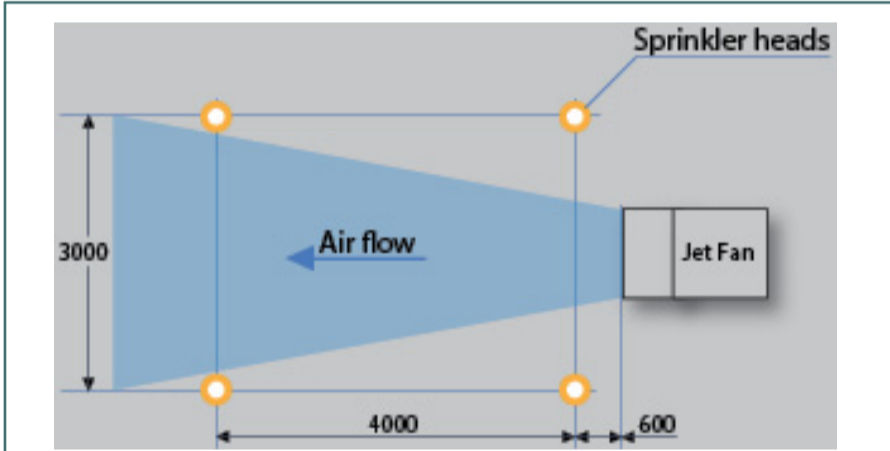
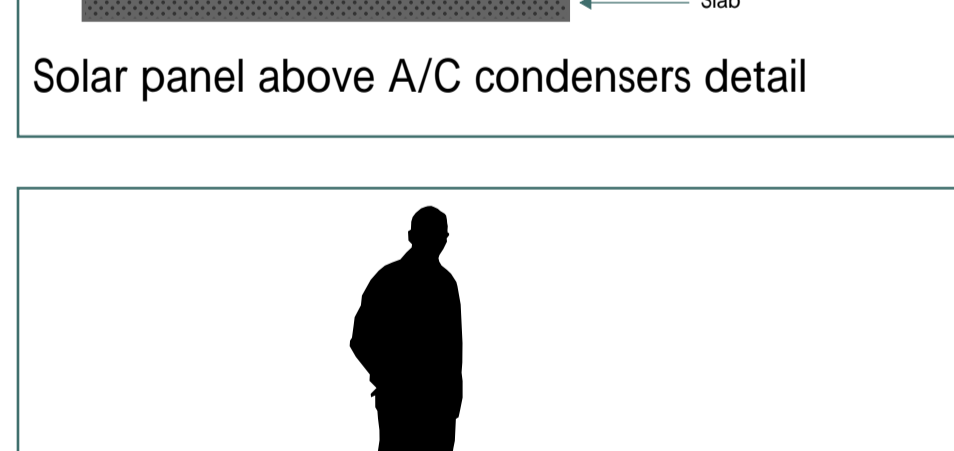
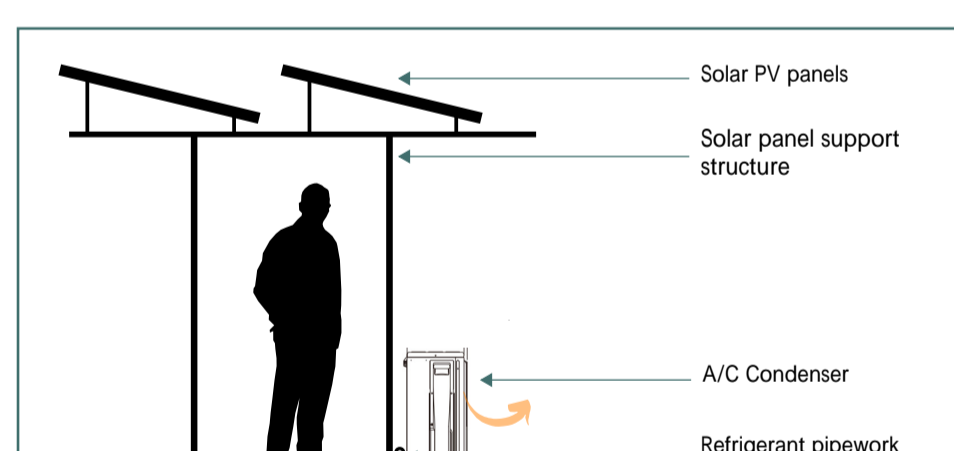
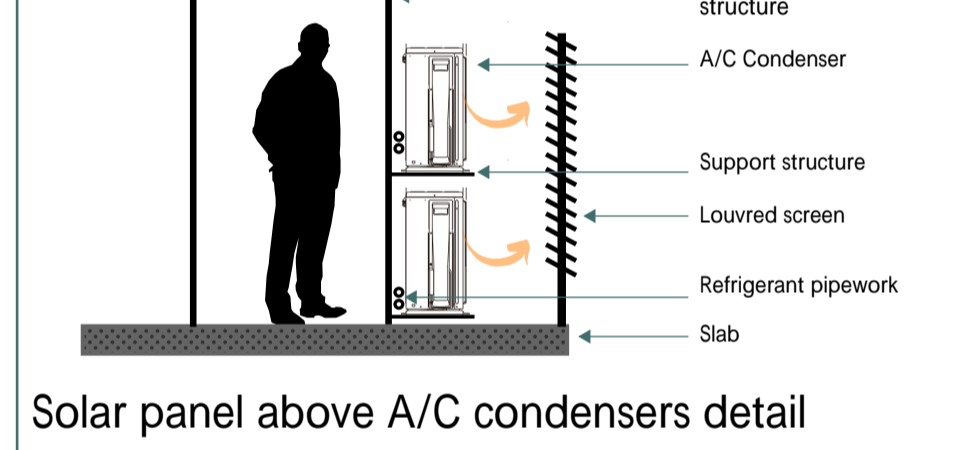
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23.01.2025	TC	TC	LA	1:100
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⬆	47359	ESP_01	A1	01

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Typical Details

MODEL		RXYMQ3AV4A	RXYMQ4AV4A	RXYMQ5AV4A	RXYMQ6AV4A	RXYMQ8AY1	RXYMQ9AY1
Power supply		1-phase, 230-240 V, 50 Hz			3-phase, 380-415 V, 50 Hz		
Cooling capacity	kcal/h	7,740	9,600	12,000	13,800	19,300	20,600
	Btu/h	30,700	38,200	47,800	54,600	76,400	81,900
Heating capacity	kW	9.0	11.2	14.0	16.0	22.4	24.0
	Btu/h	8,600	10,800	12,000	15,500	21,500	22,400
Power consumption	Cooling kW	2.44	2.88	3.93	4.14	5.94	6.88
	Heating kW	2.28	2.60	3.04	4.07	6.25	6.82
Capacity control	%	24 to 100			16 to 100		20 to 100
Casing colour		Ivory white (5Y7.5/1)					
Compressor	Type	Hermetically sealed swing type			Hermetically sealed scroll type		
	Motor output kW	1.92	3.0	3.5	3.8	4.8	
Airflow rate	l/s	1,267			2,333		
	m ³ /min	76			140		
Dimensions (HxWxD)	mm	990x940x320			1,345x900x320		1,430x940x320
Machine weight	kg	71			104		138
Sound level (Cooling/Heating)	dB(A)	51/52	52/54	53/54	55/56	57/58	58/59
Sound power	dB(A)	69	70	71	73	75	76
Operation range	Cooling °CDB				-5 to 46		
	Heating °CWB				-20 to 15.5		
Refrigerant	Type	R-410A					
	Charge kg	2.9	3.4	3.6	3.8	5.8	
Piping connections	Liquid mm	φ9.5 (Flare)			φ9.5 (Brazing)		
	Gas mm	φ15.9 (Flare)			φ19.1 (Brazing) / φ22.2 (Brazing)		

Typical 1-1 DX split unit specification sheets

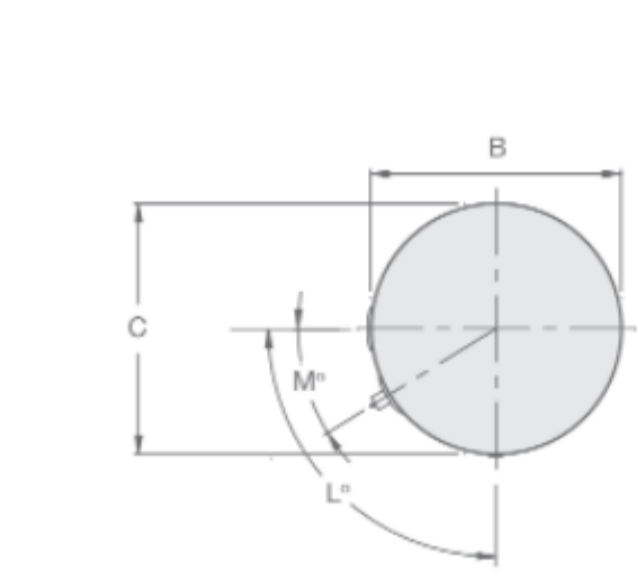
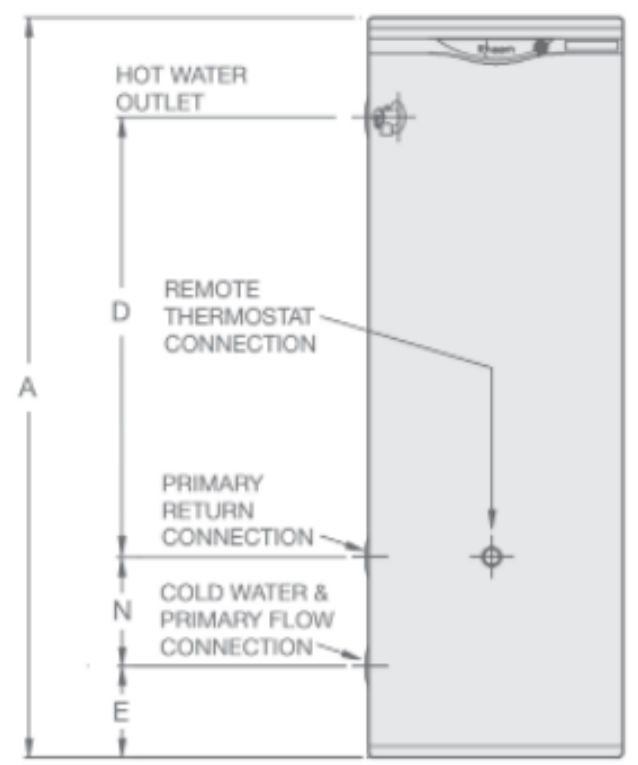


Model	Dimensions, mm	Approx. wt. kg
JU-CPEC-SD	1745 370 906 69 25 13 973 505 675 89	

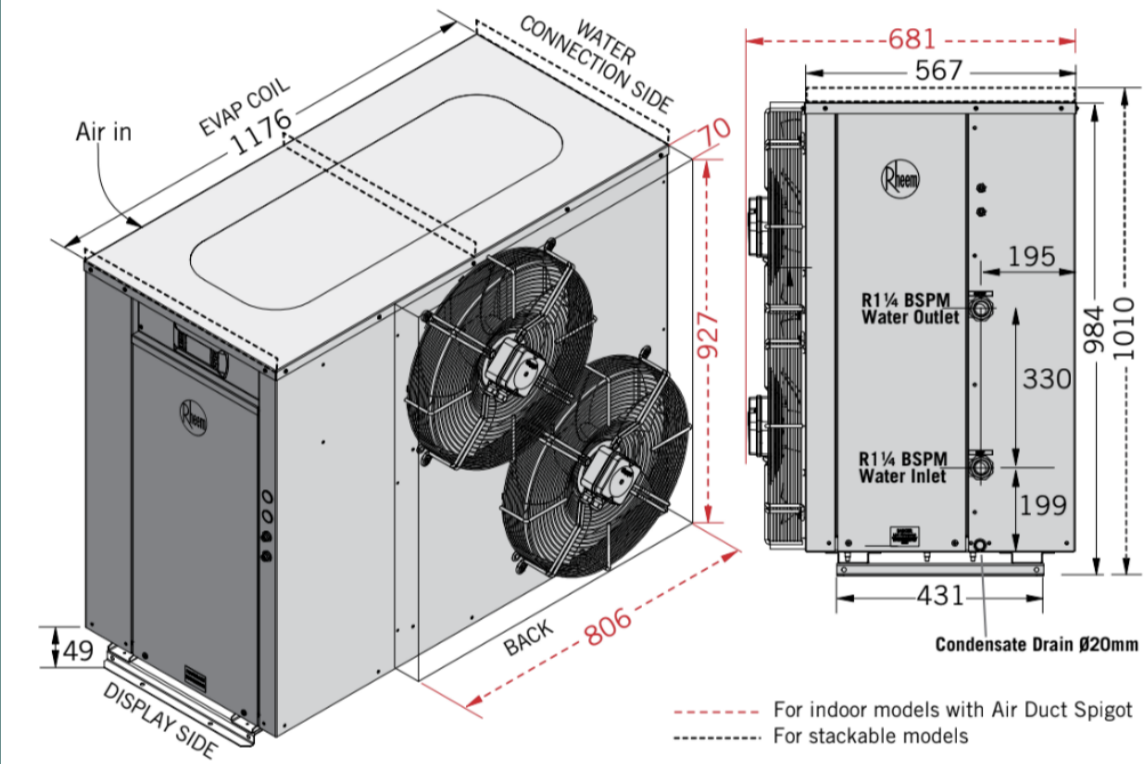
Model	Fan speed	Free throw	JU-CPEC-SD	Car park	Free-field											
High Speed	30	1.64	52.2	1.7	2.5	40	72	64	79	80	83	81	79	78	74	74
Pro-Std	22	1.20	28.4	0.7	1.1	40	65	57	74	79	73	72	72	71	67	63
High Speed	24	1.39	38	1.1	1.8	60	67	60	75	85	78	74	75	74	70	64
Pro-Std	23	1.34	36.5	1.1	1.8	60	65	59	74	84	77	73	73	73	69	63

Jet fan details

DIMENSIONS AND TECHNICAL DATA TABLE			
Model number	610 340	610 430	
Storage capacity	Litres	325	410
Dimensions	A mm	1640	1840
	B mm	640	685
	C mm	640	685
	D mm	1008	1210
	E mm	115	108
	F mm	-	-
	G mm	-	-
	H mm	-	-
	J mm	290	273
	P mm	-	-
	Q mm	-	-
	K degrees	-	-
	L degrees	90°	84°
	M degrees	32°	30°
N mm	290	273	
Weight Empty	kg	96	117
Inlet/Outlet Connections (BSPF)		RP2	RP2
T&PR Valve Connection (BSPF)		RP3/4	RP3/4
Vent Connection (BSPF)		-	-
Drain Connection (BSPF)		-	-
Remote Thermostat Connection (1 x thermostat supplied)		RP3/4	RP3/4

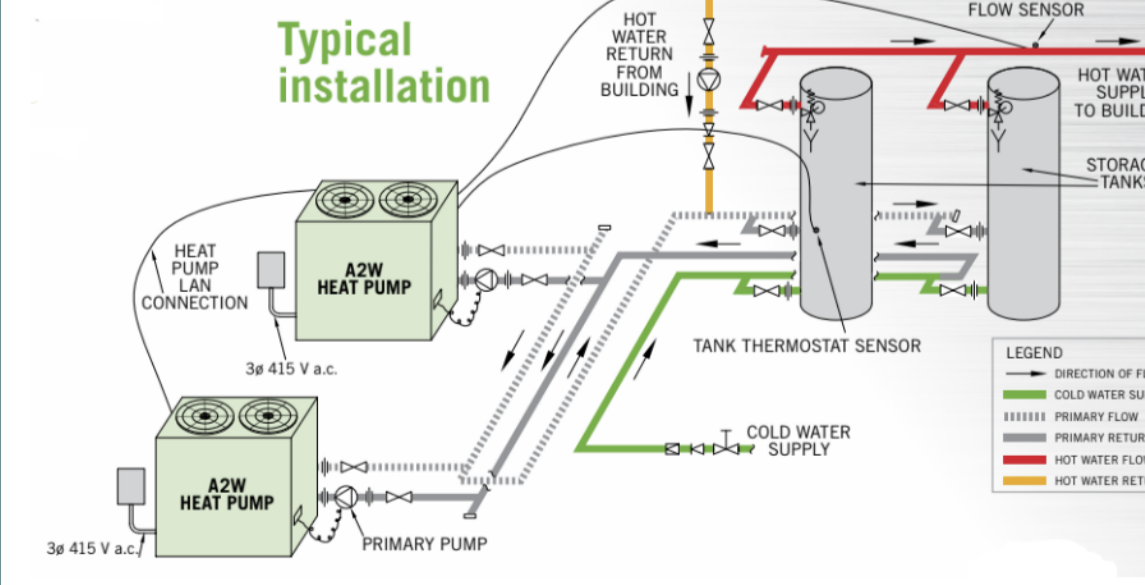


Domestic hot water storage tank specifications (two sizes)



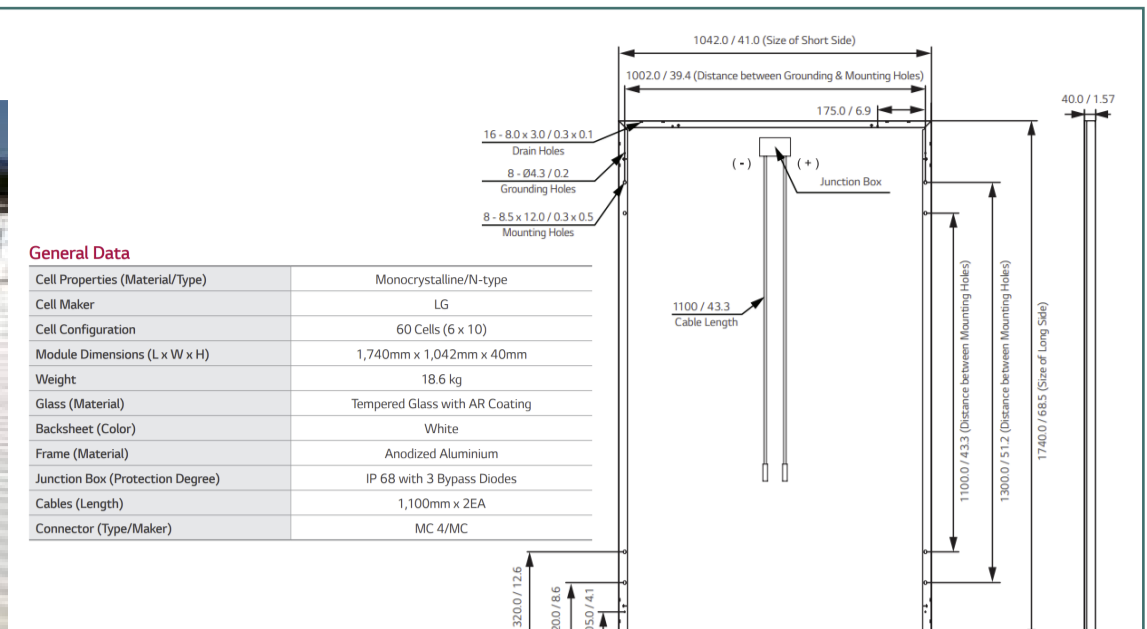
Domestic hot water heat pump example details

PRODUCT DATA	Ducted Exhaust	Non Ducted Exhaust
Heating Capacity**	kW 17.46	17.46
Power Input**	kW 4.01	4.01
COP**	4.0	4.0
Recovery @ 50°C Rise*	L/hr 300	
Operating Range (ambient)	°C 5-45	
Outlet Temperature	°C 65	
Refrigerant	R134a	
TPR Valve Setting (VE/SS)	kPa 1000/850	
EDV Setting (VE/SS)*	kPa 850/700	
Maximum Water Pressure Supply		
Without EDV (VE/SS)*	kPa 800/680	
With EDV (VE/SS)*	kPa 650/550	
Electrical Connection	3Phase/415V/50Hz	
Max Current per Phase (running, incl pump)	Amps 17.06	15.22
Minimum Circuit Size (per phase)	Amps 20	
Air Flow (at maximum static pressure)	L/s 1600	
Maximum Static Pressure	Pa 80	20
Minimum Ventilation per inlet and outlet	m ² 1	
Minimum room volume for indoor installation**	m ³ 7.5	
Sound Pressure Level	dB(A) 59@3m	
Approx Weight Empty	kg 120	
Approx Weight Full	kg 125	
Storage per Heat Pump	L 400-4,000	
Clearances		
Evap Coil Side	mm 500	
Back (vertical discharge models)	mm Nil	
Back (horizontal discharge models)	mm 1200	
Display Side	mm 850	
Water Connections Side	mm 500	
Top (vertical discharge models)	mm 1200	
Top (horizontal discharge option)	mm Clearance above unit required for service personnel to stand	

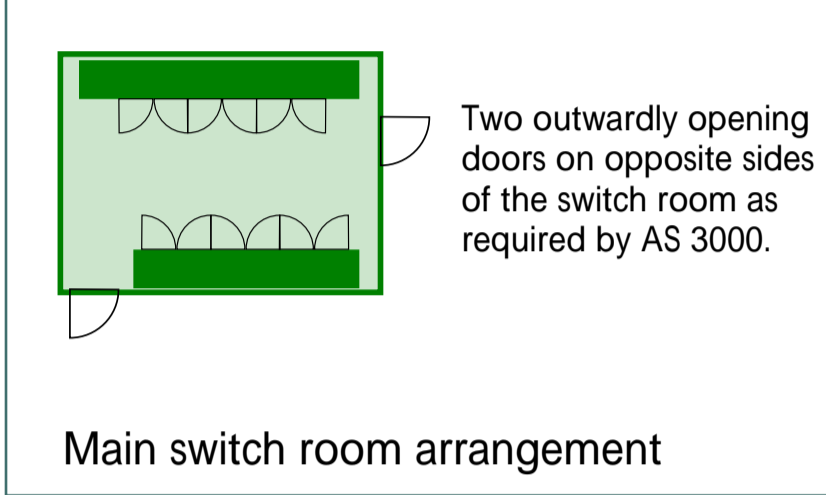


Domestic hot water schematic example

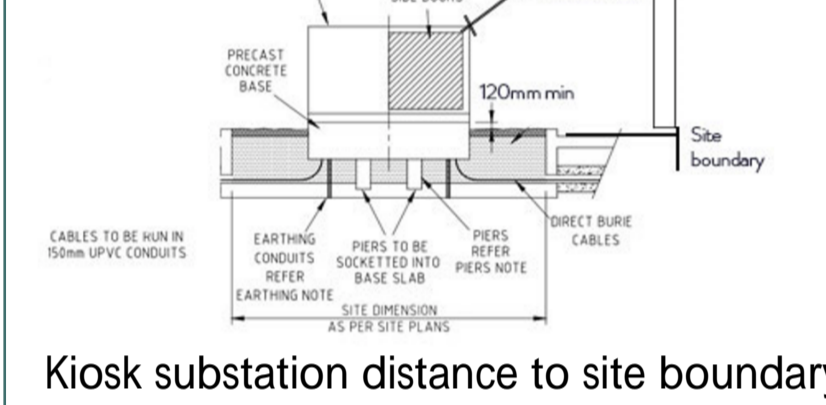
Solar panel details



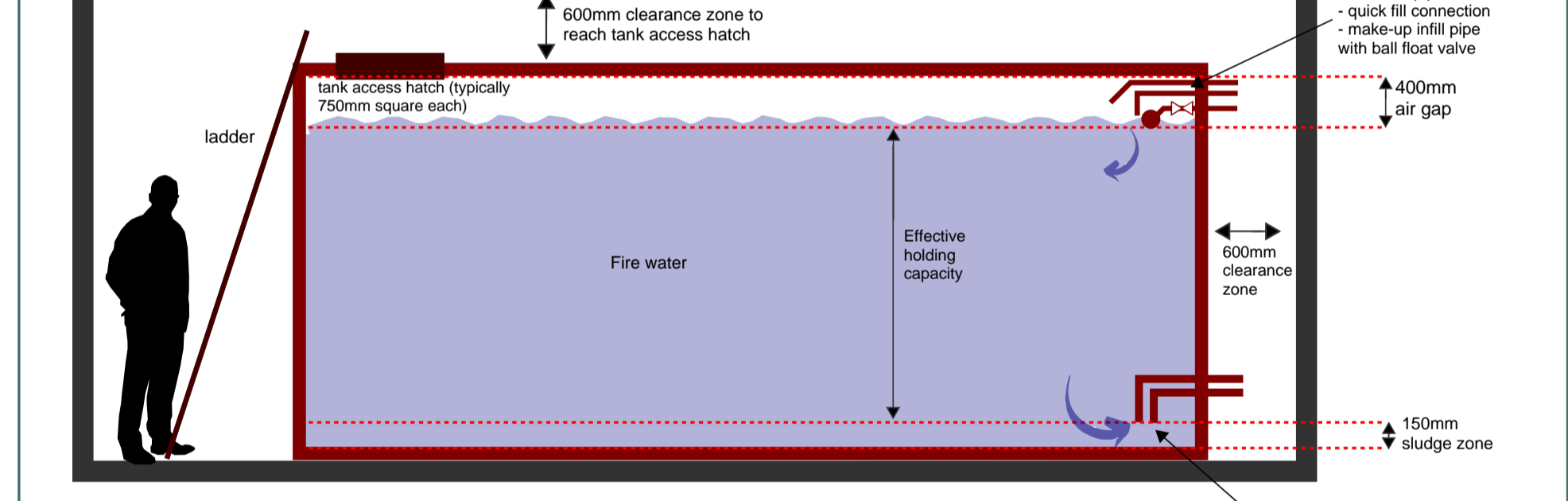
Tip: Angled at 30 degrees as shown and ideally north facing located in an area with no over shadowing from surrounding buildings/structures/planting



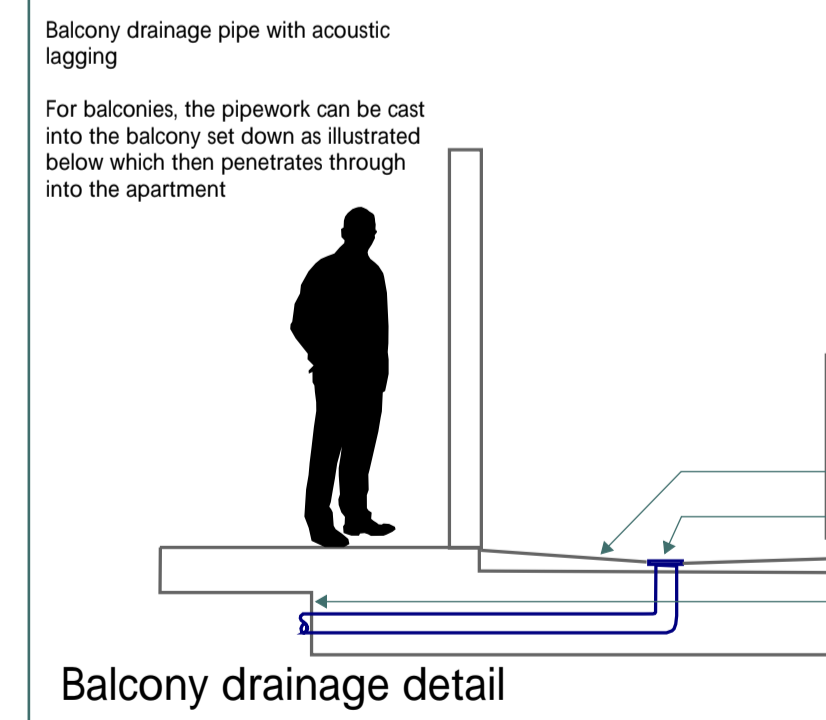
Main switch room arrangement



Kiosk substation distance to site boundary detail



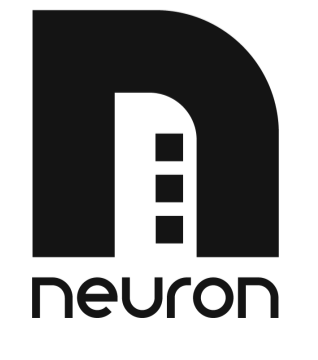
Fire tank typical details



Balcony drainage detail

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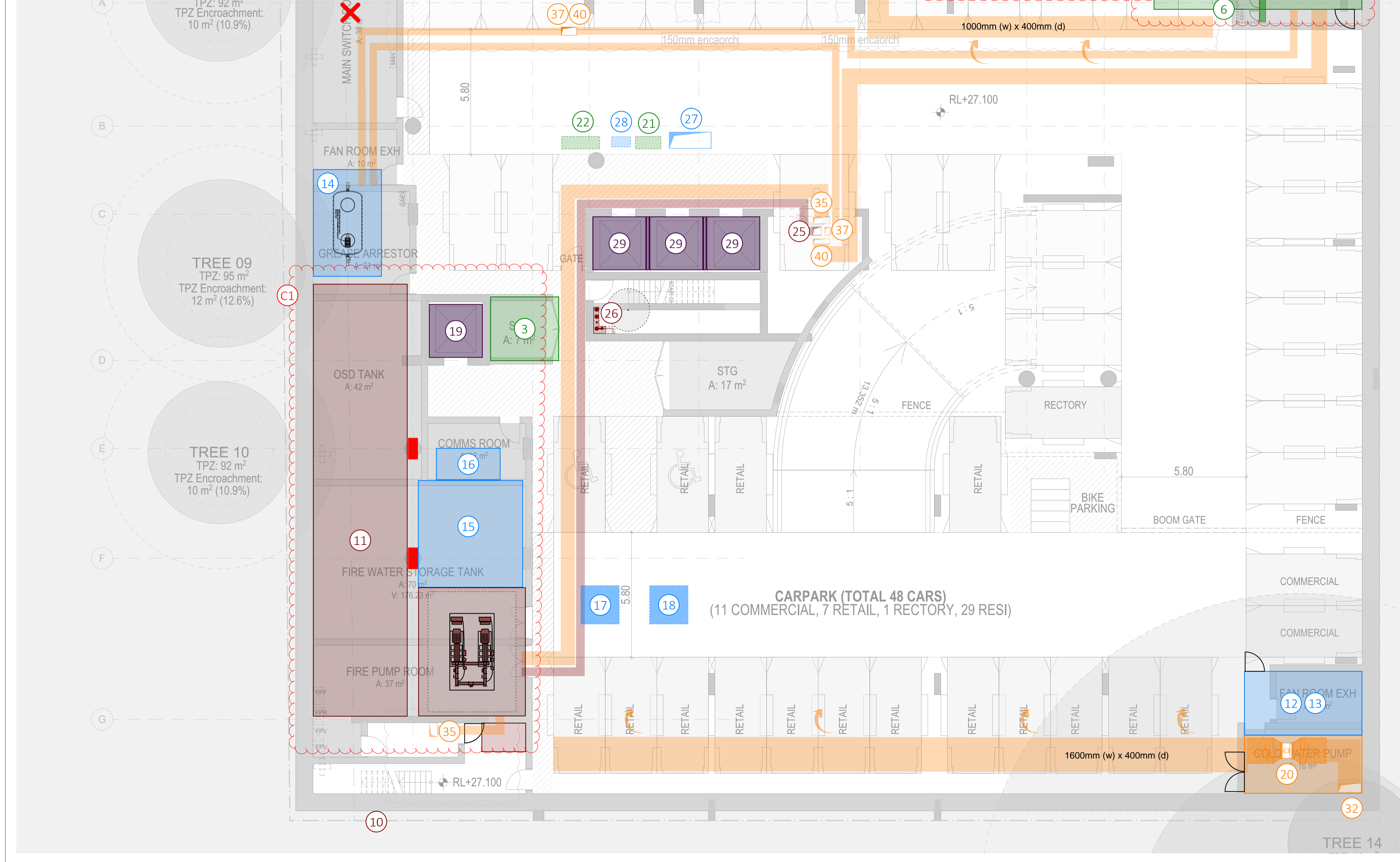
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REVISIONS		
REV	DESCRIPTION	DATE
01	PRELIMINARY ISSUE	23.01.2025

PROJECT
461 CHAPEL ROAD, BANKSTOWN, NSW
2200
DRAWING TITLE
ENGINEERING SERVICES SPATIALS -
TYPICAL DETAILS

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
23.01.2025	TC	TC	LA	1:100
NORTHPOINT	PROJECT NUMBER	SKETCH NUMBER	SHEET SIZE	REVISION
⬆	47359	ESP_01	A1	01

Item No.	Engineering Item	Dimensions or area (sqm)
3	Communications Building Distributor Room	3.2m (l) x 3m (w) x 2.6m (h)
6	EV Charger Distribution Board(s)	0.6m (l) x 0.3m (d) x 1.5m (h)
7	Main Electrical Switchrooms	9.7m (l) x 4.5m (w) x 3m (h)
10	Fire Pump Room	7m (l) x 5m (w) x 2.4m (h)
11	Fire Water Storage Tank Room	87.84kL
12	Authority Cold Water Meter	3.3m (l) x 0.5m (d) x 1m (h)
13	Cold Water Pump Room	5.5m (l) x 3m (d) x 2.4m (h)
14	Grease Arrestor(s)	5m (l) x 3.2m (w) x 2.8m (h)
15	Rainwater Reuse Tank	5m (l) x 5m (w) x 2.2m (h)
16	Rainwater Tank Filtration and Pumps	3m (l) x 1.5m (w) x 2.3m (h)
17	Sewer Pump Station (inground)	1.8m (l) x 1.8m (w) x 2m (h)
18	Stormwater Pump Station (inground)	1.8m (l) x 1.8m (w) x 2m (h)
19	Mixed-Use Lift Dimensions	2500mm (w) x 2500mm (d)
20	Car Park Ventilation Fan Room	As Drawn
21	On floor Communications Cupboard	1.2m (l) x 0.6m (d) x 2.1m (h)
22	On floor Electrical Cupboard	1.8m (l) x 0.6m (d) x 2.1m (h)
25	Fire Pump Flue Shaft	0.4m (l) x 0.4m (w)
26	Hydrant and sprinkler zone valve assembly	1.5m (w) x 0.5m (d)
27	Main Hydraulic Riser	2m (l) x 0.8m (w)
28	Water Meter Cupboard	0.9m (l) x 0.5m (d) x 2.3m (h)
29	Lift Shaft Dimensions	2500mm (w) x 2500mm (d)
31	Car Park Ventilation Exhaust Air Riser	1.3
32	Car Park Ventilation Supply Air Riser	1.1
35	Fire Pump Room Ventilation (sqm)	0.26
37	Grease Arrestor Room Exhaust (sqm)	0.09
40	Main switch room Ventilation (sqm)	0.2



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Action Reference No.	Action	Issue Status
C1	Egress around fire tanks is under review. Columns to be revised as indicated. We recommend relocating the OSD tank to allow for the fire tank arrangement as shown.	Open
C2	Columns in switch room to be reviewed. If columns need to remain, the switch room may need to get deeper.	Open
C3	Egress design compliance to be confirmed. We recommend having a direct egress path to the fire control room from outside, to be confirmed by BCA.	Open
C4	We recommend allowing for traffic bollards around the substation due to the proximity to the vehicle travel path.	Open
C5	Carpark exhaust fans to be located at high level. To be coordinated with waste room layout and garbage chute locations.	Open
C6	Stair pressurisation fans to be stacked as shown.	Open
C7	Carpark intake to be coordinated with landscaping in communal outdoor space.	Open
C8	Plant to be reviewed by acoustics to determine acoustic treatment required for space. Intent for plant space to be open to above to allow for ventilation to plant.	Open
C9	Access to roof to have integrated ladder complete with handrail. We recommend egress paths to rooftop to be reviewed by BCA.	Open
C10	No built form is permitted above kiosk substations. To retain substations as kiosk type, extent of building to be reviewed.	Open
C11	900mm clear trench is required below the kiosk to allow for HV feeder from authority connection, and between kiosk and main switch room. This will result in a low head height area as shown.	Open
C12	Cupboards are required to transition on level to connect to basement level. Transition and riser location to be coordinated with architecture	Open
C13	Anything within the 3m radius of the kiosk substations is required to be blast proof. Location and extent of roller shutter door to be reviewed to ensure this is not within the blast radius.	Open

REVISIONS		
REV	DESCRIPTION	DATE
01	PRELIMINARY ISSUE	23.01.2025

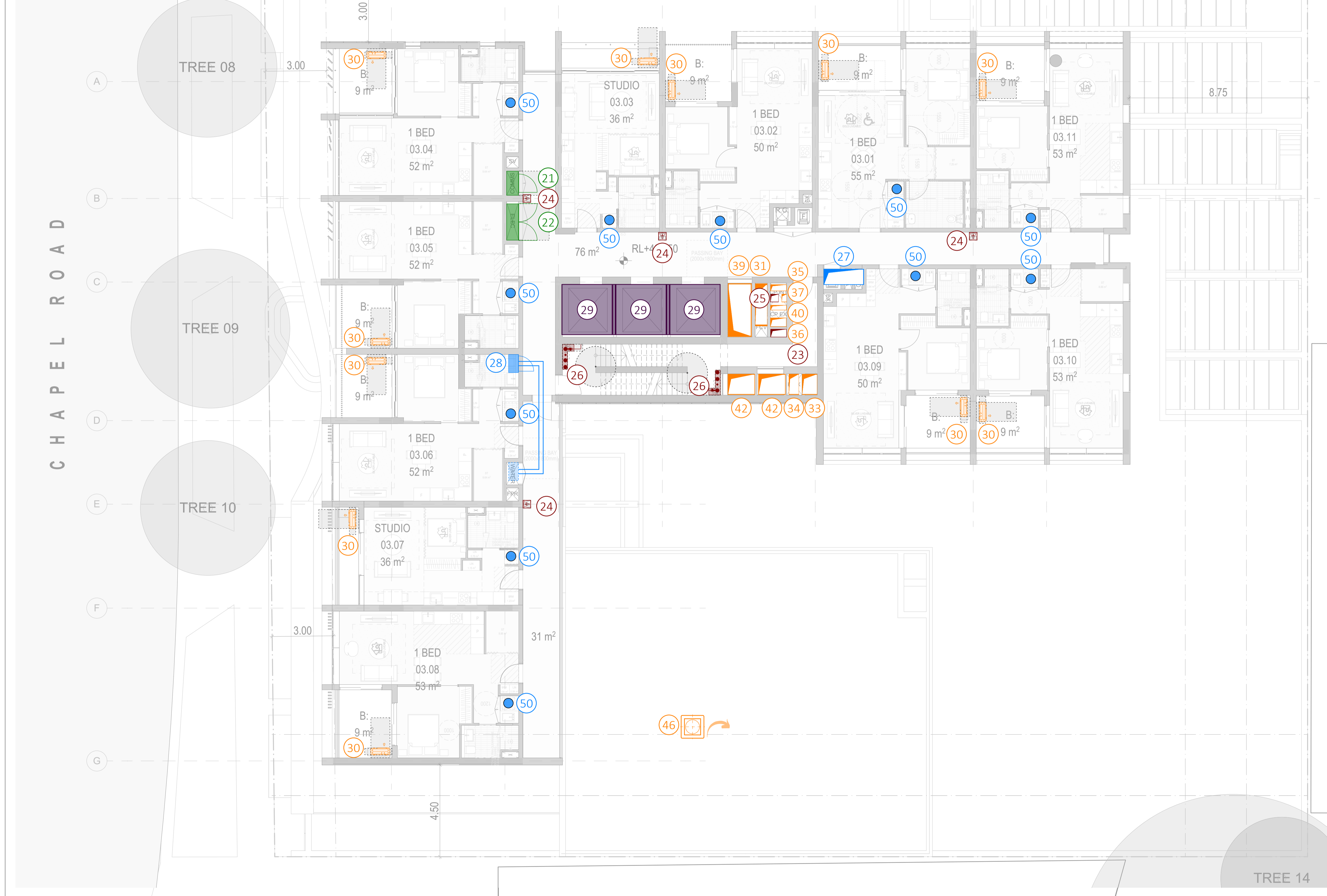
PROJECT
**461 CHAPEL ROAD, BANKSTOWN, NSW
 2200**
 DRAWING TITLE
**ENGINEERING SERVICES SPATIALS -
 BASEMENT**

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
23.01.2025	TC	TC	LA	1:100

NORTHPOINT	PROJECT NUMBER	SKETCH NUMBER	SHEET SIZE	REVISION
↑	47359	ESP_01	A1	01

Item No.	Engineering item	Dimensions or area (sqm)
21	On floor Communications Cupboard	1.2m (l) x 0.6m (d) x 2.1m (h)
22	On floor Electrical Cupboard	1.8m (l) x 0.6m (d) x 2.1m (h)
23	Central Fire Protection Riser	0.8m (l) x 0.4m (w)
24	Fire extinguishers	0.4m (w) x 0.4m (d)
25	Fire Pump Flue Shaft	0.4m (l) x 0.4m (w)
26	Hydrant and sprinkler zone valve assembly	1.5m (w) x 0.5m (d)
27	Main Hydraulic Riser	2m (l) x 0.8m (w)
28	Water Meter Cupboard	0.9m (l) x 0.5m (d) x 2.3m (h)
29	Lift Shaft Dimensions	2500mm (w) x 2500mm (d)
30	Air conditioning condenser area	900mm (l) x 400mm (d) x 900mm (h)
31	Car Park Ventilation Exhaust Air Riser	1.3
33	Commercial Kitchen Exhaust Shafts	0.8
34	Fire Control Room Ventilation (sqm)	0.52
35	Fire Pump Room Ventilation (sqm)	0.26
36	Garbage Room Exhaust (sqm)	0.21
37	Grease Arrestor Room Exhaust (sqm)	0.09
39	Lobby Relief Shaft (sqm)	3.15
40	Main switch room Ventilation (sqm)	0.2
42	Stair Pressurisation Shaft (sqm)	1.4
50	Electric Water Heater	500mmØ x 885mm (h)

FRENCH AVENUE



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Action Reference No.	Action	Issue Status
C1	Egress around fire tanks is under review. Columns to be revised as indicated. We recommend relocating the OSD tank to allow for the fire tank arrangement as shown.	Open
C2	Columns in switch room to be reviewed. If columns need to remain, the switch room may need to get deeper.	Open
C3	Egress design compliance to be confirmed. We recommend having a direct egress path to the fire control room from outside, to be confirmed by BCA.	Open
C4	We recommend allowing for traffic bollards around the substation due to the proximity to the vehicle travel path.	Open
C5	Carpark exhaust fans to be located at high level. To be coordinated with waste room layout and garbage chute locations.	Open
C6	Stair pressurisation fans to be stacked as shown.	Open
C7	Carpark intake to be coordinated with landscaping in communal outdoor space.	Open
C8	Plant to be reviewed by acoustics to determine acoustic treatment required for space. Intent for plant space to be open to above to allow for ventilation to plant.	Open
C9	Access to roof to have integrated ladder complete with handrail. We recommend egress paths to rooftop to be reviewed by BCA.	Open
C10	No built form is permitted above kiosk substations. To retain substations as kiosk type, extent of building to be reviewed.	Open
C11	900mm clear trench is required below the kiosk to allow for HV feeder from authority connection, and between kiosk and main switch room. This will result in a low head height area as shown.	Open
C12	Cupboards are required to transition on level to connect to basement level. Transition and riser location to be coordinated with architecture	Open
C13	Anything within the 3m radius of the kiosk substations is required to be blast proof. Location and extent of roller shutter door to be reviewed to ensure this is not within the blast radius.	Open

REVISIONS		
REV	DESCRIPTION	DATE
01	PRELIMINARY ISSUE	23.01.2025

PROJECT
461 CHAPEL ROAD, BANKSTOWN, NSW 2200
 DRAWING TITLE
ENGINEERING SERVICES SPATIALS - LEVEL 03-07

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
23.01.2025	TC	TC	LA	1:100

NORTHPOINT	PROJECT NUMBER	SKETCH NUMBER	SHEET SIZE	REVISION
↑	47359	ESP_01	A1	01

Item No.	Engineering item	Dimensions or area (sqm)
21	On floor Communications Cupboard	1.2m (l) x 0.6m (d) x 2.1m (h)
22	On floor Electrical Cupboard	1.8m (l) x 0.6m (d) x 2.1m (h)
23	Central Fire Protection Riser	0.8m (l) x 0.4m (w)
24	Fire extinguishers	0.4m (l) x 0.4m (d)
25	Fire Pump Flue Shaft	0.4m (l) x 0.4m (w)
26	Hydrant and sprinkler zone valve assembly	1.5m (w) x 0.5m (d)
27	Main Hydraulic Riser	2m (l) x 0.8m (w)
28	Water Meter Cupboard	0.9m (l) x 0.5m (d) x 2.3m (h)
29	Lift Shaft Dimensions	2500mm (w) x 2500mm (d)
30	Air conditioning condenser area	900mm (l) x 400mm (d) x 900mm (h)
31	Car Park Ventilation Exhaust Air Riser	1.3
33	Commercial Kitchen Exhaust Shafts	0.8
34	Fire Control Room Ventilation (sqm)	0.52
35	Fire Pump Room Ventilation (sqm)	0.26
36	Garbage Room Exhaust (sqm)	0.21
37	Grease Arrestor Room Exhaust (sqm)	0.09
39	Lobby Relief Shaft (sqm)	3.15
40	Main switch room Ventilation (sqm)	0.2
42	Stair Pressurisation Shaft (sqm)	1.4
50	Electric Water Heater	500mmØ x 885mm (h)



FRENCH AVENUE

CHAPEL ROAD

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Action Reference No.	Action	Issue Status
C1	Egress around fire tanks is under review. Columns to be revised as indicated. We recommend relocating the OSD tank to allow for the fire tank arrangement as shown.	Open
C2	Columns in switch room to be reviewed. If columns need to remain, the switch room may need to get deeper.	Open
C3	Egress design compliance to be confirmed. We recommend having a direct egress path to the fire control room from outside, to be confirmed by BCA.	Open
C4	We recommend allowing for traffic bollards around the substation due to the proximity to the vehicle travel path.	Open
C5	Carpark exhaust fans to be located at high level. To be coordinated with waste room layout and garbage chute locations.	Open
C6	Stair pressurisation fans to be stacked as shown.	Open
C7	Carpark intake to be coordinated with landscaping in communal outdoor space.	Open
C8	Plant to be reviewed by acoustics to determine acoustic treatment required for space. Intent for plant space to be open to above to allow for ventilation to plant.	Open
C9	Access to roof to have integrated ladder complete with handrail. We recommend egress paths to rooftop to be reviewed by BCA.	Open
C10	No built form is permitted above kiosk substations. To retain substations as kiosk type, extent of building to be reviewed.	Open
C11	900mm clear trench is required below the kiosk to allow for HV feeder from authority connection, and between kiosk and main switch room. This will result in a low head height area as shown.	Open
C12	Cupboards are required to transition on level to connect to basement level. Transition and riser location to be coordinated with architecture	Open
C13	Anything within the 3m radius of the kiosk substations is required to be blast proof. Location and extent of roller shutter door to be reviewed to ensure this is not within the blast radius.	Open

REVISIONS		
REV	DESCRIPTION	DATE
01	PRELIMINARY ISSUE	23.01.2025

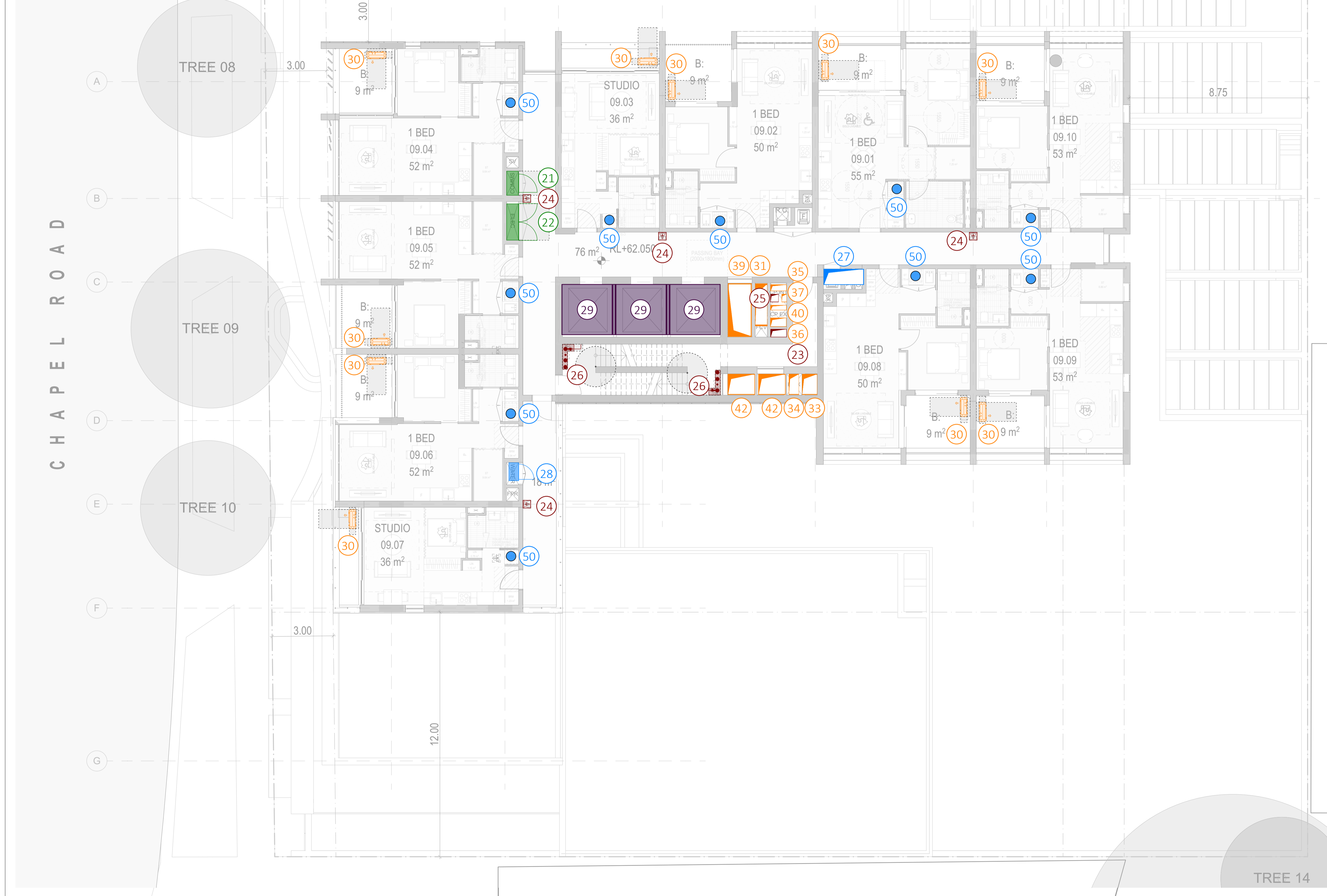
PROJECT
461 CHAPEL ROAD, BANKSTOWN, NSW 2200
 DRAWING TITLE
ENGINEERING SERVICES SPATIALS - LEVEL 08

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
23.01.2025	TC	TC	LA	1:100

NORTHPOINT	PROJECT NUMBER	SKETCH NUMBER	SHEET SIZE	REVISION
↑	47359	ESP_01	A1	01

Item No.	Engineering item	Dimensions or area (sqm)
21	On floor Communications Cupboard	1.2m (l) x 0.6m (d) x 2.1m (h)
22	On floor Electrical Cupboard	1.8m (l) x 0.6m (d) x 2.1m (h)
23	Central Fire Protection Riser	0.8m (l) x 0.4m (w)
24	Fire extinguishers	0.4m (l) x 0.4m (d)
25	Fire Pump Flue Shaft	0.4m (l) x 0.4m (w)
26	Hydrant and sprinkler zone valve assembly	1.5m (l) x 0.5m (d)
27	Main Hydraulic Riser	2m (l) x 0.8m (w)
28	Water Meter Cupboard	0.9m (l) x 0.5m (d) x 2.3m (h)
29	Lift Shaft Dimensions	2500mm (w) x 2500mm (d)
30	Air conditioning condenser area	900mm (l) x 400mm (d) x 900mm (h)
31	Car Park Ventilation Exhaust Air Riser	1.3
33	Commercial Kitchen Exhaust Shafts	0.8
34	Fire Control Room Ventilation (sqm)	0.52
35	Fire Pump Room Ventilation (sqm)	0.26
36	Garbage Room Exhaust (sqm)	0.21
37	Grease Arrestor Room Exhaust (sqm)	0.09
39	Lobby Relief Shaft (sqm)	3.15
40	Main switch room Ventilation (sqm)	0.2
42	Stair Pressurisation Shaft (sqm)	1.4
50	Electric Water Heater	500mmØ x 885mm (h)

FRENCH AVENUE



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Action Reference No.	Action	Issue Status
C1	Egress around fire tanks is under review. Columns to be revised as indicated. We recommend relocating the OSD tank to allow for the fire tank arrangement as shown.	Open
C2	Columns in switch room to be reviewed. If columns need to remain, the switch room may need to get deeper.	Open
C3	Egress design compliance to be confirmed. We recommend having a direct egress path to the fire control room from outside, to be confirmed by BCA.	Open
C4	We recommend allowing for traffic bollards around the substation due to the proximity to the vehicle travel path.	Open
C5	Carpark exhaust fans to be located at high level. To be coordinated with waste room layout and garbage chute locations.	Open
C6	Stair pressurisation fans to be stacked as shown.	Open
C7	Carpark intake to be coordinated with landscaping in communal outdoor space.	Open
C8	Plant to be reviewed by acoustics to determine acoustic treatment required for space. Intent for plant space to be open to above to allow for ventilation to plant.	Open
C9	Access to roof to have integrated ladder complete with handrail. We recommend egress paths to rooftop to be reviewed by BCA.	Open
C10	No built form is permitted above kiosk substations. To retain substations as kiosk type, extent of building to be reviewed.	Open
C11	900mm clear trench is required below the kiosk to allow for HV feeder from authority connection, and between kiosk and main switch room. This will result in a low head height area as shown.	Open
C12	Cupboards are required to transition on level to connect to basement level. Transition and riser location to be coordinated with architecture	Open
C13	Anything within the 3m radius of the kiosk substations is required to be blast proof. Location and extent of roller shutter door to be reviewed to ensure this is not within the blast radius.	Open

REVISIONS		
REV	DESCRIPTION	DATE
01	PRELIMINARY ISSUE	23.01.2025

PROJECT
461 CHAPEL ROAD, BANKSTOWN, NSW 2200
 DRAWING TITLE
ENGINEERING SERVICES SPATIALS - LEVEL 09

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
23.01.2025	TC	TC	LA	1:100

NORTHPOINT	PROJECT NUMBER	SKETCH NUMBER	SHEET SIZE	REVISION
↑	47359	ESP_01	A1	01

Item No.	Engineering item	Dimensions or area (sqm)
21	On floor Communications Cupboard	1.2m (l) x 0.6m (d) x 2.1m (h)
22	On floor Electrical Cupboard	1.8m (l) x 0.6m (d) x 2.1m (h)
23	Central Fire Protection Riser	0.8m (l) x 0.4m (w)
24	Fire extinguishers	0.4m (l) x 0.4m (d)
25	Fire Pump Flue Shaft	0.4m (l) x 0.4m (w)
26	Hydrant and sprinkler zone valve assembly	1.5m (w) x 0.5m (d)
27	Main Hydraulic Riser	2m (l) x 0.8m (w)
28	Water Meter Cupboard	0.9m (l) x 0.5m (d) x 2.3m (h)
29	Lift Shaft Dimensions	2500mm (w) x 2500mm (d)
30	Air conditioning condenser area	900mm (l) x 400mm (d) x 900mm (h)
31	Car Park Ventilation Exhaust Air Riser	1.3
33	Commercial Kitchen Exhaust Shafts	0.8
34	Fire Control Room Ventilation (sqm)	0.52
35	Fire Pump Room Ventilation (sqm)	0.26
36	Garbage Room Exhaust (sqm)	0.21
37	Grease Arrestor Room Exhaust (sqm)	0.09
39	Lobby Relief Shaft (sqm)	3.15
40	Main switch room Ventilation (sqm)	0.2
42	Stair Pressurisation Shaft (sqm)	1.4
50	Electric Water Heater	500mmØ x 885mm (h)



FRENCH AVENUE

CHAPEL ROAD

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Action Reference No.	Action	Issue Status
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C3	Egress design compliance to be confirmed. We recommend having a direct egress path to the fire control room from outside, to be confirmed by BCA.	Open
C4	We recommend allowing for traffic bollards around the substation due to the proximity to the vehicle travel path.	Open
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C10	No built form is permitted above kiosk substations. To retain substations as kiosk type, extent of building to be reviewed.	Open
C11	900mm clear trench is required below the kiosk to allow for HV feeder from authority connection, and between kiosk and main switch room. This will result in a low head height area as shown.	Open
C12	Cupboards are required to transition on level to connect to basement level. Transition and riser location to be coordinated with architecture	Open
C13	Anything within the 3m radius of the kiosk substations is required to be blast proof. Location and extent of roller shutter door to be reviewed to ensure this is not within the blast radius.	Open

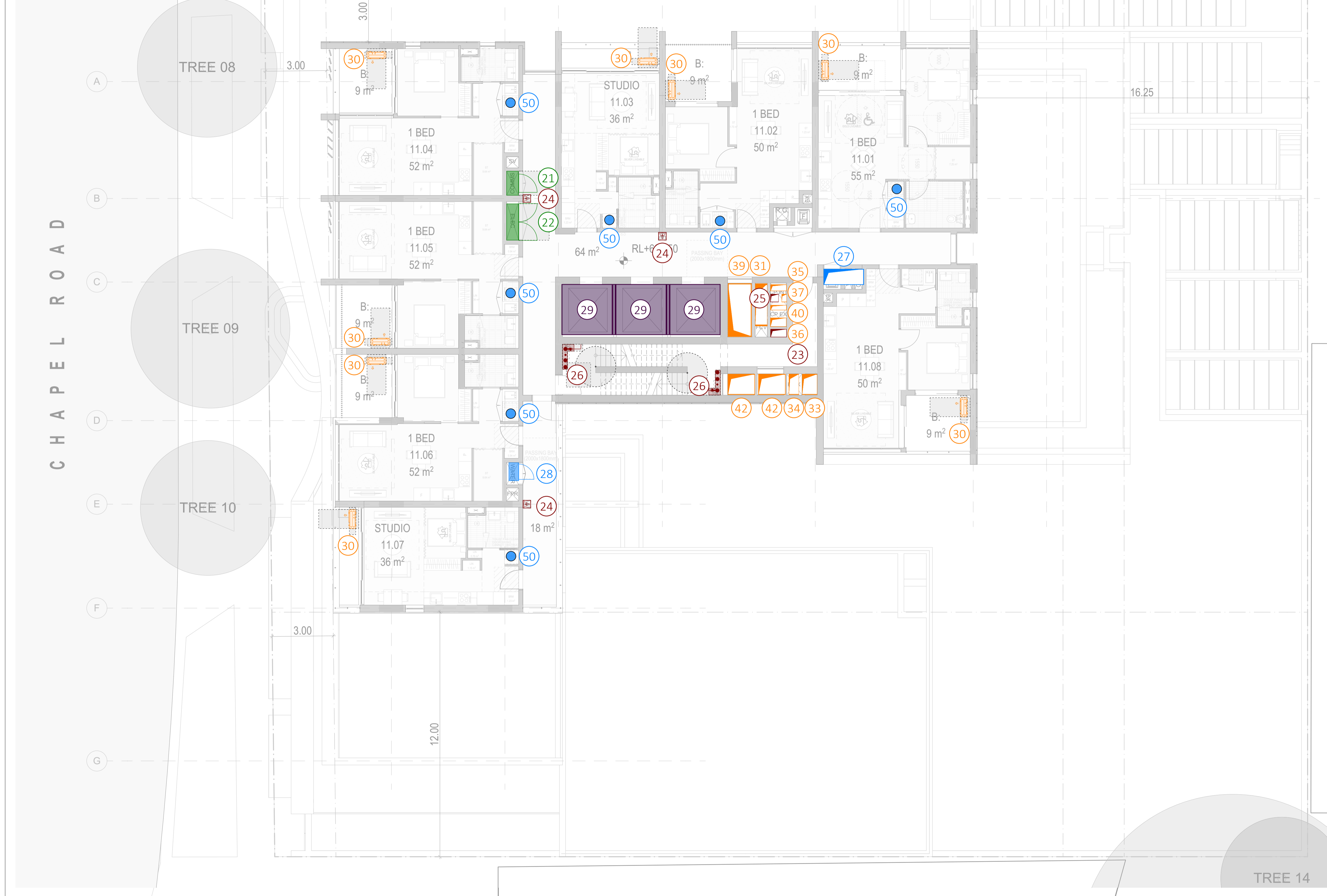
REVISIONS		
REV	DESCRIPTION	DATE
01	PRELIMINARY ISSUE	23.01.2025

PROJECT
461 CHAPEL ROAD, BANKSTOWN, NSW 2200
 DRAWING TITLE
ENGINEERING SERVICES SPATIALS - LEVEL 10

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
23.01.2025	TC	TC	LA	1:100

NORTHPOINT	PROJECT NUMBER	SKETCH NUMBER	SHEET SIZE	REVISION
↑	47359	ESP_01	A1	01

Item No.	Engineering item	Dimensions or area (sqm)
21	On floor Communications Cupboard	1.2m (l) x 0.6m (d) x 2.1m (h)
22	On floor Electrical Cupboard	1.8m (l) x 0.6m (d) x 2.1m (h)
23	Central Fire Protection Riser	0.8m (l) x 0.4m (w)
24	Fire extinguishers	0.4m (l) x 0.4m (d)
25	Fire Pump Flue Shaft	0.4m (l) x 0.4m (w)
26	Hydrant and sprinkler zone valve assembly	1.5m (w) x 0.5m (d)
27	Main Hydraulic Riser	2m (l) x 0.8m (w)
28	Water Meter Cupboard	0.9m (l) x 0.5m (d) x 2.3m (h)
29	Lift Shaft Dimensions	2500mm (w) x 2500mm (d)
30	Air conditioning condenser area	900mm (l) x 400mm (d) x 900mm (h)
31	Car Park Ventilation Exhaust Air Riser	1.3
33	Commercial Kitchen Exhaust Shafts	0.8
34	Fire Control Room Ventilation (sqm)	0.52
35	Fire Pump Room Ventilation (sqm)	0.26
36	Garbage Room Exhaust (sqm)	0.21
37	Grease Arrestor Room Exhaust (sqm)	0.09
39	Lobby Relief Shaft (sqm)	3.15
40	Main switch room Ventilation (sqm)	0.2
42	Stair Pressurisation Shaft (sqm)	1.4
50	Electric Water Heater	500mmØ x 885mm (h)



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MULTI-DISCIPLINE SERVICES
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REPRODUCTION NOTE:
 These spatial mark-ups have been documented in colour, failure to print or read these drawings in colour may result in loss of information.

Action Reference No.	Action	Issue Status
C1	Egress around fire tanks is under review. Columns to be revised as indicated. We recommend relocating the OSD tank to allow for the fire tank arrangement as shown.	Open
C2	Columns in switch room to be reviewed. If columns need to remain, the switch room may need to get deeper.	Open
C3	Egress design compliance to be confirmed. We recommend having a direct egress path to the fire control room from outside, to be confirmed by BCA.	Open
C4	We recommend allowing for traffic bollards around the substation due to the proximity to the vehicle travel path.	Open
C5	Carpark exhaust fans to be located at high level. To be coordinated with waste room layout and garbage chute locations.	Open
C6	Stair pressurisation fans to be stacked as shown.	Open
C7	Carpark intake to be coordinated with landscaping in communal outdoor space.	Open
C8	Plant to be reviewed by acoustics to determine acoustic treatment required for space. Intent for plant space to be open to above to allow for ventilation to plant.	Open
C9	Access to roof to have integrated ladder complete with handrail. We recommend egress paths to rooftop to be reviewed by BCA.	Open
C10	No built form is permitted above kiosk substations. To retain substations as kiosk type, extent of building to be reviewed.	Open
C11	900mm clear trench is required below the kiosk to allow for HV feeder from authority connection, and between kiosk and main switch room. This will result in a low head height area as shown.	Open
C12	Cupboards are required to transition on level to connect to basement level. Transition and riser location to be coordinated with architecture	Open
C13	Anything within the 3m radius of the kiosk substations is required to be blast proof. Location and extent of roller shutter door to be reviewed to ensure this is not within the blast radius.	Open

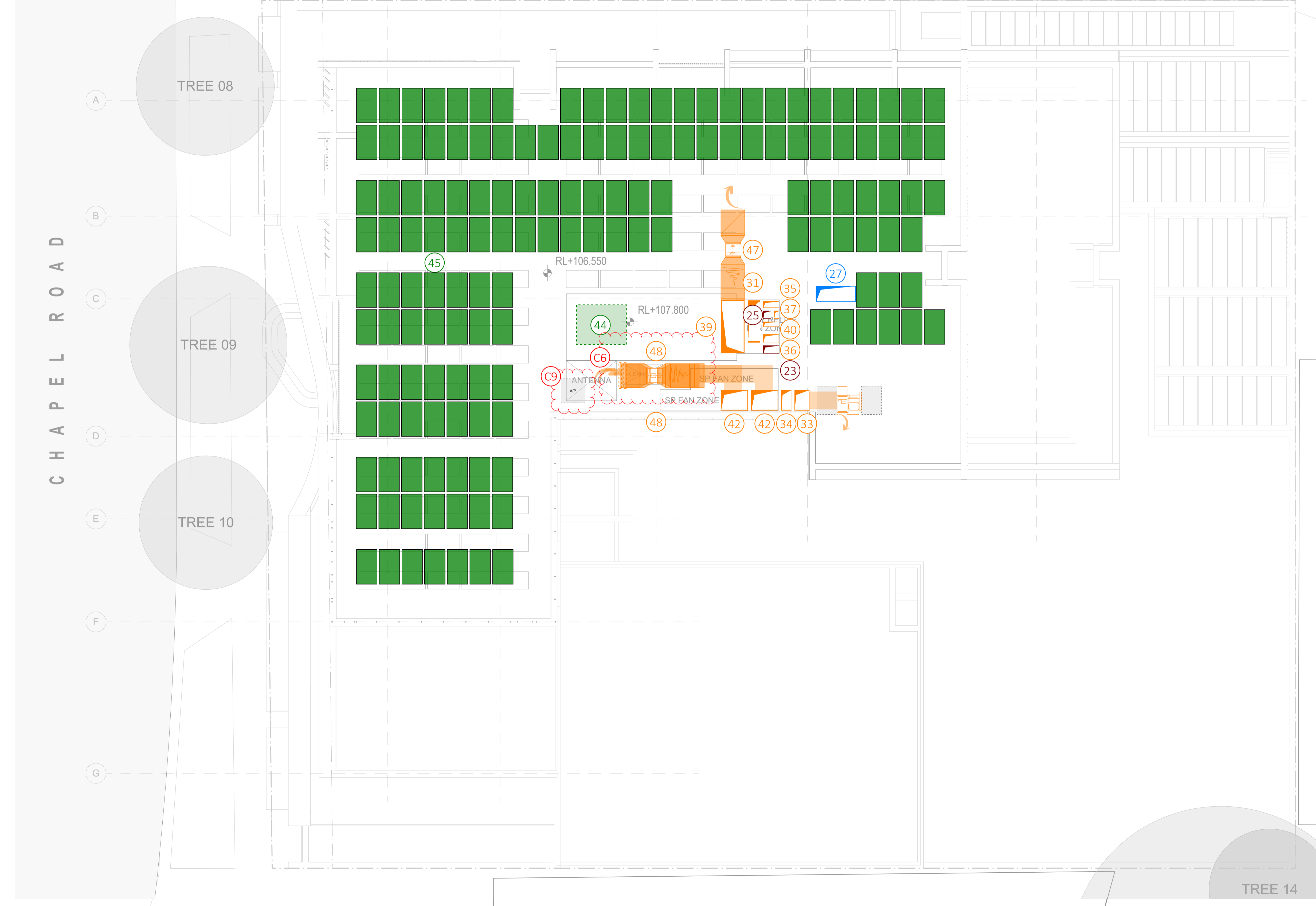
REVISIONS		
REV	DESCRIPTION	DATE
01	PRELIMINARY ISSUE	23.01.2025

PROJECT
461 CHAPEL ROAD, BANKSTOWN, NSW 2200
 DRAWING TITLE
ENGINEERING SERVICES SPATIALS - LEVEL 11-22

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
23.01.2025	TC	TC	LA	1:100

NORTHPOINT	PROJECT NUMBER	SKETCH NUMBER	SHEET SIZE	REVISION
↑	47359	ESP_01	A1	01

Item No.	Engineering Item	Dimensions or area (sqm)
25	Fire Pump Flue Shaft	0.4m (l) x 0.4m (w)
27	Main Hydraulic Riser	2m (l) x 0.8m (w)
29	Lift Shaft Dimensions	2500mm (w) x 2500mm (d)
31	Car Park Ventilation Exhaust Air Riser	1.3
33	Commercial Kitchen Exhaust Shafts	0.8
34	Fire Control Room Ventilation (sqm)	0.52
35	Fire Pump Room Ventilation (sqm)	0.26
36	Garbage Room Exhaust (sqm)	0.21
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39	Lobby Relief Shaft (sqm)	3.15
40	Main switch room Ventilation (sqm)	0.2
42	Stair Pressurisation Shaft (sqm)	1.4
44	MATV antennas	2m (l) x 2.5m (w) x 1.5m (h)
45	Solar PV Array (sqm)	599
46	Commercial Kitchen Exhaust Roof Fans	2m (l) x 1m (w) x 1.2m (h)
47	Lobby Relief Fan	2.2m (l) x 1.2m (w) x 1.3m (h)
48	Stair Pressurisation Fan	3m (l) x 0.9m (w) x 1.2m (h)



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01	PRELIMINARY ISSUE	23.01.2025

PROJECT
**461 CHAPEL ROAD, BANKSTOWN, NSW
 2200**
 DRAWING TITLE
**ENGINEERING SERVICES SPATIALS -
 ROOF**

DATE	DRAWN BY	DESIGNED BY	CHECKED BY	SCALE
23.01.2025	TC	TC	LA	1:100

NORTHPOINT	PROJECT NUMBER	SKETCH NUMBER	SHEET SIZE	REVISION
↑	47359	ESP_01	A1	01