MONA VALE GOLF CLUB 3 GOLF AVE, MONA VALE NSW 2102

MECHANICAL SERVICES SYMBOLS

INTERNAL/ACOUSTIC INSULATED

DUCTWORK, 50mm THICK UNLESS SPECIFIED

OTHERWISE. DUCTWORK INSULATION SHALL

MECHANICAL SERVICES SYMBOLS - continued

ISOLATION VALVE

 \bowtie

 \rightarrow FLEXIBLE DUCTWORK TO BE

ACOUSTICALLY LINED

	HAVE A MINIMUM R-VALUE AS PER NCC SECTION J5.5
	UN-INSULATED SHEET METAL DUCT. DUCT SIZE IS CLEAR AIRWAY SIZE.
	EXTERNALLY INSULATED DUCTWORK. DUCTWORK INSULATION SHALL HAVE A MINIMUM R-VALUE AS PER NCC SECTION J5.5
2HR	FIRE RATED DUCTWORK 2HR FIRE RATED UNLESS SPECIFIED OTHERWISE
	RIGID SPIRAL DUCTWORK
	SUPPLY GRILLE
	EXHAUST GRILLE
	SUPPLY/OUTSIDE AIR DUCTWORK DROPPER
	RETURN/EXHAUST AIR DUCTWORK DROPPER
	SUPPLY/OUTSIDE AIR DUCTWORK RISER
	RETURN/EXHAUST AIR DUCTWORK RISER
	DAMPER (PLAN OR ELEVATION VIEW) VCD DENOTES VOLUME CONTROL DAMPER OBD DENOTES OPPOSED BLADE DAMPER NRD DENOTES NON RETURN DAMPER

MOTORISED VOLUME CONTROL DAMPER

FD FIRE DAMPER

Kr. SQUARE BEND c/w TURNING VANES _____

TAKE OFF c/w BALANCING DAMPER MSSB MECHANICAL SERVICES SWITCHBOARD

> INLINE FAN AXIAL FAN

 \square

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SIDE DISCHARGE CONDENSER

TOP DISCHARGE CONDENSER

CEILING MOUNTED CASSETTE UNIT

WALL MOUNTED DISCHARGE CONDENSER

WALL MOUNTED FAN

CEILING MOUNTED FAN

	ALUUSTILALLY LINED	M	MOTORIZED 2 WAY CONTROL VALVE
\boxtimes	SUPPLY AIR GRILLE	X N N	
\square	EXHAUST AIR GRILLE		MOTORIZED 3 WAY CONTROL VALVE
	RETURN AIR GRILLE		THERMOSTATIC RADIATOR VALVE
	LINEAR SUPPLY GRILLE		MANUAL RADIATOR VALVE
1		₩	COMMISSIONING SET
	SIDE DISCHARGE GRILLE/LOUVRE	IK r 4I	FLEXIBLE CONNECTION
	LINEAR SUPPLY/RETURN AIR GRILLE		BINDER POINT
	INTAKE/DISCHARGE LOUVRE	Zon	RELIEF VALVE
	ROOF TOP EXHAUST FAN	∽ NRV	NON RETURN VALVE
		Γ	STRAINER
	ROOF MOUNTED COWL	—M DC	DRAIN COCK
AP	ACCESS PANEL - VERTICALLY MOUNTED	ιļι	UNION
ч		\bowtie	FLOW CONTROL VALVE
Â_p	ACCESS PANEL – CEILING MOUNTED	av A	AERATION VALVE
	INSULATED PLENUM BOX WITH DISCHARGE LOUVRE	-	PIPE FLOW DIRECTION ARROW
(R1) -	SCHEDULE ITEM NUMBER	0	RISER
	AIR QUANTITY (l/s)	С	DROPPER
FCU -	EQUIPMENT	\sim	PIPEWORK CONTINUATION
	TAG	//	CONTINUED LINE - UNDOCUMENTED
CP	CONTROL PANEL c/w THERMOSTAT. ON/OFF SWITCH & LOW/MEDIUM/ HIGH	Y ≏TD	TUNDISH
	FAN SPEED CONTROL. (FINAL LOCATION TO BE CO-00RDINATED ON-SITE.)		PUMP
VSD	VARIABLE SPEED DRIVE	Luc	DOOR UNDERCUT
AC	AC CONTROL	DG	DOOR GRILLE
FFCP	FIRE FAN CONTROL PANEL	-] -	DOOR GRILLE
()	TEMPERATURE SENSOR	l	DUCT SPIGOT
\bigcirc	CARBON MONOXIDE SENSOR		
P	PRESSURE SENSOR		
	TEMPERATURE INDICATOR		FAN COIL UNIT
P	PRESSURE INDICATOR		
S	SMOKE DETECTOR		
DP	DIFFERENTIAL PRESSURE SENSOR		BULKHEAD FAN COIL UNIT
PS	PRESSURE SWITCH	R	
EM	ENERGY METER	WW	AIR FILTER

(NOT ALL SYMBOLS DISPLAYED HERE HAVE BEEN USED)

ON/OFF PUSHBUTTON SWITCH

FLOW SWITCH

FS

 (\bullet)





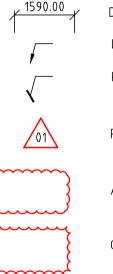
LOCALITY PLAN NTS

MECHANICAL SERVICES DRAWING SCHEDULE

DWG No.	DRAWING TITLE
22731-001-M-000	COVERSHEET & LEGEND
22731-001-M-001	NOTES & SCHEDULES
22731-001-M-100	LOWER GROUND FLOOR
22731-001-M-101	GROUND FLOOR
22731-001-M-300	DETAILS

MECHA	ANICAL ABBREVIATIONS	MEC
A/C	AIR CONDITIONING	
AF	AIR FILTER	
AHU	AIR HANDLING UNIT	
AP	ACCESS PANEL	
ATT	ATTENUATOR (SILENCER)	
BD	BALANCING DAMPER	
CA/P	CEILING ACCESS PANEL	_
СС	COOLING COIL	
CDWP	CONDENSER WATER PUMP	
CHS	CHILLER SET	
CHWP	CHILLED WATER PUMP	
CP	CONTROL PANEL	
СТ	COOLING TOWER	
CU	CONDENSING UNIT	<u>GEN</u>
EAF	EXHAUST AIR FAN	. 1
E/A	EXHAUST AIR	
EAC	EVAPORATIVE AIR COOLER	
EDH	ELECTRIC DUCT HEATER	
EFC	EVAPORATIVE FLUID COOLER	N
FCU	FAN COIL UNIT	
FD	FIRE DAMPER	Z
FFCP	FIRE FAN CONTROL PANEL	~~~~
HB	HEATER BANK	{
HC	HEATING COIL	Lu
HE	HEAT EXCHANGER	}
HHW	HEATING HOT WATER	}
HM	HUMIDIFIER	
HP	HEATING PUMP	
HWH	HOT WATER HEATER	
H/L	HIGH LEVEL	<u> </u>
10	INSPECTION OPENING	AIF
LEF	LAUNDRY EXHAUST FAN	5
KEF	KITCHEN EXHAUST FAN	7
L/L	LOW LEVEL	10
MD	MOTORISED DAMPER	14
MSSB	MECHANICAL SERVICES SWITCHBOARD	25
NRD	NON RETURN DAMPER	35
OAF	OUTSIDE AIR FAN	45
OBD	OPPOSED BLADE DAMPER	NOTE : WHERE F HEIGHT (
ΡΑር	PACKAGED WATER COOLED UNIT	FLEX LE
ΡΑΡΑ	POSITIVE AIR PRESSURE ATTENUATOR	INCREAS
PC	PRECISION COOLER	
RA	RETURN AIR	
RAF	RETURN AIR FAN	
RL	REDUCED LEVEL	
SA	SUPPLY AIR	
SAF	SUPPLY AIR FAN	
SD	SMOKE DAMPER	(NOT ALL SYM
SF	SUPPLY FAN	
SPF	STAIR PRESSURISATION FAN	
S/A	SUPPLY AIR	
TD	TUNDISH	
TEF	TOILET EXHAUST FAN	
T/A		
Т/В	TO BELOW	
VAV	VARIABLE AIR VOLUME BOX	
VCD	VOLUME CONTROL DAMPER	

		CH۱	N -
			C۲
<u> </u>			
	- CD -		_
	RF -		
— R			
	EA —		



EXIBLE DUCT SCHEDULE

AIRFLOW	DIA FLEX
0-50	150
51-70	180
71-100	200
101-140	230
141-180	250
181-250	300
251-350	350
351-450	400
451-525	450

FLEXIBLE DUCT DIAMETER EXCEEDS DUCT OVAL CONNECTORS ARE TO BE USED. MAY ENGTH 3M, OVER 3M FLEX INSULATION ASES TO MATCH DUCT INSULATION.

YMBOLS DISPLAYED HERE HAVE BEEN USED)

ISSUE	DATE	AMENDMENT	INT.	APP.
01	25.02.2022	PRELIMINARY ISSUE	CG	EA
02	31.03.2022	REISSUE FOR DA	AA	ALA

ECHANICAL SERVICES LINETYPES

HWR ———— HOT WATER RETURN (HWR) HTHW —— HIGH TEMP HOT WATER (HTHW) THWR ——— HIGH TEMP HOT WATER RETURN (HTHWR) CD ------ CONDENSATE DRAIN (CD) - RF ------ REFRIGERANT FLOW (RF) R ----- REFRIGERANT RETURN (RFR) - SA — SUPPLY AIR (SA) - EA - EXHAUST AIR (EA)

NERAL DRAWING SYMBOLS

DIMENSION STYLE

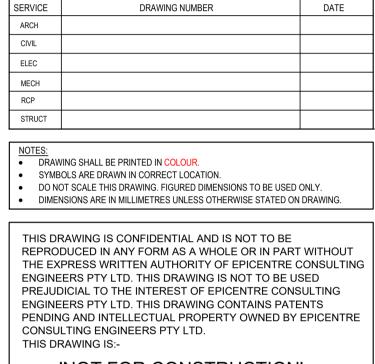
LEADER LINE

PIPE LEADER

REVISION

AMENDMENTS / CHANGES

ON HOLD



'NOT FOR CONSTRUCTION'

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HGW HGW PROJECTS

Client/Architect:

Drawing Title:

CO-ORDINATED REFERENCE DRAWINGS





MONA VALE GOLF CLUB 3 GOLF AVE, MONA VALE NSW 2102

MECHANICAL SERVICES **COVER SHEET & LEGEND**

NOT FOR CONSTRUCTION

	North Point	i:		Design:		
				Design Validated:	EA	
				Amendment Approv	^{ed:} JM	
				Drawn:		
	Date:	MARCH 2022		Scale: (A1)	NTS	
DEVELOPMENT APPLICATION	Job No.: 227	'31-001 -	Disc:	Dwg No.:	Stage:	-02

NOTES

<u>GENERAL:</u>

- 1. THE MECHANICAL CONTRACTOR SHALL CERTIFY THE INSTALLATION.
- SET OUT OF ACCESS PANELS, LOUVRES & GRILLES SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. INSTALLATION OF ACCESS PANELS & CUTTING OUT GRILLES SHALL BE PROVIDED BY WALL/CEILING CONTRACTOR.
- 3. ALL LOUVRES & OUTDOOR AIR INTAKE FANS SHALL HAVE VERMIN PROOF WIRE MESH INSIDE.
- PROVIDE ANCILLARY SUPPORTS FOR MECHANICAL EQUIPMENT.
- PROVIDE ALL NECESSARY STRUCTURAL SUPPORTS FOR MECHANICAL EQUIPMENT, DUCTWORK & WIRING.
- 6. ALL WIRING SHOULD BE INSTALLED TO AS3000.
- ALL EQUIPMENT SHALL BE PROVIDED WITH LOCAL ELECTRICAL ISOLATORS.
- POWER SUPPLIES TO BE TERMINATED AT THE MECHANICAL SERVICES SWITCHBOARD BY ELECTRICAL TRADE. CONTROL & POWER WIRING TO ALL EQUIPMENT BY THE MECHANICAL TRADE.
- 9. ALL SQUARE BENDS TO HAVE TURNING VANES UNLESS:
 a) THE DUCT DIMENSION PERPENDICULAR TO THE TURNING VANE IS LESS THAN 200mm.
- WHERE DUCTWORK PENETRATES RISERS OR DROPPERS, AN AIR TIGHT SEAL SHALL BE PROVIDED. THE SEAL SHALL BE FIRE RATED WHERE REQUIRED.
- 12. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH STRUCTURAL, FIRE, HYDRAULIC, MECHANICAL & ELECTRICAL ENGINEERS' DETAIL DRAWINGS & SPECIFICATIONS.
- 13. CO-ORDINATE ALL WORKS WITH ALL OTHER SERVICES ASSOCIATED WITH THE PROJECT.
- 14. ALL PROPOSED WORKS TO COMPLY WITH THE ENERGY EFFICIENCY. REQUIREMENTS OF THE BUILDING CODE OF AUSTRALIA (BCA) PART J.
- ALL WORKS TO BE COMPLETED ACCORDING TO BUILDING CODE OF AUSTRALIA & AUSTRALIAN STANDARD REQUIREMENTS.
- ALLOW FOR A QUALIFIED TECHNICIAN TO UNDERTAKE FOUR (4 ONLY) x TWO HOURLY VISITS TO SITE AFTER HAND OVER TO RESOLVE ANY ISSUES RAISED BY THE SUPERINTENDENT.
- 17. THE CONTRACTOR IS TO PAY ALL ASSOCIATED FEES & MAINTAIN A COMPLETE SET OF DRAWINGS ON SITE WITH THE LATEST AMENDMENTS & REVISIONS. RECORD/MARK ALL DEVIATIONS & CHANGES ON THE DRAWINGS DUE TO SITE CONDITIONS, AS THE WORK PROGRESSES. AFTER PRACTICAL COMPLETION, SUBMIT A FULL SET OF "AS BUILT" DRAWINGS OF AN EQUAL STANDARD & FORMAT OF THE CONTRACT DRAWINGS. PROVIDE 3 COPIES OF THE "AS BUILT" DRAWINGS. THE ORIGINALS ARE TO BE FORWARDED TO THE BUILDING OWNER.
- ALL WORK SHALL BE UNDERTAKEN IN ACCORDANCE WITH NEW SOUTH WALES WORKPLACE HEALTH & SAFETY REGULATIONS.
- ALL ADDITIONAL ACCESS PANELS & THEIR LOCATIONS TO BE APPROVED & CO-ORDINATED ON SITE WITH THE ARCHITECT.
- ALL WALL MOUNTED SPLIT UNITS, CEILING CASSETTES, BULKHEAD UNITS & FAN-COIL UNITS TO BE PROVIDED WITH CONDENSATE DRAINS, DIRECTED TO THE NEAREST TUNDISH & SHALL BE MINIMUM Ø32mm WITH MINIMUM FALL OF 1:100. DRAINS SHALL BE INSULATED FOR 5m FROM THE UNIT.
- 21. FANS TO BE RESILIENTLY MOUNTED & PROVIDED WITH SPRING OR NEOPRENE PADS TO ABSORB VIBRATION, TO FAN MANUFACTURERS RECOMMENDATIONS.

- ALL DIMENSIONS TO BE VERIFIED ON SITE (VOS) PRIOR TO CONSTRUCTION/MANUFACTURE. REFER ALL DISCREPANCIES TO EPICENTRE CONSULTING ENGINEERS". DO NOT SCALE OFF DRAWINGS.
- 23. REFER TO THE DELIVERABLES WITHIN THE ASSOCIATED SPECIFICATION. PROVIDE A SCHEDULE OF DELIVERABLES TO THE SITE SUPERVISOR. THIS IS TO INCLUDE DATES FOR WORKSHOP DRAWINGS, COMMISSIONING FIGURES, MANUALS & AS INSTALLED DRAWINGS. REFER TO THE MECHANICAL SERVICES SPECIFICATION FOR FURTHER DETAILS ON THESE ITEMS.
- 24. ALL SUPPLY AIR DIFFUSERS TO BE WASHED, CLEANED & PLENUMS VACUUMED TO ENSURE ALL DUST & DIRT IS REMOVED.
- 25. DOOR GRILLES TO BE SUPPLIED & INSTALLED BY MECHANICAL CONTRACTOR. DOOR TO BE CUT BY BUILDER.
- 26. ALL WORK & MATERIAL NOT SPECIFICALLY MENTIONED IN THE FOLLOWING MECHANICAL SERVICES DRAWINGS BUT OBVIOUSLY NECESSARY FOR THE PROPER & COMPLETE INSTALLATION & OPERATION OF THE SERVICES, SHALL BE DEEMED TO HAVE BEEN INCLUDED IN THE CONTRACT. NO VARIATIONS WILL BE ALLOWED FOR THE NECESSARY WORK UNFORSEEN BY THE MECHANICAL SUB-CONTRACTOR THROUGH NOT HAVING TAKEN THIS PRECAUTION.
- 27. THE MECHANICAL CONTRACTOR SHALL ENSURE THAT ALL REFRIGERANT PIPEWORK SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS & IN ACCORDANCE WITH AS5149 MINIMUM REFRIGERANT CONCENTRATION LEVELS.

<u>DUCTWORK:</u>

- 1. ALL DUCT DIMENSIONS ARE CLEAR INTERNAL DIMENSIONS.
- CONSTRUCTION & INSTALLATION OF DUCTWORK SHALL BE IN ACCORDANCE WITH AS1668 & AS4254.
- 3. ALL FLEXIBLE DUCTS TO BE ACOUSTIC TYPE WITH INNER DUCT WRAPPED IN 32 KG/M3, 25mm THICK FIBRE GLASS WITH ALUMINUM OUTER FOIL FACE LAMINATE. FLEXIBLE DUCT TO COMPLY WITH BCA SPEC C1.10 & AS4256-1996.
- THE TOTAL LENGTH OF FLEXIBLE DUCT BETWEEN SPIGOT & OUTLET SHALL NOT EXCEED 6m.
- THE CONTRACTOR SHALL PROVIDE ALL AIR DAMPERS REQUIRED TO ADEQUATELY COMMISSION & BALANCE ALL AIR SYSTEMS.
- PROVIDE ACCESS PANELS IN DUCTWORK FOR ALL FIRE DAMPERS.

CONTROLS

TOILET EXHAUST:

 TOILET EXHAUST FANS SHALL BE PROVIDED WITH AN INTERLOCK TO THE LIGHTING CIRCUIT (BY ELECTRICAL TRADE) c/w A 5 MIN. RUN-ON TIMER (ADJUSTABLE).

KITCHEN HOOD EXHAUST & MAKE-UP AIR:

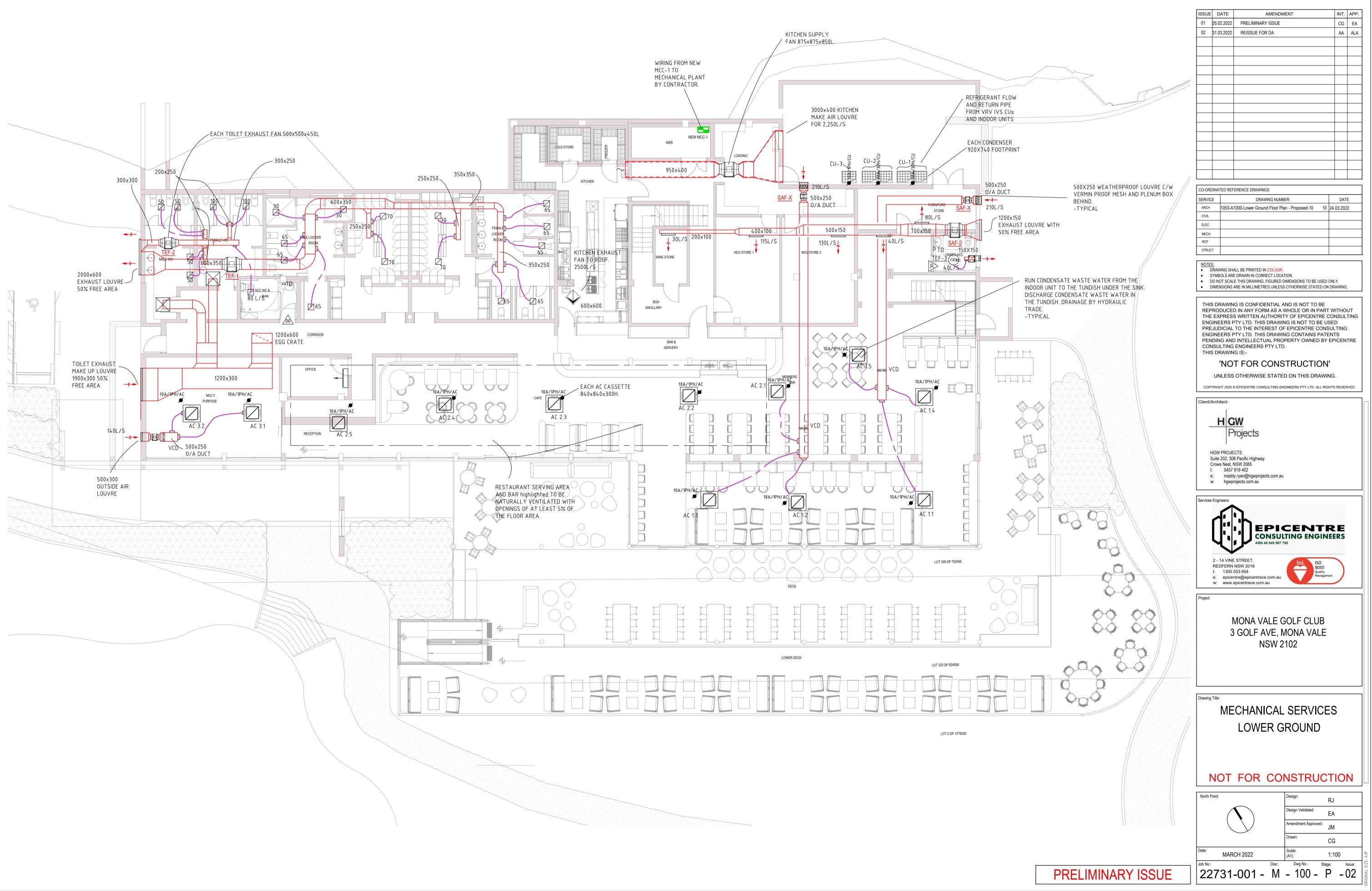
1. THE FOLLOWING FANS SHALL BE INTERLOCKED WITH THE OPERATION OF THE EXHAUST HOOD.

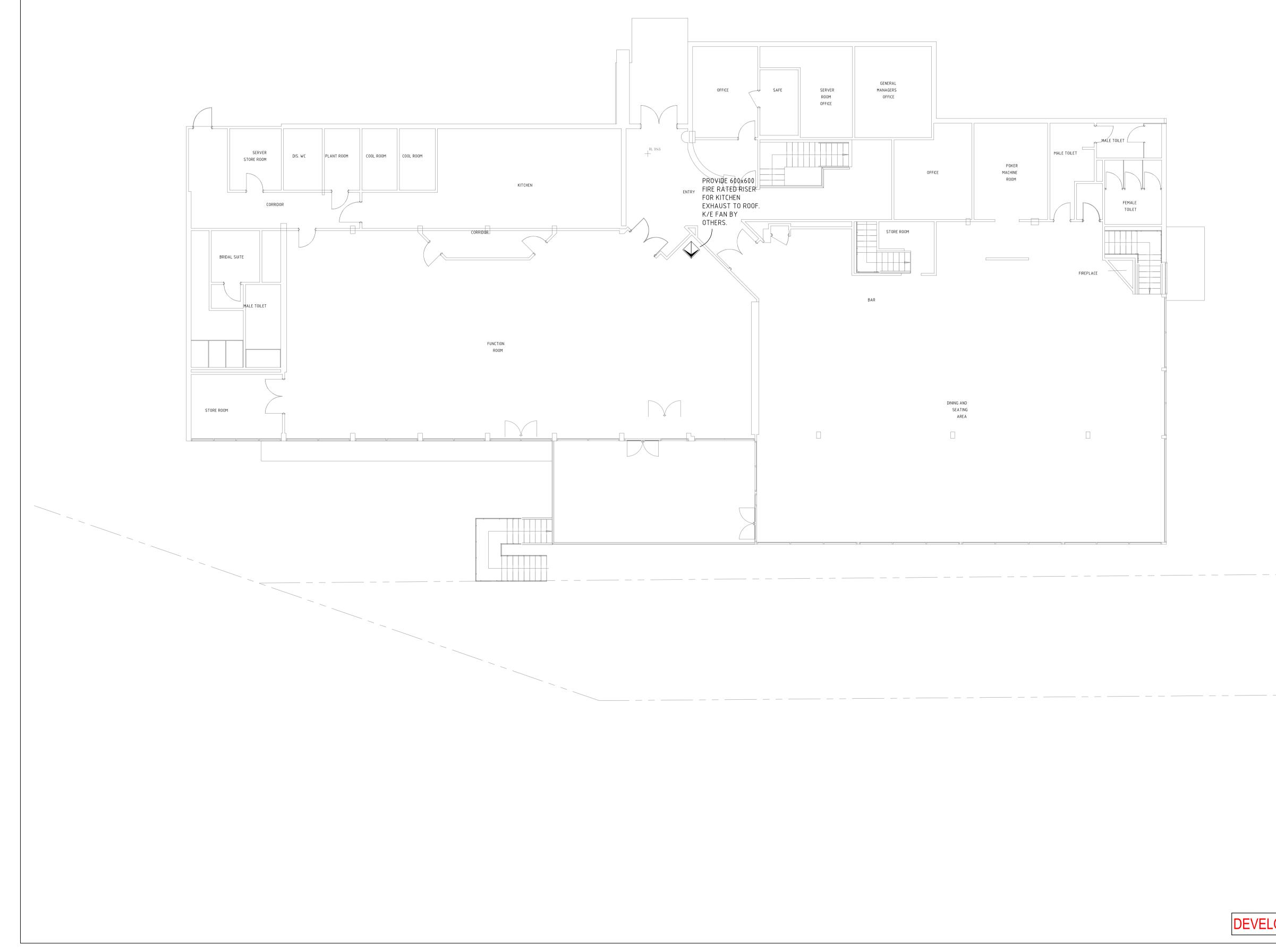
FIRE MODE:

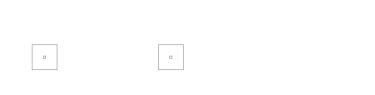
 THE FIRE CONTRACTOR SHALL PROVIDE FIRE TRIPS ADJACENT ALL MECHANICAL EQUIPMENT, REQUIRED TO SHUTDOWN IN FIRE MODE. FINAL TERMINATION BY THE MECHANICAL CONTRACTOR. FIRE SHUTDOWN SHALL BE IN ACCORDANCE WITH AS1668.1 & AS1670.1.

DEVELOPMENT APPLICATION

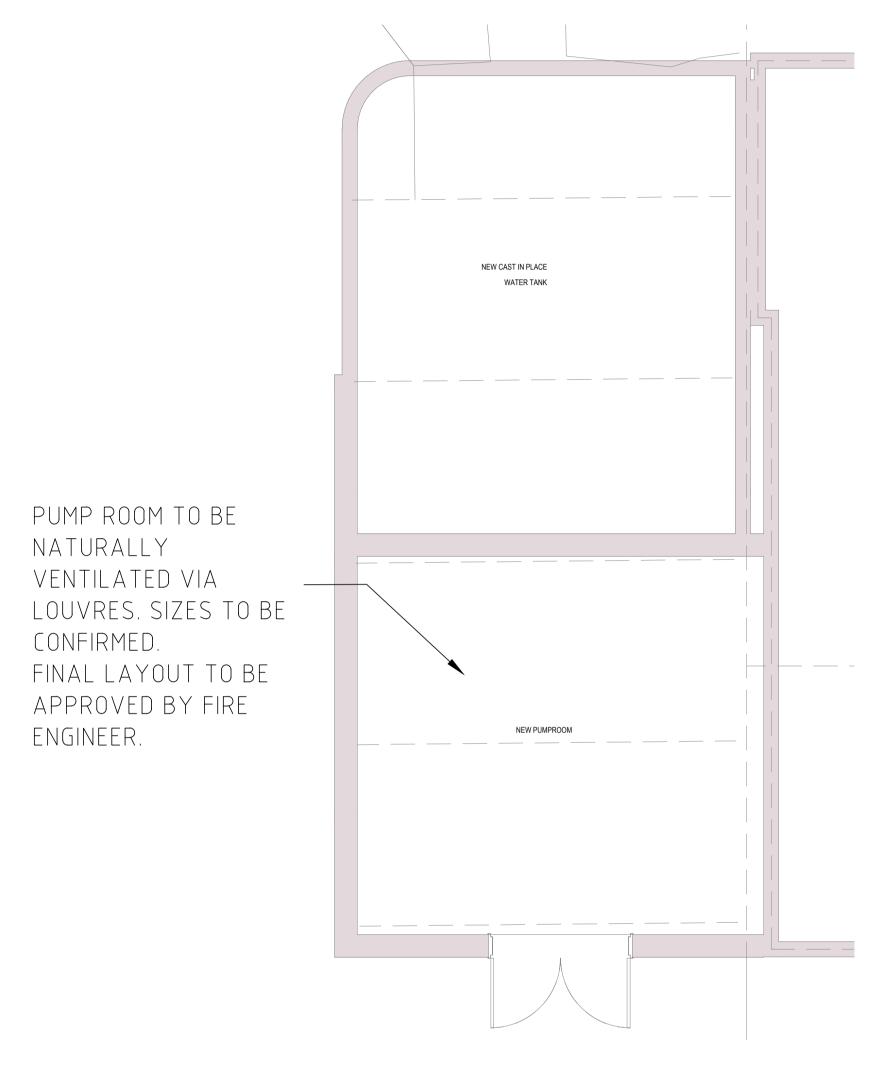
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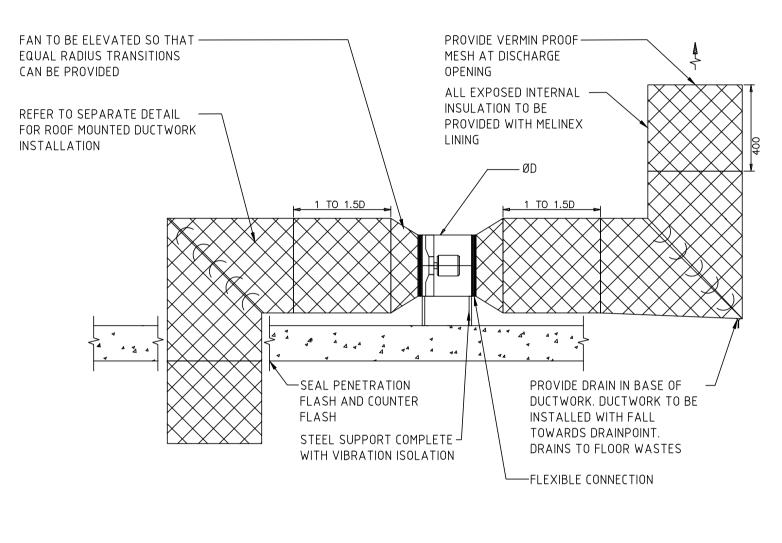
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FIRE HYDRANT TANKS AND PUMPROOM SCALE: NTS

DEVELOPMENT APPLICATION

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