

**LEGEND**

	DUCTWORK(see DUCTWORK INSULATION table for details of external insulation thickness)		PANEL FILTERS		FAN
	METAL DUCTWORK INSULATED INTERNALLY WITH 38mm THICK INSULATION		DUCT SPIGOT WITH BUTTERFLY DAMPER		SUPPLY AIR DIFFUSER WITH INTERNALLY INSULATED CUSHION HEAD
	METAL DUCTWORK INSULATED INTERNALLY WITH 50mm THICK INSULATION		DUCT INTERSECTION		SUPPLY AIR DIFFUSER, 3 WAY BLOW
	FIRE RATED DUCTWORK - 2 HOUR FIRE RATING U.N.O.		SUPPLY AIR REGISTER (R = RETURN, E = EXHAUST)		SUPPLY AIR REGISTER AS ABOVE BUT WALL MOUNTED (L - WEATHERPROOF LOUVRE)
	ACOUSTIC FLEXIBLE DUCTWORK - SIZE AS PER SPECIFICATION (Note: maximum TOTAL length to be 5.0m)		BRANCH DUCT CONNECTION WITH SPLITTER DAMPER		DOUBLE SIDED LIGHT AIR TROFFER (SUPPLY)
	LINEAR DIFFUSER		FLEXIBLE CONNECTION (e.g. fan coil unit)		SINGLE SIDED LIGHT AIR TROFFER (SUPPLY)
	EQUIPMENT REFERENCE		AIR TRANSFER DUCT WITH 50mm INTERNAL ACOUSTIC LINING		2 SLOT LINEAR DIFFUSER
	CEILING ACCESS PANEL (BY OTHERS)		SQUARE TO ROUND TRANSITION		CEILING MOUNTED EXHAUST GRILLE
	REFRIGERANT PIPEWORK		SINGLE BLADE VOLUME CONTROL DAMPER		CEILING MOUNTED RETURN AIR GRILLE
	CONDENSATE DRAIN		MULTI BLADE VOLUME CONTROL DAMPER (M - MOTORIZED)		DOOR GRILLE
	DUCT SET UP IN DIRECTION OF ARROW (SD - SET DOWN)		NON-RETURN DAMPER		
	MITRE BEND WITH TURNING VANES (AIRFOIL BLADES)		OPPOSED BLADE DAMPER		
	FIRE DAMPER - TO BE INSTALLED WITH ADJACENT ACCESS PANEL (on upstream side where accessible)		DUCT MOUNTED ACCESS PANEL		
	MOTORIZED FIRE DAMPER - TO BE INSTALLED WITH ADJACENT ACCESS PANEL (on upstream side where accessible)		ELECTRIC DUCT HEATER- REFER TO SCHEDULE (Note: Fire rated insulation to extend minimum 300mm either side)		

**GENERAL NOTES**

- TENDERERS MUST VISIT THE SITE TO INSPECT THE INSTALLATION & ASCERTAIN INSTALLATION LIMITATIONS & COORDINATION REQUIREMENTS.
- COORDINATE NEW MECHANICAL SERVICES WITH STRUCTURE, CEILING & OTHER SERVICES, ETC. ALLOW FOR SET UPS / SET DOWNS & TRANSITIONS WHERE REQUIRED.
- DRAWINGS ARE DIAGRAMMATIC ONLY. FOR DETAILS REFER TO THE SITE
- DUCT SIZES ARE CLEAR AIRWAY DIMENSIONS IN MILLIMETRES (mm).
- CHECK ALL DIMENSIONS & LOCATIONS ON SITE PRIOR TO MANUFACTURE.
- PROVIDE AN AIRTIGHT SEAL WHERE DUCTWORK OR PIPEWORK PENETRATES PLANT ROOM WALL, PARTITIONS & THE LIKE.
- ALL AIR CONDITIONING SUPPLY & RETURN AIR DUCTWORK SHALL BE EXTERNALLY INSULATED UNLESS NOTED OTHERWISE.
- ALL MECHANICAL SERVICES ROUTES SHOWN ARE INDICATIVE ONLY. PIPEWORK AND DUCTWORK RUNS ARE TO BE CONFIRMED & COORDINATED WITH OTHER TRADES ON SITE.
- BALANCE SUPPLY AIR QUANTITIES TO THAT SHOWN ON THE DRAWING.
- ALL CLEARANCES FOR NEW DUCTWORK & AIR CONDITIONING EQUIPMENT TO BE CONFIRMED ON SITE.
- DELETED.
- MAXIMUM NOISE LEVELS NOT TO EXCEED THOSE LISTED IN AS2107. MINIMUM dB(A) LIMIT TO COMPLY. ACOUSTIC LAGGING, SILENCERS & ATTENUATION PROVISIONS TO THE ACOUSTIC CONSULTANTS SPECIFICATIONS AND AS REQUIRED TO MEET AS2107 LIMITS - PART OF THESE WORKS.
- ALL VSD TO BE ABB OR DANFOSS.
- ALL VSD'S TO HAVE THE MINIMUM FOLLOWING I/O (DI = 2, DO = 4, AI = 2, AO = 0) C/W HIGH LEVEL INTERFACE TO BMS WITH MODBUS OR BACKNET TO SUIT BMS SUPPLIER.
- ALL COLOURS OF GRILLES, DIFFUSERS & LOUVRES AND THE LIKE TO BE SUBMITTED TO ARCHITECT FOR APPROVAL.
- ALL EXTERNAL MECHANICAL SERVICES (DUCT, POWER & CONTROL WIRING, PIPES, ETC) TO BE METAL CLAD (WIRING IN METAL TRUNKING) AND PAINTED IN COLOUR APPROVED BY THE ARCHITECT.
- ALL EXTERNAL MECHANICAL SERVICES TO BE FREE DRAINING.
- ALL EXTERNAL MECHANICAL WORKS TO BE IP56 OR LOCATED IN AN IP56 ENCLOSURE.

**ABBREVIATIONS**

ATT	ATTENUATOR	FW	FLOOR WASTE
ACU	AIR CONDITIONING UNIT	G	GAS
AF	AIR FILTER	GEF	GARBAGE EXHAUST FAN
AHU	AIR HANDLING UNIT	HC	HEATING COIL
AP	ACCESS PANEL	HHW	HEATING HOT WATER
ATU	AIR TERMINAL UNIT	HM	HUMIDIFIER
B	BOILER	HWB	HOT WATER BOILER
C	COMPRESSOR	HWS	HOT WATER SERVICE
CC	COOLING COIL	HX	HEAT EXCHANGER
CCC	CLOSED CIRCUIT COOLER	K/E	KITCHEN EXHAUST
CD	CONDENSER	KEF	KITCHEN EXHAUST FAN
CEF	CAR PARK EXHAUST FAN	MFD	MOTORISED FIRE DAMPER
CH	CHILLER	MSSB	MECHANICAL SERVICES SWITCHBOARD
CHW	CHILLED WATER	MVCD	MOTORISED VOLUME CONTROL DAMPER
CHW F & R	CHILLED WATER FLOW AND RETURN	N/C	NORMALLY CLOSED
CHWP	CHILLED WATER PUMP	N/O	NORMALLY OPEN
CP	CONDENSATE PUMP	NRD	NON RETURN DAMPER
CRAC	COMPUTER ROOM AIR COND. UNIT	O/A	OUTSIDE AIR
CT	COOLING TOWER	OBD	OPPOSED BLADE DAMPER
CU	CONDENSING UNIT	O/F	OVERFLOW
CW	CONDENSER WATER	P	PUMP
CW F & R	CONDENSER WATER FLOW AND RETURN	PAC	PACKAGED AIR CONDITIONING UNIT
CWL	COWL	R/A	RETURN AIR
CWP	CONDENSER WATER PUMP	S/A	SUPPLY AIR
CWS	COLD WATER SERVICE	SAF	SUPPLY AIR FAN
D	INSULATED COPPER DRAIN	SD	SET DOWN
DCW	DOMESTIC COLD WATER	SEF	SMOKE EXHAUST FAN
DG	DOOR GRILLE	SEP	CENTRIFUGAL SEPERATOR
DHW	DOMESTIC HOT WATER	SPF	STAIR PRESSURISATION FAN
E/A	EXHAUST AIR	SSD	STREAM SPLITTER DAMPER
EAF	EXHAUST AIR FAN	SU	SET UP
EC	EVAPORATIVE CONDENSER	TAD	TRANSFER AIR DUCT
EDH	ELECTRIC DUCT HEATER	TO ABOVE	TO ABOVE
ESP	ELECTRO-STATIC PRECIPITATOR	T/B	TO BELOW
EVP	EVAPORATIVE CONDENSER	T/E	TOILET EXHAUST
F	FLOW	TEF	TOILET EXHAUST FAN
F/A	FROM ABOVE	TD	TUNDISH
F/B	FROM BELOW	U.N.O.	UNLESS NOTED OTHERWISE
FIP	FIRE INDICATOR PANEL	VAV	VARIABLE AIR VOLUME
FCU	FAN COIL UNIT	VCD	VOLUME CONTROL DAMPER
FD	FLUE DILUTION FAN		
FD	FIRE DAMPER		

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