

SINSW - DUNDAS PUBLIC SCHOOL UPGRADE

MECHANICAL DRAWING SET

NDY | SCHEMATIC DESIGN

SHEET NUMBER	SHEET NAME	REVISION	REVISION DATE
DUPS-NDY-XX-XX-DR-M-000000	COVER SHEET	5	18/12/2024
DUPS-NDY-XX-XX-DR-M-000001	LEGEND & GENERAL NOTES	5	18/12/2024
DUPS-NDY-00-00-DR-M-001011	SITE PLAN	5	18/12/2024
DUPS-NDY-B00L-GF-DR-M-120010	BLOCK L GROUND FLOOR LAYOUT	5	18/12/2024
DUPS-NDY-B00L-RF-DR-M-120111	BLOCK L ROOF PLAN	5	18/12/2024

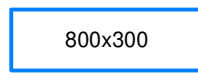
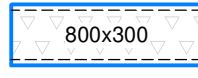
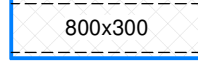
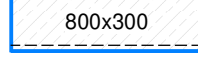
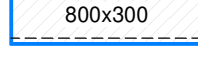
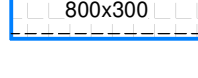

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A TETRA TECH COMPANY

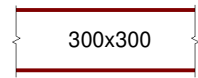
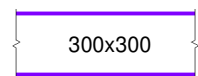

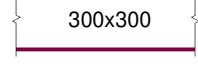
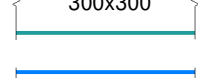

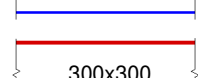

MECHANICAL LAYOUT ELEMENTS

DUCT & INSULATION TYPES


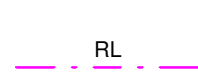

REFER TO SPECIFICATION FOR INSULATION REQUIREMENTS

	DENOTES EXTERNALLY INSULATED SUPPLY/RETURN AIR DUCTWORK. OUTSIDE & EXHAUST AIR UNINSULATED UNLESS INDICATED OTHERWISE.
	DENOTES 100mm INTERNALLY INSULATED DUCTWORK.
	DENOTES 75mm INTERNALLY INSULATED DUCTWORK.
	DENOTES 50mm INTERNALLY INSULATED DUCTWORK.
	DENOTES 38mm INTERNALLY INSULATED DUCTWORK.
	DENOTES FIRE RATED DUCTWORK. REFER TO SPECIFICATION FOR DETAILS.
	DENOTES FLEXIBLE DUCTWORK. REFER TO SCHEDULE FOR SIZE.

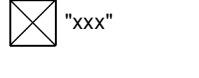
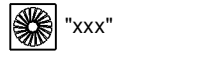
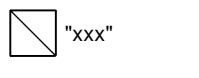
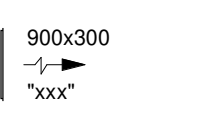
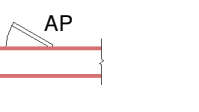

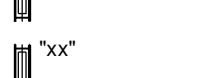
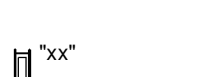
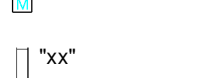

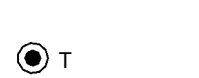








DUCT SYSTEM COLOURS

	EXHAUST AIR GENERAL DUCTWORK (EA)
	MAKEUP AIR DUCTWORK (MA)
	OUTSIDE AIR DUCTWORK (OA)
	RETURN AIR DUCTWORK (RA)
	RELIEF AIR DUCTWORK (RE)
	SUPPLY AIR DUCTWORK (SA)
	TRANSFER AIR DUCTWORK (TA)
	TOILET EXHAUST AIR DUCTWORK (TE)

PIPEWORK SYSTEM COLOURS & ABBREVIATIONS

	CONDENSATE DRAIN
	REFRIGERANT DISCHARGE
	REFRIGERANT LIQUID LINES

DEVICES & EQUIPMENT

	"xx"	SUPPLY AIR DIFFUSER 4 WAY BLOW WITH INTERNALLY LINED CUSHION HEAD. AIR QUANTITY AS NOMINATED.
	"xx"	RADIAL VANE SWIRL DIFFUSER WITH INTERNALLY LINED CUSHION HEAD. AIR QUANTITY AS NOMINATED.
	"xx"	EGG CRATE TYPE AIR GRILLE WITH INTERNALLY LINED CUSHION HEAD U.N.O. REFER TO DRAWINGS FOR SYSTEM TYPE. AIR QUANTITY AS NOMINATED.
	900x300 "xx"	DOUBLE DEFLECTION SIDEWALL REGISTER. SIZE AND AIR QUANTITY AS NOTED.
	AP	DENOTES DUCT MOUNTED ACCESS PANEL.
		FIRE DAMPER
	"xx"	VOLUME CONTROL DAMPER
	"xx"	DAMPER (NOT VOLUME CONTROL) "xx" DENTOES DAMPER TYPE. REFER TO ABBREVIATION LIST
	"xx"	MOTORISED DAMPER "xx" DENTOES DAMPER TYPE. REFER TO ABBREVIATION LIST
	"xx"	DUCT HEATER "xx" DENOTES TYPE
		MECHANICAL SERVICES SWITCHBOARD
	T	TUNDISH. PROVIDED BY HYDRAULICS TRADE
	CO ₂	CARBON DIOXIDE SENSOR
	P	CEILING ACCESS PANEL BY BUILDING TRADE
	AHS	DENOTES WALL MOUNTED CONTROL PANEL. MOUNTED AT 1800mm AFFL U.N.O. AHS = AFTER HOURS SWITCH (NOTED IF APPLICABLE)
	T	TEMPERATURE SENSOR
	T/H	TEMPERATURE & HUMIDITY SENSOR
	H	HUMIDITY SENSOR
	U	UNDERCUT DOOR BY OTHERS (NOMINALLY 25mm)

MECHANICAL ABBREVIATIONS

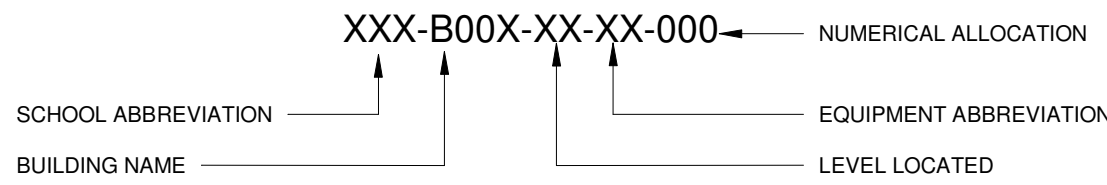
GENERAL

Ø	DIAMETER (NOMINAL BORE)
B	BLANK
CM	CEILING MOUNTED
c/w	COMPLETE WITH
EA	EXHAUST AIR
FD	FIRE DAMPER
IC	IN CEILING
L/S	LITRES PER SECOND
m ² / SQM	SQUARE METRE
MA	MAKEUP AIR
MFD	MOTORISED FIRE DAMPER
MFSO	MOTORISED FIRE/SMOKE DAMPER
MSD	MOTORISED SMOKE DAMPER
MVCD	MOTORISED VOLUME CONTROL DAMPER
NRD	NON RETURN DAMPER
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
U.N.O.	UNLESS NOTED OTHERWISE
VCD	VOLUME CONTROL DAMPER
WM	WALL MOUNTED

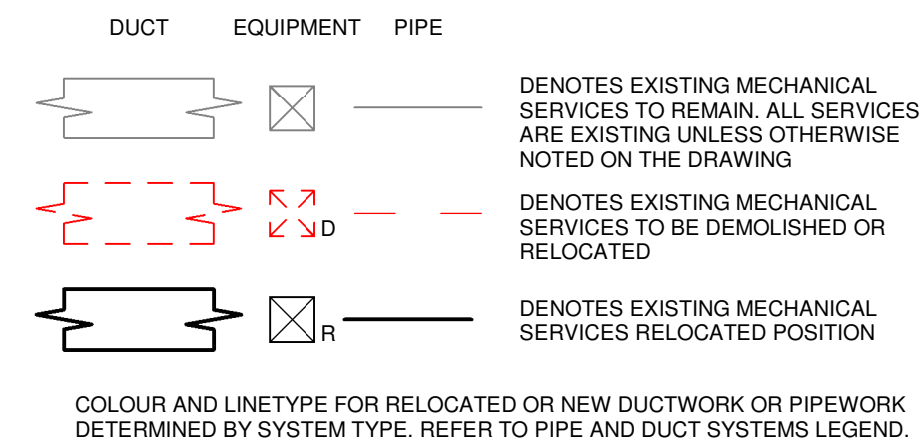
EQUIPMENT

AC	INDOOR AIR CONDITIONING UNIT
ATT	ACOUSTIC ATTENUATOR
BMS	BUILDING MANAGEMENT SYSTEM
EA	EXHAUST AIR FAN
FCU	FAN COIL UNIT
MSSB	MECHANICAL SERVICES SWITCHBOARD
OAF	OUTSIDE AIR FAN
RAF	RETURN / RELIEF AIR FAN
RC	ROOF COWL
SAF	SUPPLY AIR FAN
TEF	TOILET EXHAUST FAN
UNO	UNLESS NOTED OTHERWISE
VSD	VARIABLE SPEED DRIVE
ERV	ENERGY RECOVERY VENTILATOR

PROJECT SPECIFIC NAMING CONVENTION



PHASING



GENERAL NOTES

- ALL DUCT SIZES ARE CLEAR INTERNAL AIRWAY DIMENSIONS.
- ALL DIMENSIONS ARE IN MILLIMETRES.
- ALL AIR AND FLUID FLOWS INDICATED ARE LITRES / SECOND.
- ALL PIPE SIZES ARE NOMINAL DIAMETER UNLESS NOTED OTHERWISE. CONVERT TO ACTUAL SIZES TO SUIT THE MATERIAL USED.
- ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE MECHANICAL SERVICES SPECIFICATION.
- DRAWINGS PROVIDED ARE NOT TO BE USED FOR MANUFACTURE OF DUCTWORK OR ORDERING OF EQUIPMENT. SHOP DRAWINGS SHALL BE PRODUCED AND SUBMITTED FOR REVIEW TO THE MECHANICAL ENGINEER PRIOR TO COMMENCEMENT OF WORKS ON SITE.
- DO NOT SCALE FOR SIZING. REFER TO ARCHITECTURAL, MANUFACTURERS DOCUMENTATION AND SPECIFICATION FOR EXACT MEASUREMENTS.
- ALL WORKS TO BE CARRIED OUT AS PER LATEST REVISION OF ALL RELEVANT BUILDING CODES AND STANDARDS.

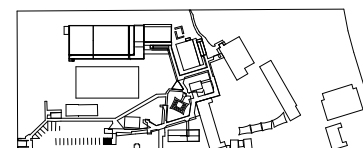
DOOR GRILLE SCHEDULE

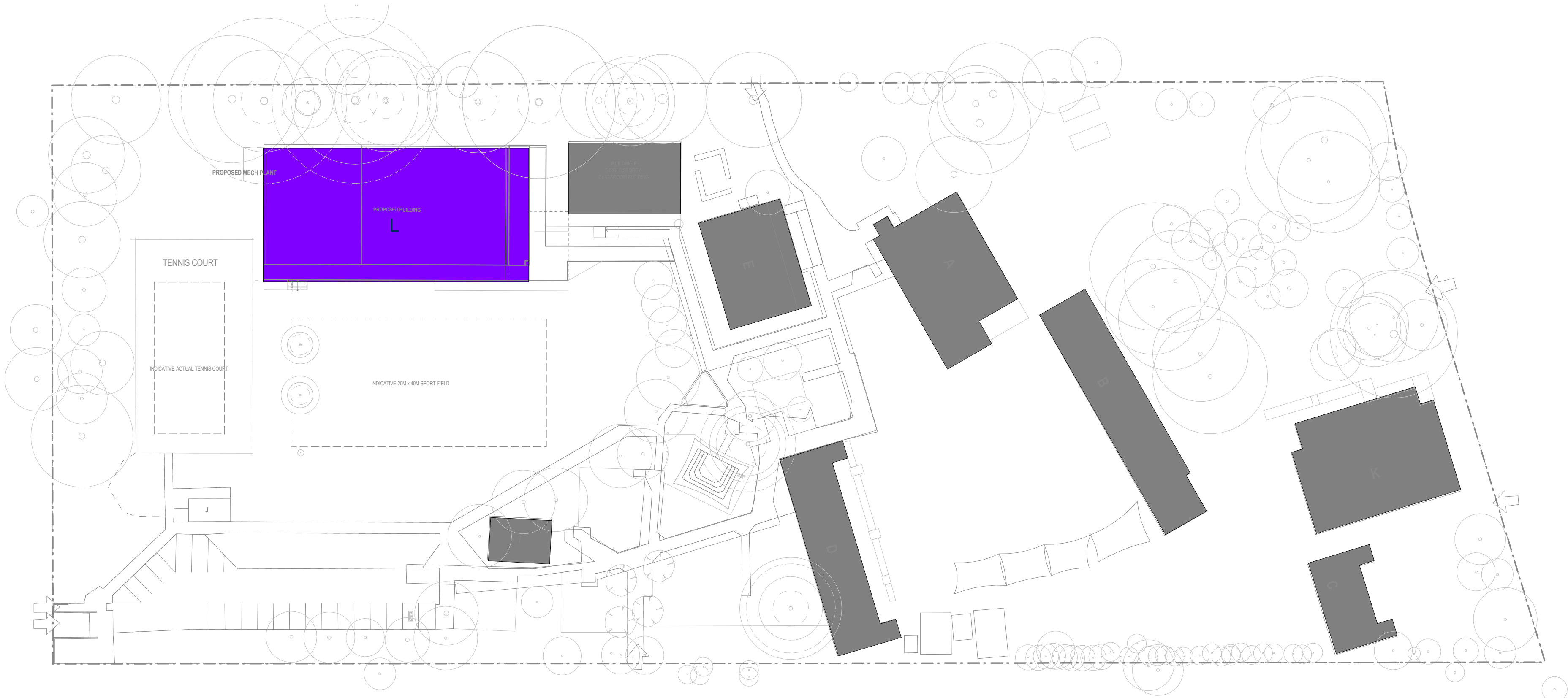
	DOOR GRILLE SIZE	AIR QUANTITY RANGE (l/s)
U	25mm DOOR UNDERCUT	0 - 50
A	600 x 150	51 - 90
B	600 x 300	91 - 150
C	600 x 450	151 - 210
D	600 x 600	211 - 275

NOTE: ALL DOOR GRILLES TO BE SUPPLIED BY MECHANICAL TRADE AND INSTALLED BY BUILDING TRADE.

FLEXIBLE DUCT SIZES

AIR QUANTITY RANGE (l/s)	DIAMETER
0 - 55	Ø150
56 - 90	Ø200
91 - 190	Ø250
191 - 280	Ø300
281 - 390	Ø350
391 - 500	Ø400



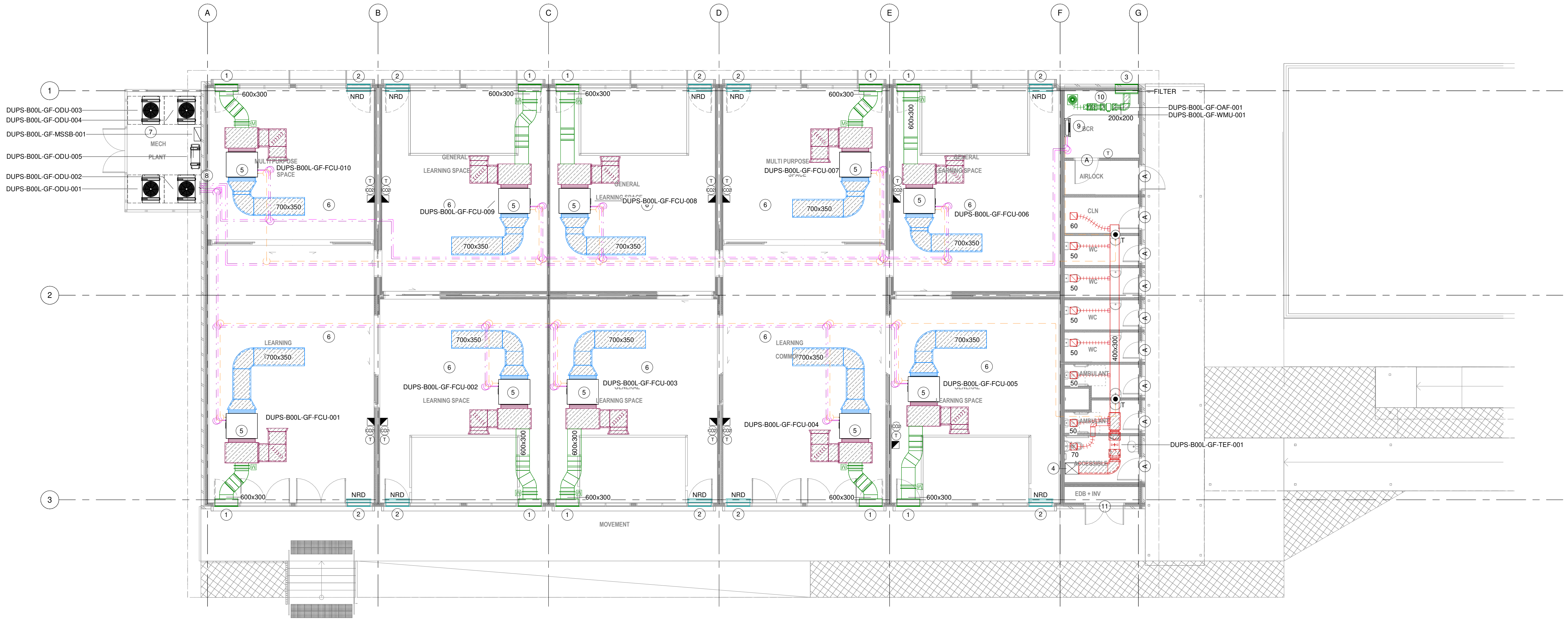


LEGEND

NO UPGRADES PROPOSED WITHIN THE BLOCK. BUILDING IS GENERALLY ALREADY PROVIDED WITH A/C OR A/C IS NOT REQUIRED FOR THE SPACES AS PER EFSG COOLER CLASSROOM PROGRAMS

NEW BLOCK TO BE PROVIDED WITH A/C AND VENTILATION AS REQUIRED. REFER TO ASSOCIATED DRAWINGS OF THE BLOCK FOR FURTHER DETAILS

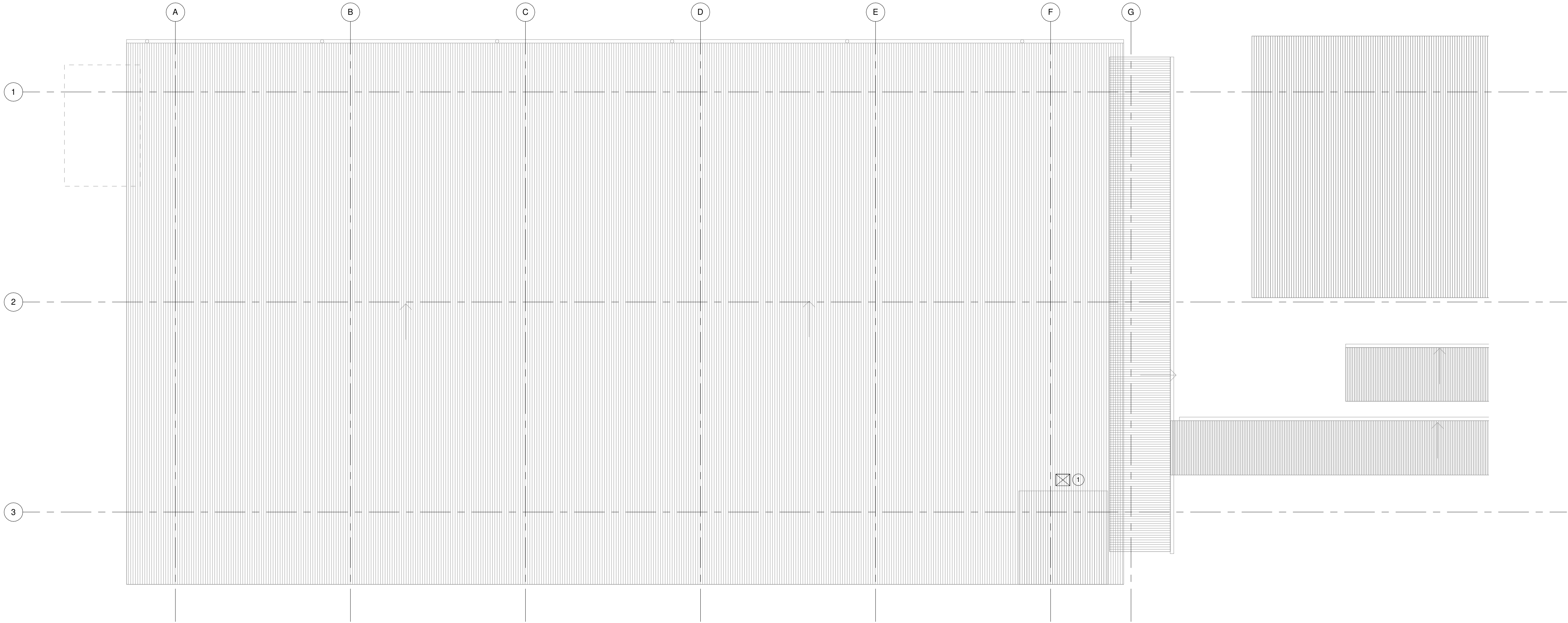
No.	DESCRIPTION	No.	DESCRIPTION
1	OUTSIDE AIR INTAKE LOUVRE. MIN 0.5 SQM OF AREA	7	CONDENSATE DISCHARGE OF OUTDOOR CONDENSERS TO BE COORDINATED WITH HYDRAULICS
2	RELIEF AIR LOUVRE. MIN 0.5 SQM OF AREA	8	REFRIGERANT PIPING FROM OUTDOOR CONDENSERS TO INDOOR UNITS. PENETRATION LOCATION FOR REFERENCE ONLY AND SUBJECT TO FURTHER DETAILED DESIGN
3	OUTSIDE AIR INTAKE AIR LOUVRE. MIN 0.25 SQM OF AREA	9	WALL-MOUNTED SPLIT UNIT TO SERVE THE NEW BCR. CONDENSATE TO BE CONNECTED TO THE NEAREST TUNDISH, OUTSIDE OF THE BCR
4	TOILET EXHAUST DISCHARGE DIRECTLY TO ROOF ABOVE THROUGH ROOF COWL. 500x600 PENETRATION	10	IN-LINE OUTSIDE AIR FAN TO SERVE THE NEW BCR
5	IN-CEILING DUCTED FAN COIL UNIT WITH MIN 900 MM LONG INTERNALLY INSULATED MIXING AIR PLENUM. ARCHITECT TO ALLOW FOR MIN 650 MM HIGH CLEAR CEILING SPACE. CONDENSATE SHALL BE CONNECTED TO THE NEAREST TUNDISH, IN COORDINATION WITH THE HYDRAULICS TRADE. ALLOW FOR CONDENSATE PUMP WHERE ADEQUATE FALL FOR DRAINAGE CANNOT BE ACHIEVED.	11	PROVIDE 600x300 INTUMESCENT GRILLE ON HIGH AND LOW LEVELS FOR CUPBOARD VENTILATION
6	DIFFUSER LOCATIONS, QUANTITY, AND SIZES FOR STANDARD HUBS ARE ASSUMED TO BE AS PER SINSW PATTERNBOOK AND ARE NOT SHOWN IN SCHEMATIC DESIGN.		



GENERAL NOTES:

- ALL MECHANICAL LOUVRE AND DOOR GRILLE OPENINGS SHALL BE VERMIN PROOF
- FIRE DAMPER SHALL BE PROVIDED THROUGH ALL FIRE RATED WALLS
- NEW MECHANICAL SERVICES SWITCHBOARD SHALL BE PROVIDED WITH A DIGITAL POWER METER FOR THE RECORDING AND ANALYSIS OF ENERGY CONSUMPTION ASSOCIATED WITH MECHANICAL SERVICES AS PER THE NCC AND EFGS REQUIREMENTS. THE POWER METER SHALL BE CONNECTED TO THE CAMPUS ENERGY MONITORING SYSTEM
- ENSURE THAT CEILING PLENUM IS NOT USED FOR RETURN AIR PURPOSES
- LOCATION OF FAN COIL UNITS ARE FOR REFERENCE ONLY AND SUBJECT TO FURTHER COORDINATION WITH ARCHITECTURAL RCP

No.	DESCRIPTION
1	TOILET EXHAUST DISCHARGE DIRECTLY TO ROOF ABOVE THROUGH ROOF COWL. 500x600 PENETRATION



GENERAL NOTES:

- ROOF COWL TO BE VERMIN PROOF