

PCLI - HENLEY
6 CROWN CLOSE, HENLEY, NSW 2111
MECHANICAL SERVICES

PREPARED BY
COVA
Stronger Together



DRAWING SCHEDULE		
DRAWING NUMBER	DISCIPLINE	DRAWING TITLE
5511.008-1-M001	MECHANICAL SERVICES	COVER PAGE & DRAWING SCHEDULE
5511.008-1-M002	MECHANICAL SERVICES	DRAWING LEGEND
5511.008-1-M003	MECHANICAL SERVICES	GENERAL NOTES
5511.008-1-M004	MECHANICAL SERVICES	SCOPE OF WORKS & SPECIFICATION
5511.008-1-M005	MECHANICAL SERVICES	EQUIPMENT SCHEDULES
5511.008-1-M200	MECHANICAL SERVICES	GROUND - LEVEL HVAC LAYOUT
5511.008-1-M201	MECHANICAL SERVICES	LEVEL 1 - HVAC LAYOUT

LEGEND OF SYMBOLS

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DUCTWORK RETICULATION	
SYMBOL	DESCRIPTION
	AIR FLOW DIRECTION
	DUCT SET UP / SET DOWN IN THE DIRECTION OF AIRFLOW
	RECTANGULAR DUCTWORK TO BE INSTALLED (WIDTH x HEIGHT). DIMENSIONS INDICATES AIRWAY DIMENSIONS.
	RECTANGULAR DUCTWORK WITH DESIGN HEIGHT MEASURING FROM REFERENCE LEVEL TO BOTTOM OF DUCT (BOD)
	ROUND DUCTWORK WITH DESIGN HEIGHT MEASURING FROM REFERENCE LEVEL TO CENTRELINE OF DUCT (CL)
INSULATION DENOTED AS FOLLOWS:-	
	BARE DUCTWORK
	ACOUSTICALLY LINED R0.8 25mm THK INTERNALLY INSULATED DUCTWORK
	ACOUSTICALLY LINED R15 50mm THK INTERNALLY INSULATED DUCTWORK
	ACOUSTICALLY LINED R2.0 75mm THK INTERNALLY INSULATED DUCTWORK
	ACOUSTICALLY LINED R3.0 100mm THK INTERNALLY INSULATED DUCTWORK
DUCTWORK INSULATION THICKNESS DENOTED ABOVE IS NOMINAL ONLY. ALTERNATIVE DUCT AND/OR INSULATION TYPES WILL BE CONSIDERED SUBJECT TO NCC SECTION J COMPLIANCE.	
	CIRCULAR DUCTWORK (EXPOSED DUCTWORK TO BE UNLINED)
	OVAL DUCTWORK (EXPOSED DUCTWORK TO BE UNLINED)
	RECTANGULAR/CIRCULAR DUCT RISER DUCT ROUTE TOWARDS FACE VIEWED
	RECTANGULAR/CIRCULAR DUCT DROPPER DUCT ROUTE AWAY FROM FACE VIEWED
	FLEXIBLE DUCTWORK
	FLEXIBLE DUCTWORK WITH SPIRAL DUCT INSERT
	FLEXIBLE CONNECTION
	SQUARE BEND WITH TURNING VANES ACOUSTIC TURNING VANES WHERE SPECIFIED
	DUCT TRANSITION (CIRCULAR TO RECTANGULAR)
	STREAM SPLITTER (ADJUSTABLE TYPE)
	MOTORISED DRIVEN DAMPER (LINK OR BLADE FACE VIEW) - DENOTED 'M' OR 'MVCD'
	OPPOSED BLADE DAMPER - MULTI-LEAF (LINK OR BLADE FACE VIEW) - DENOTED 'O.B.D.' OR 'OBD'
	VOLUME CONTROL DAMPER - MULTI-LEAF (LINK OR BLADE FACE VIEW) - DENOTED 'V.C.D.' OR 'VCD'
	NON-RETURN DAMPER - MULTI-LEAF (LINK OR BLADE FACE VIEW) - DENOTED 'N.R.D.' OR 'NRD'
	BUTTERFLY BALANCING DAMPER - SINGLE-LEAF (LINK OR BLADE FACE VIEW)
	ACCESS PANELS IN DUCT (DENOTED A/P) EITHER ON DUCT UNDERSIDE OR SIDE OF DUCT
	FIRE DAMPER IN DUCT
	SMOKE DAMPER IN DUCT
	BRANCH POP SPIGOT 90 DEG / 45 DEG / SPUN CONE RESPECTIVELY

DUCTWORK TYPES/COLOURS	
SYMBOL	DESCRIPTION
	SUPPLY AIR DUCTWORK
	RETURN AIR DUCTWORK
	OUTSIDE AIR DUCTWORK
	TEMPERED OUTSIDE AIR DUCTWORK
	GENERAL EXHAUST AIR DUCTWORK
	TOILET EXHAUST AIR DUCTWORK
	TRANSFER AIR DUCTWORK
	KITCHEN EXHAUST AIR DUCTWORK
	VEHICLE COMBUSTION / CARPARK EXHAUST AIR DUCTWORK

AIR DIFFUSION & EQUIPMENT	
SYMBOL	DESCRIPTION
	SQUARE/RECTANGULAR SUPPLY AIR CEILING DIFFUSER (LOUVRE FACE UNLESS DENOTED OTHERWISE) AIR DIFFUSION PATTERN AS FOLLOWS:-
	SQUARE/RECTANGULAR SUPPLY AIR CEILING DIFFUSER (CURVED BLADE FACE) AIR DIFFUSION PATTERN AS FOLLOWS:-
	CIRCULAR SUPPLY AIR CEILING DIFFUSER (LOUVRE FACE UNLESS DENOTED OTHERWISE) AIR DIFFUSION PATTERN AS FOLLOWS:-
	CIRCULAR SUPPLY AIR CEILING DIFFUSER (SWIRL TYPE) AIR DIFFUSION PATTERN AS FOLLOWS:-
	RETURN / RELIEF / EXHAUST AIR CEILING OUTLET (EGGRATE FACE UNLESS DENOTED OTHERWISE) (GRILLE CORE TO BE REMOVABLE)
	CIRCULAR RETURN / RELIEF / EXHAUST AIR CEILING OUTLET (LOUVRE FACE UNLESS DENOTED OTHERWISE)
	SIDEWALL SUPPLY AIR REGISTER: (LOUVRE FACE)
	SIDEWALL LOUVRE/GRILLE: (LOUVRE FACE)
	LINEAR BAR GRILLE/SLOT DIFFUSER
	LINEAR S/A OR R/A GRILLE (NON ACTIVE SECTION/S TO BE BLANKED OFF AND PAINTED INTERNALLY MATT BLACK UNLESS OTHERWISE NOTED)
	DOUBLE SIDED AIR BOOT
	SINGLE SIDED AIR BOOT
	CIRCULAR FACE CEILING MOUNTED EXHAUST AIR FAN
	SQUARE FACE CEILING MOUNTED EXHAUST AIR FAN
	CEILING SWEEP FAN
	DOOR UNDERCUT (REFER TO DOOR GRILLE SCHEDULE)
	DOOR RELIEF AIR GRILLE: "A" - DENOTES SIZE REFERENCE NETT FREE AREA APPROXIMATELY 70% OF GROSS (REFER TO DOOR GRILLE SCHEDULE)
	CARBON DIOXIDE SENSOR
	THERMOSTAT
	HUMIDISTAT
	ON/OFF SWITCH
	WALL MOUNTED REMOTE CONTROLLER
	PUSH BUTTON SWITCH
	AFTER HOURS A/C SWITCH
	NITROUS OXIDE SENSOR
	CARBON MONOXIDE SENSOR
	SMOKE DETECTOR WITHIN AIR DUCT
	TUNDISH BY HYDRAULIC SERVICES CONTRACTOR

	"A" - DENOTES AIR DIFFUSION DEVICE TYPE (REFER TO AIR DIFFUSION / GRILLE SCHEDULE)
	10-OFF AIR OUTLET LABEL
	NUMBER OFF AIR QUANTITY (L/s)
	SIZE / SLOTS / LENGTH TYPE
	AIR DIFFUSER / GRILLE LABEL
	NUMBER OFF AIR QUANTITY
	EQUIPMENT LABEL "ACU" - DENOTES EQUIPMENT LABEL "2" - DENOTES FLOOR LEVEL "01" - DENOTES EQUIPMENT NUMBER ON FLOOR
	EQUIPMENT LABEL WITH DUTY "300L/s" - AIRFLOW OF 300 LITRES/SECOND
	100L/s DENOTES AIR FLOW OF 100 LITRES/SECOND
	A/H DENOTES ACCESS HATCH
	MSB - MECHANICAL SERVICES SWITCHBOARD
	CEILING ACCESS PANEL (MIN 600x600 UNLESS NOTED OTHERWISE)

PIPEWORK RETICULATION	
SYMBOL	DESCRIPTION
	CHW PIPEWORK (FLOW)
	CHW PIPEWORK (RETURN)
	HHW PIPEWORK (FLOW)
	HHW PIPEWORK (RETURN)
	REFRIGERATION PIPEWORK
	CONDENSATE DRAIN
	TYPICAL REFRIG. PIPES ARRANGEMENT (ø29 & ø22 + 20mm ARMAFLEX INSULATION)
	PIPE DROPPER (BEND)
	PIPE DROPPER (TEE)
	PIPE RISER (TEE)
	VERTICAL PIPE RISER
	FLANGE CONNECTION TO EXISTING (UNION)
	BLANK FLANGE
	CAPPED END
	RISE & FALL IN THE DIRECTION OF WATER FLOW
	PIPE BREAK
	WATER FLOW DIRECTION
	PIPE SIZE (xx - DENOTES SIZE)
	SERVICES CONTINUATION "M01" - DENOTES REFERENCE DWG No.
	DIRECTION OF FLOW (ASCENDING)
	SERVICE TYPE / No.
	PIPE FLOOR PENETRATION LABEL
	PIPE SIZE
	DIRECTION OF FLOW (DECENDING)

GASES RETICULATION	
SYMBOL	DESCRIPTION
	GAS PIPEWORK (VISIBLE OR IN CEILING SPACE)
	PIPEWORK (UNDERGROUND OR UNDERFLOOR)
	GAS OUTLET OUTLET DESIGNATION AS FOLLOWS: NO = NITROUS OXIDE CO = CARBON DIOXIDE CN = CARBON DIOXIDE/NITROGEN MIX R = ARGON AC = ACETYLENE N = NITROGEN CA = COMPRESSED AIR H = HYDROGEN LP = LIQUEFIED PETROLEUM GAS OXY = OXYGEN OUTLET A = MEDICAL AIR OUTLET S = SUCTION OUTLET
	INLINE FILTER
	PRESSURE SWITCHES
	REGULATOR
	STOP VALVE
	SOLENOID VALVE
	CHANGE OVER ASSEMBLY
	MASTER SAFETY OFF SWITCH
	PRESSURE GAUGE WITH PET COCK

SCHEMATIC EQUIPMENT, VALVES & FITTINGS	
SYMBOL	DESCRIPTION
	STOP VALVE (GATE)
	BALL VALVE (SPHERICAL)
	GAS 90° ON-OFF BALL VALVE
	GLOBE VALVE
	CALIBRATED BALANCING VALVE (STAT)
	STRAINER
	BUTTERFLY VALVE
	SOLENOID 2-WAY CONTROL VALVE
	SOLENOID 3-WAY CONTROL VALVE
	MOTORISED 2-WAY CONTROL VALVE
	MOTORISED 3-WAY CONTROL VALVE
	GAS REGULATING VALVE
	STOP VALVE IN GARDEN/PATH VALVE BOX
	GAS BALL VALVE IN GARDEN/PATH VALVE BOX
	PRESSURE LIMITING VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE (INLINE)
	PRESSURE RELIEF VALVE (ANGLE)
	REFLUX VALVE
	NON RETURN VALVE / SPRING CHECK VALVE
	NON RETURN VALVE / SWING CHECK VALVE
	FLOAT VALVE
	AUTOMATIC AIR VENT WITH ISOLATING VALVE
	MANUAL AIR VENT WITH ISOLATING VALVE
	INLINE PUMP
	CENTRIFUGAL PUMP
	ANTI-VIBRATION CONNECTION
	FLEXIBLE JOINT CONNECTION
	PRESSURE SENSOR
	TEMPERATURE SENSOR
	VELOCITY SENSOR
	TEMPERATURE GAUGE
	PRESSURE GAUGE WITH PET COCK
	PET COCK
	UNIVERSAL TEST PLUG
	POCKET FOR TEMPERATURE / PRESSURE SENSOR
	PIPE ANCHOR FIXING POINT
	DIRT LEG WITH BALL COCK AND 25mm SCREWED HOSE CONNECTION
	ANNUBAR
	DRIFEX PLATE.
	FLOW SWITCH
	PRESSURE SWITCH
	TUNDISH TO WASTE
	TRAPPED TUNDISH TO WASTE
	HOSE COCK TAP
	ANGLE VALVE
	3-WAY VALVE

WORKS BY OTHERS	
SYMBOL	DESCRIPTION
	DENOTES ISOLATOR FOR MECHANICAL SERVICES EQUIPMENT BY ELECTRICAL SERVICES CONTRACTOR
	TUNDISH BY HYDRAULIC SERVICES CONTRACTOR

ABBREVIATIONS - PIPEWORK & DUCTWORK	
SYMBOL	DESCRIPTION
CA	COMPRESSED AIR
CD	CONDENSATE
CDWF/R	CONDENSER WATER FLOW / RETURN
CHWF/R	CHILLED WATER FLOW / RETURN
CW	COLD WATER
D	DRAIN
DHWF/R	DOMESTIC HOT WATER FLOW / RETURN
EXP	EXPANSION
HHWF/R	HEATING HOT WATER FLOW / RETURN
LPG	LIQUEFIED PETROLEUM GAS
MA	MEDICAL AIR
N	NITROGEN
NG	NATURAL GAS
NOX	NITROUS OXIDE
OXY	OXYGEN
S	SUCTION
ST	STEAM
TD	TUNDISH
V	VENT
VAC	VACUUM
F.W.	FLOOR WASTE
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
VRV	VARIABLE REFRIGERANT VOLUME
A/D	ACCESS DOOR
F/D	FIRE DAMPER
S/D	SMOKE DAMPER
N.R.D.	NON-RETURN DAMPER
O.B.D.	OPPOSED BLADE DAMPER
S.B.D.	SINGLE BLADE BUTTERFLY DAMPER
V.C.D.	VOLUME CONTROL DAMPER
MD	MOTORIZED DAMPER
A/R	AIR RELIEF
E/A	EXHAUST AIR
K/E	KITCHEN EXHAUST
O/A	OUTSIDE AIR
R/A	RETURN AIR
S/A	SUPPLY AIR
T/E	TOILET EXHAUST
CD	CEILING DIFFUSER
EG	EGGRATE GRILLE
SR	SUPPLY REGISTER
LD	LINEAR SLOT DIFFUSER
LV	LOUVRE
WL	WALL LOUVRE
DG	DOOR GRILLE
UC	UNDERCUT

ABBREVIATIONS - EQUIPMENT	
SYMBOL	DESCRIPTION
ACU	AIR CONDITIONING UNIT
ACC	AIR COOLED CONDENSER
AF	AIR FILTER
AFU	AUTOMATIC FILL UNIT
AHU	AIR HANDLING UNIT
AT	ATTENUATOR
B	BOILER
CC	COOLING COIL
CDWP	CONDENSER WATER PUMP
CEF	CEILING EXHAUST FAN
CH	CHILLER
CHWP	CHILLED WATER PUMP
CT	COOLING TOWER
CU	CONDENSING UNIT
CWL	COWL
DHWP	DOMESTIC HOT WATER PUMP
DHWU	DOMESTIC HOT WATER UNIT
DHU	DEHUMIDIFIER
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
ET	EXPANSION TANK
EV	EVAPORATOR
EVC	EVAPORATIVE COOLER
FC	FIRE COLLAR
FD	FIRE DAMPER
FSD	COMBINED FIRE-SMOKE DAMPER
FCU	FAN COIL UNIT
GF	GREASE FILTER
HC	HEATING COIL
HE	HEAT EXCHANGER
HRV	HEAT RECOVERY VENTILATOR
HTWP	HEATING WATER PUMP
HU	HUMIDIFIER
KEF	KITCHEN EXHAUST FAN
KEH	KITCHEN EXHAUST HOOD
MCP	MECHANICAL CONTROL PANEL
MSB	MECHANICAL SWITCHBOARD
OAF	OUTSIDE AIR FAN
PAC	PACKAGE AIR CONDITIONING UNIT
PET	PRESSURISED EXPANSION TANK
RAC	ROOM AIR CONDITIONER
RAD	RADIATOR
RAF	RETURN AIR FAN
SAF	SUPPLY AIR FAN
SEF	SMOKE EXHAUST FAN
SPF	STAIRWELL PRESSURISATION FAN
SD	SMOKE DAMPER
TEF	TOILET EXHAUST FAN
VAV	VARIABLE AIR VOLUME BOX
VIB	VALBE ISOLATION BOX

ABBREVIATIONS - GENERAL	
SYMBOL	DESCRIPTION
BP	BEAM PENETRATION
FFL	FINISHED FLOOR LEVEL
F/A	FROM ABOVE
F/B	FROM BELOW
H/L	HIGH LEVEL
L/L	LOW LEVEL
T/A	TO ABOVE
T/B	TO BELOW
UB	UNDER BEAM
CL	CENTRELINE

B	DETAILED DESIGN	SL	SL	GM	21.06.26
A	PRELIMINARY ISSUE	SL	SL	GM	27.03.26
REV.	DESCRIPTION	DRN	RE	PL	DATE

DRAWING CHECK		CO-ORDINATION CHECK	
SIGNATURE	DATE	SIGNATURE	DATE
DRAWN		STRUCT.	
DESIGNED		MECH.	
CHECKED		ELECT.	
		HYDRO/CIVIL	
		FIRE/ENV.	

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TITLE	MECHANICAL SERVICES
	DRAWING LEGEND

2000	0	2000	4000	6000	A1
STATUS	PRELIMINARY ISSUE				
	NOT TO BE USED FOR CONSTRUCTION				
SCALE @ A1	DIMENSIONS IN				MILLIMETRES
DRAWING No.	5511.008-1 - M002				REV. B

GENERAL NOTES

1.
- ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH:
 - BUILDING ACT.
 - RELEVANT ACTS.
 - INDUSTRIAL CODES.
 - CURRENT ISSUE OF RELEVANT AUSTRALIAN STANDARDS.
 - REQUIREMENTS OF RELEVANT STATUTORY AUTHORITIES.
 - OCCUPATIONAL HEALTH & SAFETY REQUIREMENTS.
 - OTHER LOCAL REGULATIONS RELEVANT TO SUCH INSTALLATIONS.
 - DUCTWORK & PIPEWORK MINIMUM INSULATION & SEALING 'R' VALUES TO BE NCC SECTION J COMPLIANT.
2.
- AUSTRALIAN STANDARDS AND CODES AND COMPANION STANDARDS AND CODES CURRENT AT THE TENDER DATE, SHALL APPLY TO THE CONTRACT WORKS, AND IN PARTICULAR AS 1668 AND B.C.A. BRITISH AND IEC STANDARDS AND CODES SHALL APPLY WHERE THERE ARE NO AUSTRALIAN STANDARDS AND CODES.
3.
- THE CONTRACTOR SHALL VISIT THE SITE AND BECOME CONVERSANT WITH THE EXISTING SITE, INCLUDING THE LOCATION OF THE EXISTING INFRASTRUCTURE AND SCOPE OF WORK REQUIRED UNDER THIS FITOUT. MAKE ALL THE REQUIRED ALLOWANCES TO COMPLETE THE WORKS.
4.
- ALL MATERIALS SHALL BE NEW UNLESS NOTED/SHOWN OTHERWISE. ALL MATERIALS, EQUIPMENT AND COMPONENTS TO BE OF FIRST QUALITY AND CURRENT APPROVED MANUFACTURE SHALL BE USED THROUGHOUT. UNIFORMITY OF MANUFACTURERS OF THE VARIOUS FITTINGS, EQUIPMENT AND COMPONENTS SHALL BE MAINTAINED.
5.
- THE CONTRACTOR SHALL OBTAIN NECESSARY FORMS AND GIVE NOTICE, IN THE FORMAT WITH SUPPORTING INFORMATION REQUIRED, TO AUTHORITIES HAVING JURISDICTION, OBTAIN REQUIRED APPROVALS AND PERMITS AND PAY ASSOCIATED FEES.
6.
- ALLOW TO VISIT THE SITE TO ASCERTAIN THE TRUE NATURE OF THE WORKS. NO EXTRA CLAIM WILL BE ALLOWED FOR THROUGH THE NEGLIGENCE OF THIS ADVISE.
7.
- PROVIDE AS-INSTALLED MANUALS AND DRAWINGS FOR THE COMPLETE WORKS TO THE SATISFACTION OF THE SUPERINTENDENT. IF EXISTING MANUALS AND DRAWINGS ARE AVAILABLE, THE NEW WORKS SHALL BE INCORPORATED WITHIN THESE EXISTING DOCUMENTS. PREPARE DRAWINGS IN ACAD FORMAT (AUTOCAD 2010) ON COMPACT DISK AND ISSUE TOGETHER WITH 3 SETS OF PRINTS PRIOR TO PRACTICAL COMPLETION BEING GRANTED.
8.
- ALL DUCTWORK SIZES SHOWN ARE CLEAR INTERNAL AIRWAY DIMENSIONS IN MILLIMETERS (mm).
9.
- ALL AIR QUANTITIES ARE IN LITRES PER SECOND (L/s).
10.
- ALL EQUIPMENT INSTALLED EXTERNAL TO BUILDING SHALL BE WEATHERPROOF AND SUITABLE FOR EXTERNAL USE.
11.
- FULLY COORDINATE THE PROPOSED MECHANICAL SERVICES WORKS WITH ALL OTHER SERVICES DISCIPLINES AND THE STRUCTURE, EXISTING AND PROPOSED, PRIOR TO COMMENCEMENT OF THE WORKS. SHOULD ANY DISCREPANCY ARISE, CONSULT WITH THE SUPERINTENDENT TO ASCERTAIN WHAT ACTION, IF ANY, IS REQUIRED.
12.
- ALL AIR INTAKES, LOUVRES, COWLS AND DISCHARGES AND THE LIKE EXTERNAL TO BUILDING SHALL BE WEATHERPROOF AND COMPLETE WITH VERMIN PROOF WIRE MESH.
13.
- PROVIDE BALANCING DAMPERS AT ALL GRILLES, OUTLETS, DIFFUSERS, e.t.c.WHERE DUCTWORK BRANCH POPS / CONNECTIONS ARE LOCATED OVER INACCESSIBLE PLASTERBOARD CEILINGS.
14.
- INCLUDE FOR THE PROVISION OF ALL PENETRATIONS.
15.
- RUN ALL DRAINS FROM INDOOR EQUIPMENT TO NEAREST TUNDISH WASTE POINT / STORMWATER DOWNPIPE. RUN ALL DRAINS FROM ROOF PLATFORM EQUIPMENT TO NEAREST ROOF GUTTER AND TERMINATE OVER. ALL DRAINS FROM DUCTED AIR CONDITIONING UNITS TO BE Ø25 AND COMBINED DRAINS TO BE Ø32 UNLESS NOTED OTHERWISE.
16.
- ACCESS PANELS SHOWN ARE GENERALLY THOSE REQUIRED FOR ACCESS TO MECHANICAL SERVICES. REFER TO ARCHITECTURAL DOCUMENTS FOR COMPLETE LAYOUT OF ALL ACCESS PANELS. ALL SERVICE POINTS AND ITEMS THAT MAY REQUIRE ACCESS FOR BALANCING OR MAINTENANCE PURPOSES SHALL BE LOCATED NEAR ACCESS PANELS.
17.
- ALL DUCTWORK, PIPEWORK, CABLE AND OTHER SERVICES PENETRATIONS THROUGH ROOF DECKS, EXTERNAL WALLS AND FLOORS SHALL BE ACOUSTICALLY SEALED.
18.
- PROVIDE ALL NECESSARY SEALS ASSOCIATED WITH THE NEW SERVICES INSTALLATION PENETRATIONS TO MAIN FIRE, SMOKE, THERMAL, ACOUSTIC, VERMIN AND MOISTURE SEALS.
19.
- SUPPLY AND INSTALL UPSTAND, UNDERFLASHING AND OVERFLASHING TO ALL ROOF PENETRATIONS.
20.
- ALL THERMOSTATS, SENSORS, CONTROLLERS AND SWITCHES TO BE LOCATED AT 1500mm AFFL. ALL LOCATIONS SHALL BE SHOWN ON SHOP DRAWINGS AND APPROVAL SHALL BE OBTAINED FOR THE PROPOSED LOCATION PRIOR TO INSTALLATION OF CABLING. ALLOWANCE SHALL BE INCLUDED TO ENABLE THESE DEVICES TO BE MOVED WITHIN A 6 METRE RADIUS OF LOCATION SHOWN ON THESE DOCUMENTS. ALL WIRING TO BE CONCEALED IN WALLS AND CEILING SPACE WHERE POSSIBLE. LOCATIONS TO BE CONFIRMED ON SITE WITH ARCHITECT PRIOR TO ANY WORKS BEING CARRIED OUT.
21.
- ALL S/A & R/A DIFFUSERS/GRILLES/LINEAR BOOTS SHALL BE PROVIDED WITH 25mm INTERNALLY LINED CUSHION HEADS OR PLENUM BOXES.
22.
- ALL CONDITIONED AIR FLEXIBLE DUCTWORK SHALL BE INSULATED AND EQUAL TO SAFE-T-FLEX PLUS. (INSULATION THICKNESS TO NCC SECTION J). EXHAUST DUCT TO BE UNINSULATED ACOUSTIC FLEXIBLE DUCT. REFER TO CONDITIONED AIR DUCTWORK INSULATION SCHEDULE.
23.
- ALL FLEXIBLE DUCTWORK SHALL BE LIMITED TO A MAXIMUM LENGTH OF 3 METRES. FOR LENGTHS EXCEEDING 3 METRES PROVIDE INSULATED CIRCULAR SHEETMETAL SPIRAL DUCTS) OF EQUIVALENT SIZE TO REDUCE FLEXIBLE DUCT LENGTH WHETHER SHOWN ON FLOOR PLANS OR NOT.
24.
- ALL DOOR GRILLES TO BE SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED BY BUILDER. REFER TO ARCHITECTS DRAWINGS FOR DETAILS.
25.
- INSTALL BALANCING DAMPERS IN ALL BRANCH POPS WHERE SHOWN ON FLOOR PLANS IN ROOF/CEILING SPACE. DUCTWORK FITTINGS TO BE LOCATED IN ACCESSIBLE AREAS WITHIN ROOF/CEILING SPACE OR FROM CEILING ACCESS PANELS SHOWN. WHERE DUCTWORK FITTINGS ARE LOCATED OVER INACCESSIBLE CEILINGS PROVIDE REMOTE DAMPER OPERATORS (CABLE DRIVEN) FOR AIR BALANCING.
26.
- INSTALL FLEXIBLE CONNECTIONS ON ALL INTAKES/DISCHARGES OFF AIR HANDLING EQUIPMENT WHERE SHOWN ON PLANS.
27.
- ALLOW FOR ALL DUCTWORK & PIPEWORK BENDS, OFFSETS AND TRANSITIONS TO CLEAR STRUCTURE, OTHER SERVICES AND OTHER OBSTACLES.
28.
- EQUIPMENT IN ROOF/CEILING SPACES TO BE SUPPORTED FROM STRUCTURE OVER UNLESS NOTED OTHERWISE. WHERE EQUIPMENT WEIGHTS ARE SHOWN ON PLAN(S) THEY ARE INDICATIVE ONLY. CONTRACTOR SHALL CONFIRM ALL WEIGHTS AND POSITIONS OF ALL EQUIPMENT ON SHOP DRAWING AND SUBMIT TO THE STRUCTURAL ENGINEER FOR APPROVAL.
29.
- ALL INTERNAL SURFACES OF AIR RELIEF TRANSFER DUCTS VISIBLE FROM OCCUPIED SPACE TO BE PAINTED MATT BLACK.
30.
- ALL NON-RETURN DAMPERS TO BE C/W FELT EDGES ON DAMPER BLADES.
31.
- ALL PIPEWORK TO BE INSTALLED IN ROOF/CEILING SPACE, BULKHEADS, WALL CAVITIES UNLESS NOTED OTHERWISE (EXCEPT PLANTROOMS). EXPOSED PIPEWORK BELOW BENCHES SHALL BE INSTALLED ON REAR PANEL OF CUPBOARD WHERE POSSIBLE.
32.
- PROVIDE DEFECT AND LIABILITY PERIOD IN ACCORDANCE WITH MAIN CONTRACT.
33.
- ALL DUCTWORK EXPOSED TO WEATHER TO BE HEAVY CROSS-BROKEN FOR WEATHERPROOFING AND SLOPED FOR WATER RUN OFF. ALL DUCT JOINTS TO BE SEALED.
34.
- OUTSIDE AIR DUCTWORK SERVING A CONDITIONED AIR SYSTEM SHALL BE 25mm EXTERNALLY LINED AS A MINIMUM UNLESS OTHERWISE INDICATED.
35.
- ALL REFRIGERATION PIPEWORK (SUCTION & LIQUID) LINES SHALL BE INSULATED USING CLOSED CELL RUBBER INSULATION SIMILAR TO "ARMAFLEX" OR APPROVED EQUIVALENT MANUFACTURE. INSULATION R-VALVES AS PER SECTION J OF NCC.
36.
- ALL EXPOSED DEFRIGERATION PIPEWORK EXTERNAL TO BUILDING TO BE ENCLOSED IN REMOVABLE WEATHERPROOF SHEETMETAL COVERS ON TOP & SIDES FROM WALL/ROOF PENETRATIONS. SHEETMETAL COVERS TO BE PAINTED TO ARCHITECT'S APPROVAL.
37.
- ALL DUCTWORK & PIPEWORK INSULATION AND SEALING TO COMPLY WITH NCC SECTION J REQUIREMENTS.
38.
- ALL WIRING & PIPEWORK TO BE CONCEALED IN WALLS.
39.
- ALL PLANT AND EQUIPMENT SHALL BE INSTALLED WITH APPROPRIATE CLEARANCE FOR MAINTENANCE AND AS PER MANUFACTURER'S RECOMMENDATIONS.
40.
- REFER TO STANDARD DETAILS FOR EQUIPMENT, DUCTWORK & PIPEWORK ARRANGEMENTS APPLICABLE TO PLANS.

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SCOPE OF WORKS

THE MECHANICAL SERVICES SHALL INCLUDE THE SUPPLY, INSTALLATION AND COMMISSIONING OF THE VARIOUS SYSTEMS AS DESCRIBED BELOW AND DETAILED IN THIS DOCUMENT SET. WORK SHALL INCLUDE ALL NECESSARY BUILDING WORKS, ELECTRICAL AND CONTROL COMPONENTS AND ALL OTHER ITEMS REQUIRED FOR THE CORRECT FUNCTIONING OF THE MECHANICAL SERVICES SYSTEMS.

- SUPPLY & INSTALLATION OF DUCTED TYPE SPLIT A/C SYSTEMS C/W REFRIGERATION PIPING, CONDENSATE DRAINAGE, CONTROLS, WALL CONTROLLERS & THE LIKE FOR FULL OPERATION OF THE SYSTEM/S. INCLUDES ALL DUCTWORK, GRILLES, INSULATION, DAMPERS, ETC. INCLUDES ALL REQUIRED MOUNTING FRAMES FOR OUTDOOR CONDENSER UNITS.
A. FULL REFRIGERANT ROUTE NOT SPECIFIED. DESIGN BY CONTRACTOR.
- SUPPLY & INSTALLATION OF BULKHEAD TYPE SPLIT A/C SYSTEMS C/W REFRIGERATION PIPING, CONDENSATE DRAINAGE, CONTROLS, WALL CONTROLLERS & THE LIKE FOR FULL OPERATION OF THE SYSTEM/S. INCLUDES ALL DUCTWORK, GRILLES, INSULATION, DAMPERS, ETC. INCLUDES ALL REQUIRED MOUNTING FRAMES FOR OUTDOOR CONDENSER UNITS.
A. FULL REFRIGERANT ROUTE NOT SPECIFIED. DESIGN BY CONTRACTOR.
- SUPPLY & INSTALLATION OF HEAT RECOVERY VENTILATORS COMPLETE WITH C/W CONDENSATE DRAINAGE TO TUNDISH (TUNDISH PROVIDED BY HYDRAULIC CONTRACTOR). INCLUDES ALL DUCTWORK, GRILLES, INSULATION, DAMPERS, CONTROLS & THE LIKE FOR FULL OPERATION OF THE SYSTEM/S. INCLUDES ALL REQUIRED MOUNTING FRAMES.
A. FRESH AIR INTAKE FROM FACADE
B. EXHAUST DISCHARGED TO FACADE
- SUPPLY & INSTALLATION OF EXHAUST AIR SYSTEMS C/W INLINE FANS, ROOF MOUNTED COWLS OR WEATHER PROOF LOUVRES, DUCTWORK, GRILLES, INSULATION, CONTROLS, NON-RETURN DAMPERS & THE LIKE FOR FULL OPERATION OF THE SYSTEMS.
- CONDENSATE ROUTES & FINAL TUNDISH LOCATIONS TO BE DETERMINED BY CONTRACTOR. PROVIDE CONDENSATE DRAINAGE PUMP WHERE REQUIRED.
- PROVISION OF ACOUSTIC AND VIBRATION ISOLATION AS REQUIRED.
- PROVISION OF OUTDOOR CONDENSER UNITS ON PROPRIETY MOUNTING. MOUNTING MATERIALS TO BE CORROSION PROOF OR ANTI-CORROSION TREATED.
- APPROPRIATE ACCESS FOR INSTALLATION, COMMISSIONING, AND MAINTENANCE OF ALL SYSTEMS, INCLUDING ACCESS PANELS WHERE REQUIRED.
- ALL ELECTRIC WORKS REQUIRED FOR MECHANICAL EQUIPMENT WITHIN THIS DRAWING PACKAGE.
- SEISMIC RESTRAINING OF MECHANICAL SYSTEMS TO AS1170.4. INCLUDES CALCULATION OF FORCES BASED ON FINAL WEIGHTS & MOUNTING HEIGHTS, AND INSTALLATION OF APPROPRIATE RESTRAINING SYSTEMS. IT IS RECOMMENDED CONTRACTOR ENGAGES SEISMIC CONSULTANT/SUPPLIER TO PROVIDE INITIAL REVIEW AND REVIEW OF WORKSHOP DRAWINGS TO ENSURE COMPLAINT INSTALLATION. EUROFAST IS A RECOMMENDED CONSULTANT/SUPPLIER.
- WORKSHOP DRAWINGS, FUNCTIONAL DESCRIPTION AND AS-INSTALLED DRAWINGS TO BE SUBMITTED FOR APPROVAL
- CLIENT HANDOVER INCLUDING MINIMUM 3 HOUR HANDOVER AND TRAINING SESSION.
- ANY OTHER MISCELLANEOUS AND OBVIOUS WORK NOT SPECIFICALLY MENTIONED BUT REQUIRED FOR THE CORRECT INSTALLATION AND OPERATION OF THE SYSTEMS.

GENERAL

- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL & OTHER CONSULTANTS DRAWINGS & SPECIFICATIONS & OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.
- THE TECHNICAL REQUIREMENTS OF THE CURRENT 'NATSPEC' AND 'NCC' SHALL BE APPLIED TO THE WORKS DETAILED IN THESE DRAWINGS. WHERE A DISCREPANCY EXISTS BETWEEN THESE REQUIREMENTS AND THESE DRAWINGS, CONSULT THE ENGINEER FOR CLARIFICATION. THIS INCLUDES BOTH MATERIALS AND METHODOLOGIES.
- ALL DIMENSIONS SHOWN ARE TO BE VERIFIED ON SITE. ENGINEERING DRAWINGS MUST NOT BE SCALED, ANY DISCREPANCY FOUND SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- PROVISION OF COST SAVING ALTERNATIVES IS ENCOURAGED, BUT MUST BE SUBMITTED ALONG WITH A COMPLIANT TENDER AS PER THE SYSTEMS AND EQUIPMENT SCHEDULES WITHIN THESE DOCUMENTS. WHERE ALTERNATIVES ARE OFFERED THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE ALTERNATIVE SYSTEM MEETS THE FUNCTIONAL REQUIREMENTS OF THE ORIGINAL DESIGN INTENT.
- ALL WORKS, EQUIPMENT AND STANDARDS ARE TO COMPLY WITH NATSPEC DOCUMENTATION REQUIREMENTS ISSUED WITH THIS PACKAGE.

SPECIFICATIONS OF NOTE

- ALL EXHAUST SYSTEMS MUST HAVE A NON-RETURN DAMPER BEFORE DISCHARGE.
- ACCESS PANELS & UNDERCUTS ARE RESPONSIBILITY OF MECHANICAL CONTRACTOR BUT INSTALLED BY BUILDER. SUPPLY ACCESS PANELS TO BUILDER.

DESIGN CRITERIA & PERFORMANCE GUARANTEE

EQUIPMENT PERFORMANCE SCHEDULES HAVE BEEN SELECTED TO INTERFACE WITH OTHER COMPONENTS OF THE SYSTEMS. WHERE THE PERFORMANCE OF EQUIPMENT OFFERED DIFFERS FROM THAT SCHEDULED THE CONTRACTOR SHALL ACCEPT RESPONSIBILITY IN ENSURING THE SYSTEM DESIGN REQUIREMENTS ARE MET AND THE SYSTEMS INSTALLED ARE CAPABLE OF MEETING THE PERFORMANCES SPECIFIED AND COMPLY WITH ALL AUTHORITY REQUIREMENTS.

DESIGN CRITERIA:			
	SUMMER	35.4°C DB	25.3°C WB
	WINTER	5.8°C DB	
	INDOOR	24°C DB (SUMMER)	21°C DB (WINTER)

THE CONTRACTOR SHALL CHECK THE DESIGN PRIOR TO PREPARING SHOP DRAWINGS TO ENABLE THEM TO PROVIDE THIS GUARANTEE. ANY INCONSISTENCIES OR INADEQUACIES IN THE SYSTEMS AS DOCUMENTED SHALL BE DRAWN TO THE ATTENTION OF THE SUPERINTENDENT AT THIS TIME. VARIATION CLAIMS LATER IN THE CONTRACT (THAT INCLUDE ADOPTIVE WORKS) WHICH COULD HAVE BEEN RESOLVED AT THE SHOP DRAWING STAGE WILL NOT BE ALLOWED.

DRAWINGS, MANUALS, TRAINING & APPROVALS

- 1PRIOR TO COMMENCEMENT OF WORK, ALLOW TO CONDUCT A 1 HOUR MEETING WITH ENGINEER TO VERIFY UNDERSTANDING OF DESIGN AND CONTROL INTENT OF ALL SYSTEMS.
2. PROVIDE WORKSHOP DRAWINGS PRIOR TO THE COMMENCEMENT OF WORKS ON SITE FOR REVIEW AND APPROVAL BY ENGINEER. DRAWINGS ARE TO INCLUDE DETAILS OF EQUIPMENT SCHEDULES, ARRANGEMENT OF EQUIPMENT AND MOUNTING, ALL REQUIRED ACCESS PANEL LOCATIONS, PIPEWORK (INCL. PRESSURE CALCULATIONS), DUCTWORK, AS16177 REFRIGERANT VOLUME (CALCULATIONS, POWER SUPPLY (INCL. MAX DEMAND CALCULATIONS) AND CONTROLS INCLUDING DETAILED FUNCTIONAL DESCRIPTIONS.
3. ON COMPLETION OF WORKS PROVIDE AS-INSTALLED DRAWINGS DETAILING ALL INFORMATION AS DETAILED IN WORKSHOP DRAWINGS, IN ADDITION TO ALL ALTERATIONS MADE ON SITE, INCLUDING ALL CHANGES TO SCOPE MADE BY ENGINEERS DIRECTIONS, SITE INSTRUCTION ETC.
4. ALLOW TO PROVIDE 2 HOUR TRAINING IN PURPOSE AND OPERATION OF ALL MECHANICAL SYSTEMS. TRAINING SHALL BE CARRIED OUT BY COMPETENT TRAINING PERSONNEL KNOWLEDGEABLE ABOUT THE INSTALLATIONS, AND CONDUCTED IN CONJUNCTION WITH REFERENCE TO O&M MANUALS.
5. PROVIDE 3 COPIES OF AS-INSTALLED DRAWINGS AND OPERATIONS & MAINTENANCE MANUALS. MANUALS TO INCLUDE EXPLANATION OF THE BUILDING AND SYSTEM OPERATIONS OUTLINING THE DESIGN INTENT, SPECIFICATIONS, SCHEDULES, WARRANTY, COMMISSIONING AND BUILDING TUNING DATA. A USB DRIVE WITH THE FULL MANUAL SHALL BE PROVIDED WITH EACH MANUAL.

TYPICAL O&M MANUAL PRESENTATION/REQUIREMENTS ARE AS FOLLOWS:

- MANUAL TO BE CLEARLY IDENTIFIED ON COVER AND SPINE AS TO DISCIPLINE (MECHANICAL/ELECTRICAL/HYDRAULIC ETC.) & PROJECT e.g. OPERATION & MAINTENANCE MANUAL – MECHANICAL SERVICES
COVA OFFICE – 3/50 BERRY ST, NORTH SYDNEY, NSW, 2060.
- COVER SHEET WITH THE FOLLOWING INFORMATION:
 - PROJECT ADDRESS
 - CLIENT / BUILDING OWNER NAME
 - ARCHITECT & ENGINEER NAME, ADDRESS & CONTACT DETAILS
 - BUILDERS NAME, ADDRESS & CONTACT DETAILS;
 - CONTRACTORS NAME, ADDRESS & CONTACT DETAILS.
- INDEX/TABLE OF CONTENTS PAGE.
- GENERAL DESCRIPTION OF WORKS AND LIST OF EMERGENCY CONTACT #'s
 - MECHANICAL & CONTROLS CONTRACTOR
 - GAS EMERGENCY (TASGAS)(IF APPLICABLE);
- DESCRIPTION OF THE SYSTEM (IN SIMPLE TERMS).
- OPERATION OF THE SYSTEM (INCL. CONTROLS FUNCTIONAL DESCRIPTION).
- COMMISSIONING DATA/EQUIPMENT SCHEDULES & WARRANTIES.
- PERIODIC MAINTENANCE REQUIREMENTS.
- AS INSTALLED DRAWINGS (HAND MARKUPS WILL NOT BE ACCEPTED).
- A PDF COPY OF THE FULL MANUAL (AND AUTOCAD AND/OR REVIT FILES) ON USB INCLUDED WITH MANUAL (IN SLEEVE FIXED TO INSIDE COVER OR RING BINDER).
- ALL SECTIONS SHOULD ALSO BE PROVIDED WITH DIVIDERS FOR CLEAR SEPARATION.

ELECTRICAL SUPPLY

- ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF AS3000 'WIRING RULES' THE SUPPLY AUTHORITY RULES AND ALL OTHER RELEVANT STATUTORY REGULATIONS.
- MECHANICAL CONTRACTOR TO PROVIDE MAX. DEMAND REQUIREMENTS TO ELECTRICAL CONTRACTOR AND ENGINEER FOR COORDINATION AND CONFIRMATION OF CABLE/BREAKER SIZES PRIOR TO COMMENCEMENT OF MAIN SWITCHBOARD FABRICATION.
- ELECTRICAL CONTRACTOR WILL PROVIDE SUBMAIN TO MECHANICAL SWITCHBOARD. PROVISION OF MECHANICAL SWITCHBOARD AND TERMINATION OF SUBMAIN BY MECHANICAL CONTRACTOR.
- ALL OTHER ELECTRICAL WORKS ASSOCIATED WITH MECHANICAL EQUIPMENT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

SAMPLES & COLOURS

- CONTRACTOR TO CONFIRM COLOURS AND PROVIDE SAMPLES OF THE FOLLOWING ITEMS TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO ORDERING FULL QUANTITIES:
 - ALL AIR DIFFUSION INCL. EXPOSED DUCTWORK, SUPPLY/RETURN GRILLES, DOOR GRILLES, WEATHER LOUVRES, ROOF COWLS ETC.
 - USER INTERFACE CONTROLS INCL. WALL CONTROLLERS / THERMOSTATS ETC.
 - ANTI-VIBRATION MOUNTS.

BUILDERS WORKS & MOUNTING

- MECHANICAL CONTRACTOR TO SUPPLY CEILING ACCESS PANELS. BUILDER TO INSTALL CEILING ACCESS PANELS TO LOCATIONS REQUIRED. MECH CONTRACTOR TO LIAISE WITH BUILDER & ARCHITECT REGARDING FINAL LOCATIONS.
- BUILDER TO PROVIDE DOOR UNDERCUTS WHERE SPECIFIED. MECH CONTRACTOR TO LIAISE WITH BUILDER.
- EQUIPMENT THAT IS ROOF MOUNTED SHALL BE INSTALLED ON SUITABLE FRAME C/W PROPRIETARY RUBBER OR SPRING ANTI-VIBRATION MOUNTS. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVISION OF ALL EQUIPMENT MOUNTING FRAMES & SAFE ACCESS INC. LADDERS, HANDRAILS, PLATFORMS, ETC.
- FAN COIL, DUCTED A/C AND FAN UNITS SHALL BE INSTALLED ON ANTI-VIBRATION MOUNTS HUNG FROM LOCAL STRUCTURE.

ACOUSTIC TREATMENT GENERAL

- ALL RETURN AIR PLENUM BOXES, SUPPLY AIR PLENUM BOXES, SPILL AIR FLEXIBLE DUCT AND LOUVER PLENUM BOXES TO BE INTERNALLY ACOUSTICALLY LINED.
- ALL FCU, HRV & FANS ETC. ARE TO BE VIBRATION ISOLATED AS PER INDUSTRY BEST PRACTICES.
- ALL THERMOSTAT AND CONTROL CABLEING RUN IN WALL CAVITIES WITH ACOUSTIC DESIGN MUST HAVE PENETRATIONS ACOUSTICALLY SEALED.
- ALL ROOF MOUNTED MECHANICAL EQUIPMENT TO BE C/W RUBBER-IN-SHEAR ANTI VIBRATION MOUNTS.
- DUCTWORK ATTACHED TO MECHANICAL EQUIPMENT TO BE ACOUSTIC INTERNALLY LINED FOR MINIMUM 5m UPSTREAM AND DOWNSTREAM OF EQUIPMENT. LENGTH MAY BE REDUCED BY 1m PER 90° BEND. LINING IN ADDITION TO OTHER INSULATION REQUIREMENTS.
- FAN & A/C UNIT CONNECTIONS TO DUCTWORK MUST BE PROVIDED WITH FLEXIBLE CONNECTIONS TO PREVENT VIBRATION AND NOISE TRANSMISSION TO DUCTWORK. IN ACOUSTIC-SENSITIVE INSTALLATIONS THE CONNECTION MUST BE WRAPPED WITH PURPOSE-BUILT SOUND DEADENING MATERIAL.
- ANY ITEMS THAT THE CONTRACTOR BELIEVES MAY BE DETRIMENTAL TO ACOUSTIC PERFORMANCE ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER AT TIME OF TENDER FOR CLARIFICATION AND/OR RESOLUTION.

REFRIGERANT PIPEWORK & INSULATION

- PIPEWORK SHALL GENERALLY BE COPPER TUBE TO AS1432 & AS1571 TYPE B SIZED TO EQUIPMENT MANUFACTURER SPECIFICATION, AND INSULATED AS SCHEDULED (IN ACCORDANCE WITH NCC & NATSPEC). ALTERNATIVE PIPEWORK MATERIALS MAY BE ACCEPTED BUT MUST BE SPECIFICALLY APPROVED BY THE ENGINEER.
- WHERE INSULATION IS EXPOSED TO WEATHER IT SHALL BE PAINTED WITH U.V. STABLE PAINT AS RECOMMENDED BY THE MANUFACTURER AND PROVIDED WITH SUITABLE MECHANICAL PROTECTION (WHERE POSSIBLE).
- ALL PIPEWORK PENETRATING ROOF SHALL BE FITTED WITH 'DEKITE' FLASHING SLEEVES & SEALED WATERTIGHT.
- PIPEWORK PENETRATING EXTERNAL WALLS SHALL BE SEALED AND FLASHED APPROVAL.

CONDENSATE

- CONDENSATE DRAINS FROM INDOOR AC UNITS AND HRV'S SHALL RUN TO TUNDISHES. ALLOW FOR SUPPLY AND INSTALL OF TUNDISHES AND LIAISE WITH HYDRAULIC CONTRACTOR FOR COORDINATION OF FINAL LOCATIONS.
- CONDENSATE DRAIN PIPE TO BE PVC SIZED TO MANUFACTURERS SPECIFICATIONS.
- ALLOW TO PROVIDE CONDENSATE PUMPS TO ALL A/C UNITS AND HRV'S, HOWEVER PREFERENCE IS FOR GRAVITY DRAINAGE WHERE POSSIBLE. CONDENSATE PUMPS MUST BE OF AC SYSTEM OEM SUPPLY AND INTERLOCKED TO AC CONTROL SYSTEM TO PREVENT OPERATION IN FAULT.
- CONDENSATE FROM OUTDOOR CONDENSER UNITS TO BE COLLECTED VIA SUITABLE TRAY AND CONNECTED TO NEAREST WASTE WATER COLLECTION POINT AND/OR AWAY FROM TRAFFICABLE AREA.
- THE FIRST 1m OF CONDENSATE PIPING IS TO BE EXTERNALLY INSULATED.

HEAT RECOVERY VENTILATOR SYSTEMS

- HRV UNITS SHALL BE OF THE TYPES SHOWN ON THE DRAWINGS AND SCHEDULES C/W FILTERS.
- HRV UNITS SERVING WATERCLOSETS TO BE SENSIBLE-ONLY TYPE HEAT EXCHANGE MEDIA.
- HRV UNITS SHALL BE PROVIDED WITH INSULATED CONDENSATE DRIP TRAYS WITH CONDENSATE PUMP WHEN NECESSARY.
- HRV UNITS TO COME WITH EC FAN CAPABLE OF VARIABLE SPEEDS CONTROLLED BY BMS AND DEMAND CONTROLLED VENTILATION.
- SUPPORT ALL HRV UNITS WITH ANTI-VIBRATION MOUNTS TO SUIT THE APPLICATION.
- HRV UNIT CONNECTIONS TO DUCTWORK MUST BE PROVIDED WITH FLEXIBLE CONNECTIONS TO PREVENT VIBRATION AND NOISE TRANSMISSION TO DUCTWORK. IN ACOUSTIC-SENSITIVE INSTALLATIONS THE CONNECTIONS MUST BE ACOUSTICALLY INSULATED.
- HRV UNITS TO BE WRAPPED WITH WAVEBAR OR SIMILAR UNLESS LOCATED IN PLANT ROOM.

AIR CONDITIONING SYSTEMS

- PROVIDE AIR COOLED SPLIT PACKAGE AIR CONDITIONING SYSTEMS AS SCHEDULED IN THE DRAWING PACKAGE.
- THE COMPRESSORS SHALL BE EQUIPPED WITH AN INVERTER CONTROLLER, CAPABLE OF CHANGING THE COMPRESSOR'S ROTATING SPEED TO ACCOMMODATE VARIATIONS IN COOLING AND HEATING LOAD.
- THE UNIT SHALL BE CAPABLE OF OPERATING CONTINUOUSLY AT AN AMBIENT TEMPERATURE OF -5°C IN COOLING MODE AND -15°C IN HEATING MODE. (OPERATIVE RANGE: -20°C)
- INDOOR AND OUTDOOR UNITS SHALL BE ASSEMBLED, TESTED & CHARGED WITH REFRIGERANT AT THE FACTORY.
- OUTDOOR UNITS SHALL BE MODULAR IN DESIGN AND SHOULD BE SUITABLE FOR SIDE BY SIDE INSTALLATION.
- THE REFRIGERANT CIRCUIT SHALL INCLUDE LIQUID AND GAS SHUT OFF VALVES AND SOLENOID VALVES. ALL NECESSARY SAFETY DEVICES SHALL BE PROVIDED TO ENSURE THE SAFE OPERATION OF THE SYSTEM.
- INDOOR UNITS SHALL BE OF THE TYPES SHOWN ON THE DRAWINGS AND SCHEDULES. COMPLETE WITH INBUILT CONDENSATE PUMPS AS REQUIRED.
- INDOOR UNITS SHALL BE PROVIDED WITH INSULATED CONDENSATE DRIP TRAYS WHEN NOT MOUNTED OVER WET AREAS, DRAINED TO WASTE.
- SUPPORT ALL INDOOR UNITS WITH ANTI-VIBRATION MOUNTS TO SUIT THE APPLICATION.
- INDOOR UNIT CONNECTIONS TO DUCTWORK MUST BE PROVIDED WITH FLEXIBLE CONNECTIONS TO PREVENT VIBRATION AND NOISE TRANSMISSION TO DUCTWORK. IN ACOUSTIC-SENSITIVE INSTALLATIONS THE CONNECTION MUST BE WRAPPED WITH PURPOSE-BUILT SOUND DEADENING MATERIAL.
- INDOOR UNITS TO UTILISE RETURN AIR MIXING PLENUM BOXES C/W FILTERS, BALANCING DAMPERS INDOOR RETURN AIR MIXING PLENUM BOXES TO BE ACOUSTICALLY INSULATED
- WRAP AC DUCTED UNITS WITH WAVEBAR OR SIMILAR.

DUCTWORK

- DUCTWORK SHALL GENERALLY BE GALVANISED STEEL, CROSS BROKEN AS REQUIRED AND CONSTRUCTED IN ACCORDANCE WITH AS4254 UNLESS OTHERWISE SPECIFIED.
- DUCTWORK INSULATION MUST BE IN ACCORDANCE WITH INSULATION SCHEDULE AND THE CURRENT NCC.
- DUCTWORK EXPOSED TO VIEW MUST BE SLIP-JOINTED (NO EXPOSED FLANGES) AND PAINTED TO COLOUR APPROVED BY THE ARCHITECT.
- FLEXIBLE DUCTWORK MUST NO LONGER THAN 5m, MAY NOT BE CRUSHED OR KINKED, MUST RUN AS STRAIGHT AS POSSIBLE AND SUPPORTED AT 15m INTERVALS BY DEDICATED SADLE/SLING SUPPORTS.
- ALTERNATIVE DUCT MATERIALS MAY BE ACCEPTED BUT MUST BE SPECIFICALLY APPROVED BY THE ENGINEER.
- ALL DUCTWORK PENETRATING ROOF SHALL BE FITTED WITH FLASHINGS & WEATHER SEALED & IS RESPONSIBILITY OF MECH CONTRACTOR.
- FAN AND A/C UNIT CONNECTIONS TO DUCTWORK MUST BE PROVIDED WITH FLEXIBLE CONNECTIONS TO PREVENT VIBRATION AND NOISE TRANSMISSION TO DUCTWORK.
- PENETRATIONS THROUGH WALLS MUST BE SEALED TO RELEVANT ACOUSTIC AND FIRE RATING REQUIREMENTS.
- ALL EXTERNAL DISCHARGE AND INTAKE DUCT TO BE PROVIDED WITH VERMIN PROOF MESH.

DIFFUSERS, GRILLES & LOUVRES

- PROVIDE AIR GRILLES, REGISTERS, DIFFUSERS, LOUVRES AS SPECIFIED IN THE SCHEDULES OF THIS PACKAGE.
- WHERE PROVIDING ALTERNATIVE SELECTIONS, SELECTION TO BE FROM A SPECIALIST SUPPLIER WITH CERTIFIED PERFORMANCE DATA AND PUBLISHED SELECTION TABLES, STATING GUARANTEED AIR FLOWS, THROWS, VELOCITIES, PRESSURE DROPS AND NOISE LEVELS AVAILABLE. ALTERNATIVE TO BE APPROVED BY ENGINEER.
- DIFFUSERS SHALL BE C/W ACOUSTICALLY INSULATED PLENUM BOX.
- SUPPORT GRILLES, REGISTERS, DIFFUSERS AND LOUVRES FROM DUCTWORK, PLENUMS OR CUSHION BOXES. SUPPORT PLENUMS AND CUSHION HEAD BOXES FROM THE STRUCTURE OR SUBSTANTIAL CEILING SYSTEM COMPONENTS WITHOUT UNDULY STRESSING OR DISTORTING ADJACENT SURFACES. USE GASKETS BETWEEN FLANGES AND WALLS OR CEILING FACES TO PREVENT LEAKAGE AND MARKING OF ADJACENT SURFACES.
- POSITION AS GENERALLY SHOWN ON THE DRAWINGS. COORDINATE FINAL POSITIONS WITH OTHER SERVICES, BUILDING ELEMENTS AND TO THE APPROVAL OF THE SUPERINTENDENT.
- PROVIDE AIR VOLUME CONTROL DEVICES AND AIR PATTERN ADJUSTMENT DEVICES FOR ALL DIFFUSERS AND GRILLES.
- PROVIDE HIGH QUALITY FACTORY APPLIED POWDER COATING OR ANODISED FINISHES IN COLOURS SCHEDULED AND TO BE CONFIRMED WITH THE SUPERINTENDENT.
- PAINT BLACK ALL BLADES, SUPPORTS, VOLUME CONTROL OR PATTERN ADJUSTMENT DEVICES AND FITTINGS VISIBLE THROUGH THE FACE OF THE ITEM.
- EXTERNAL LOUVRES TO BE PROVIDED WITH VERMIN PROOF MESH.
- CONFIRM ALL GRILLE COLOURS WITH ARCHITECT PRIOR TO ORDER.

COMMISSIONING

- THE CONTRACTOR WILL BE RESPONSIBLE FOR COMPREHENSIVE PRE-COMMISSIONING, COMMISSIONING AND QUALITY MONITORING IN ACCORDANCE WITH 'AIRAH' GUIDE "DA27 BUILDING COMMISSIONING", 'ASHRAE GUIDE "THE HVAC COMMISSIONING PROCESS" AND 'CIBSE' CODE M: "COMMISSIONING MANAGEMENT".
- CONTRACTOR SHALL PROVIDE COMMISSIONING DATA FOR REVIEW INCLUDING BUT NOT LIMITED TO:
 - TERMINAL FLOWRATES
 - ROOM NOISE READINGS DURING LOW FAN SPEED & DESIGN FAN SPEED.
- THE CONTRACTOR IS RESPONSIBLE FOR MINOR BALANCING AND CONTROLS ADJUSTMENTS IN THE FIRST 60 DAYS AS REQUIRED, AND QUARTERLY REVIEWS DURING THE 12-MONTH DEFECTS & LIABILITY PERIOD TO ALLOW FOR SYSTEMS MODIFICATION AND 'TUNE' OF THE BUILDING MECHANICAL SERVICES.
- ENSURE DURING COMMISSIONING THAT APPROPRIATE CONTROLS PARAMETERS ARE TREND LOGGING CORRECTLY (IF BMS INCLUDED) AND CAN EASILY EXPORTED TO AID DIAGNOSTICS ETC.
- CONTRACTOR TO PROVIDE MINIMUM 3 HOUR SESSION WITH CLIENT FOR HANDOVER & TRAINING OF SYSTEMS.

CONTROLS

GENERAL

SUPPLY AND INSTALL ALL LABOUR, MATERIALS, EQUIPMENT ETC. REQUIRED FOR THE AUTOMATIC CONTROL OF THE MECHANICAL SERVICE SYSTEMS. THE CONTROL SYSTEM SHALL INCLUDE ALL NECESSARY CONTROL DEVICES, RELAYS, MANUAL SWITCHES, WIRING ETC NECESSARY TO PERFORM THE INTENDED OPERATION.

BUILDING MANAGEMENT SYSTEM

A FULL BMS SYSTEM IS NOT NECESSARILY REQUIRED. CONTRACTOR TO PROVIDE CONTROLS SUFFICIENT TO SATISFY CONTROLS FUNCTIONAL DESCRIPTION AS PER CONTROLS STRATEGY.

ENSUITE HEAT RECOVERY VENTILATORS HRV-SOU

ALL HRV's TO BE INTERLOCKED TO OPERATION OF BEDROOM AC UNIT PROVIDING MINIMUM 10 L/s OF OUTSIDE AIR / EXHAUST AIR.
ALL HRV'S ARE TO BE INTERLOCKED WITH BATHROOM LIGHTING CIRCUIT AND "BOOST" TO COMMISSIONED MAXIMUM FLOW RATE WHEN LIGHT IS ON.
HRV's TO SHUTDOWN ON FIRE SIGNAL.

HEAT RECOVERY VENTILATOR HRV-1

HRV-2 TO BE INTERLOCKED TO OPERATION OF AC-1 AND AC-2.
HRV TO SHUTDOWN ON FIRE SIGNAL.

HEAT RECOVERY VENTILATOR HRV-2

HRV-2 TO BE INTERLOCKED TO OPERATION OF AC-3 AND AC-4.
HRV TO SHUTDOWN ON FIRE SIGNAL.

TOILET EXHAUST FAN EF-1

TOILET EXHAUST FAN TO BE INTERLOCKED WITH LIGHT CIRCUIT C/W 10 MIN RUN-ON TIMER.
FAN TO SHUTDOWN ON FIRE SIGNAL.

AC SYSTEM OPERATION

AC's TO BE OPERATED VIA INDIVIDUAL WALL CONTROLLER.
LIAISE WITH ARCHITECT AND ENGINEER FOR FINAL WALL CONTROLLER LOCATIONS.
CONTROLLER IS TO MANAGE ON/OFF, SET POINT, AUTOMATIC HEATING/COOLING MODE CHANGEOVER, AND AFTER-HOURS CONTROL.
ALLOW TO CONFIGURE WEEKLY SCHEDULE TO TENANT REQUIREMENTS,
AC's TO SHUTDOWN ON FIRE SIGNAL.
IN THE EVENT OF LOSS OF POWER OR FIRE SHUTDOWN, ALL AC'S SHALL AUTOMATICALLY RESTART IN THE SAME OPERATING MODE ONCE POWER IS RESTORED.

FIRE SHUTDOWN

INTERLOCK A/C AND VENTILATION SYSTEM TO ISOLATE ON RECEIPT OF SIGNAL FROM FIP IN FIRE MODE. SHUT DOWN MUST BE VIA ELECTRICAL ISOLATION (NOT VIA BMS SIGNAL). THE FOLLOWING EQUIPMENT IS REQUIRED TO SHUT DOWN ON FIRE SIGNAL:

- ALL INDOOR A/C EQUIPMENTS;
- ALL FANS;
- HRV's.

					DRAWING CHECK				CO-ORDINATION CHECK				CLIENT				PROJECT				TITLE				20000 0 2000 4000 6000				A1	
					SIGNATURE		DATE		SIGNATURE		DATE		■ kennedy associates architects with TERROIR				PCL1 - HENLEY				MECHANICAL SERVICES									
					DRAWN				STRUCT.				E mail@kennedyassociates.com.au W www.kennedyassociates.com.au P +61 2 9557 6466				E sydney@terroir.com.au W www.terroir.com.au P +61 2 9696 2198				6 CROWN CLOSE, HENLEY, NSW				SCOPE OF WORKS &				STATUS	
					DESIGNED				MECH.				Level 3, 1 Booth Street Amandale NSW 2038				Level 2/79 Myrtle St Chippendale NSW 2008				2111				NOT TO BE USED FOR CONSTRUCTION				SCALE @ A1	
					CHECKED				ELECT.																DIMENSIONS IN MILLIMETRES					
									HYDRAULIC																DRAWING No:					
									FIRE/ENV.																5511.008-1-M004				REV.	
A DETAILED DESIGN					SL		SL		GM		21.05.26																		A	
REV. DESCRIPTION					DRN		RE		PL		DATE																			

DO NOT SCALE THIS DRAWING. use only dimensions shown. All dimensions should be checked on site. Drawing to be read in conjunction with the associated notes and specifications. Drawing to be read in conjunction with all other services, architectural and structural. These designs, drawings and specifications are copyright© and must not be altered, reproduced or copied wholly or in any part without the written permission of COVA THINKING Pty Ltd. All rights reserved.

FLEXIBLE DUCT SIZE SCHEDULE							
MAX AIR FLOW (L/s)	50	100	200	250	350	450	600
FLEXIBLE DUCT SIZE Ø(mm)	150	200	250	300	350	400	450
ALL FLEXIBLE DUCT TO BE ACOUSTICALLY INSULATED.							

DOOR GRILLE SCHEDULE						
MAX AIR FLOW (L/s)	50	100	200	300	400	60
DESIGNATION	UC	A	B	C	D	Z
SIZE (mm)	25mm UNDERCUT	600x160	600x300	600x450	600x600	600x350
UNDERCUTS SHALL BE BY BUILDER. ALL DOOR GRILLES SHALL BE SUPPLIED IC/W POWDERCOATED FINISH OF SHAPE&AR DG&C (COLOUR TO ARCHITECT'S APPROVAL) BY MECH SERVICES CONTRACTOR FOR INSTALLATION BY BUILDER. (ACOUSTIC)						

FAN SCHEDULE								
FAN REFERENCE	AIR FLOW QUANTITY	ESTIMATED STATIC PRESSURE	FAN MOTOR SIZE (kW)	PHASE	FL AMPS	INDICATIVE MANUFACTURER	INDICATIVE MODEL	ACCESSORIES
EF-1	75 L/s	60 Pa	0.03	1	0.20 A	FANTECH	JETLINE-100ECO	NON-RETURN DAMPER

HRV SCHEDULE															
UNIT INDOOR REF	Count	OUTSIDE AIR / SUPPLY AIR FLOWRATE	MAX EXTERNAL STATIC PRESSURE SUPPLY SIDE	RETURN / EXHAUST AIR FLOW	MAX EXTERNAL STATIC PRESSURE RETURN SIDE	HEAT EXCHANGE MEDIA	INDICATIVE MANUFACTURER	INDICATIVE MODEL	PHASE	VOLTAGE	POWER	UNIT HEIGHT (mm)	UNIT WIDTH (mm)	UNIT LENGTH (mm)	FILTER
HRV-1	1	80 L/s	100.0 Pa	80 L/s	100.0 Pa	SENSIBLE-ONLY	ARMCOR	XMC125P1	1	240 V	600 W	290	690	920	G4 PANEL
HRV-2	1	0 L/s	100.0 Pa	120 L/s	100.0 Pa	ENTHALPY	ARMCOR	XMC125P1	1	240 V	600 W	290	690	920	G4 PANEL
HRV-SOU	10	<varies>	100.0 Pa	<varies>	100.0 Pa	SENSIBLE-ONLY	<varies>	<varies>	1	240 V	<varies>	<varies>	<varies>	<varies>	G4 PANEL

REF	TYPE	INDICATIVE MANUFACTURER	INDICATIVE MODEL	NECK SIZE (WxH)(mm)	MATERIAL	FINISH	ACCESSORIES	REMARKS
E2	EGGCRATE GRILLE	BRADFLO	AEC	200x200	ALUMINIUM	POWDERCOAT	PLENUM	REMOVABLE CORE TYPE GRILLE
R1	SHADOWLINE GRILLE	EXPELLA	SHADOWLINE DIFFUSER PRO	150ø	ALUMINIUM	POWDERCOAT		
R2	LINEAR SLOT	HOLYOAKE	CSD-25 3 SLOT	3600x177	ALUMINIUM	POWDERCOAT	PLENUM	
R3	EGGCRATE GRILLE	BRADFLO	AEC	250x250	ALUMINIUM	POWDERCOAT	PLENUM	REMOVABLE CORE TYPE GRILLE
R4	EGGCRATE GRILLE	BRADFLO	AEC	450x450	ALUMINIUM	POWDERCOAT	PLENUM	REMOVABLE CORE TYPE GRILLE
S1	LINEAR SLOT	HOLYOAKE	CSD-25 3 SLOT	3000x177	ALUMINIUM	POWDERCOAT	PLENUM	
S2	LINEAR SLOT	HOLYOAKE	CSD-25 2 SLOT	1500x134	ALUMINIUM	POWDERCOAT	PLENUM	
S3	LINEAR BAR GRILLE	HOLYOAKE	LD-600SD	2000x100	ALUMINIUM	POWDERCOAT	PLENUM	
S4	SWIRL DIFFUSER	SMARTEMP	HSC-FD-C 355	395ø	ALUMINIUM	POWDERCOAT	PLENUM	
S5	LINEAR BAR GRILLE	HOLYOAKE	LD-600SD	2300x200	ALUMINIUM	POWDERCOAT	PLENUM	
T3	LINEAR BAR GRILLE	HOLYOAKE	LD-600SD	800x100	ALUMINIUM	POWDERCOAT	PLENUM	
WL1	WEATHER PROOF LOUVRE	HOLYOAKE	OHL-45	500x200	ALUMINIUM	POWDERCOAT	VERMIN PROOF MESH	CONFIRM COLOUR WITH ARCHITECT PRIOR TO ORDER
WL2	WEATHER PROOF LOUVRE	HOLYOAKE	OHL-45	800x200	ALUMINIUM	POWDERCOAT	VERMIN PROOF MESH	CONFIRM COLOUR WITH ARCHITECT PRIOR TO ORDER
WL3	WEATHER PROOF LOUVRE	HOLYOAKE	OHL-45	1200x200	ALUMINIUM	POWDERCOAT	VERMIN PROOF MESH	CONFIRM COLOUR WITH ARCHITECT PRIOR TO ORDER

AIR CONDITIONING INDOOR SPLIT SCHEDULE															
INDOOR UNIT REF	Count	UNIT TYPE	SUPPLY AIR QUANTITY	OUTSIDE AIR QUANTITY	COOLING CAPACITY	HEATING CAPACITY	INDICATIVE MANUFACTURER	INDICATIVE MODEL	DIMENSIONS (HxWxD)	OPERATING CURRENT	PHASE	VOLTAGE	CONTROLLER	ASSOCIATED OUTDOOR UNIT	REMARKS
AC-1	1	BULKHEAD	150 L/s	0 L/s	2.5 kW	3.0 kW	MITSUBISHI ELECTRIC	SEZ-M250A(L)	200x790x700	4.30 A	1	230 V	PAR-CT01MAA	ACCU-1	ACCESS THROUGH REMOVABLE GRILLE
AC-2	1	DUCTED	283 L/s	0 L/s	5.0 kW	6.0 kW	MITSUBISHI ELECTRIC	PEAD-M50JAA(D)	250x900x732	6.40 A	1	230 V	PAR-CT01MAA	ACCU-2	
AC-3	1	DUCTED	283 L/s	0 L/s	5.0 kW	6.0 kW	MITSUBISHI ELECTRIC	PEAD-M50JAA(D)	250x900x732	6.40 A	1	230 V	PAR-CT01MAA	ACCU-3	
AC-4	1	DUCTED	417 L/s	0 L/s	7.1 kW	8.0 kW	MITSUBISHI ELECTRIC	PEAD-M71JAA(D)	250x1100x732	8.80 A	1	230 V	PAR-CT01MAA	ACCU-4	
AC-SOU	10	DUCTED	283 L/s	0 L/s	5.0 kW	6.0 kW	MITSUBISHI ELECTRIC	PEAD-M50JAA(D)	250x900x732	6.40 A	1	230 V	PAR-CT01MAA	ACCU-SOU	

AIR CONDITIONING CONDENSER SPLIT UNIT SCHEDULE								
OUTDOOR UNIT REF	Count	INDICATIVE MANUFACTURER	INDICATIVE MODEL	COOLING CAPACITY	HEATING CAPACITY	OPERATING CURRENT	PHASE	VOLTAGE
ACCU-SOU	12	MITSUBISHI ELECTRIC	SUZ-M50VAD-A	5.0 kW	6.0 kW	6.4 A	1	230 V
ACCU-4	1	MITSUBISHI ELECTRIC	SUZ-M71VAD-A	7.1 kW	8.0 kW	8.8 A	1	230 V
ACCU-3	1	MITSUBISHI ELECTRIC	SUZ-M50VAD-A	5.0 kW	6.0 kW	6.4 A	1	230 V
ACCU-2	2	MITSUBISHI ELECTRIC	SUZ-M50VAD-A	5.0 kW	6.0 kW	6.4 A	1	230 V
ACCU-1	1	MITSUBISHI ELECTRIC	SUZ-M25VA	2.5 kW	3.0 kW	7.2 A	1	230 V

SWIRL REDUCER SCHEDULE

NOMINAL DIAMETER	REDUCER SIZE	FLOWRATE (L/s)
DN 355	0	48-221
	1	42-192
	2	35-158
	3	30-122
	4	20-90
	5	14-62
DN 500	6	10-44
	0	96-439
	1	86-389
	2	80-354
	3	65-292
	4	50-218
	5	34-151

A	DETAILED DESIGN	DESCRIPTION	SL	SL	GM	21.05.26
REV.			GRN	RE	PL	DATE

DRAWING CHECK		CO-ORDINATION CHECK	
SIGNATURE	DATE	SIGNATURE	DATE
DRAWN		STRUCT.	
DESIGNED		MECH.	
CHECKED		ELECT.	
		HYDRAUL	
		FIRE/ENV.	

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PROJECT	PCLI - HENLEY 6 CROWN CLOSE, HENLEY, NSW 2111
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TITLE	MECHANICAL SERVICES EQUIPMENT SCHEDULES
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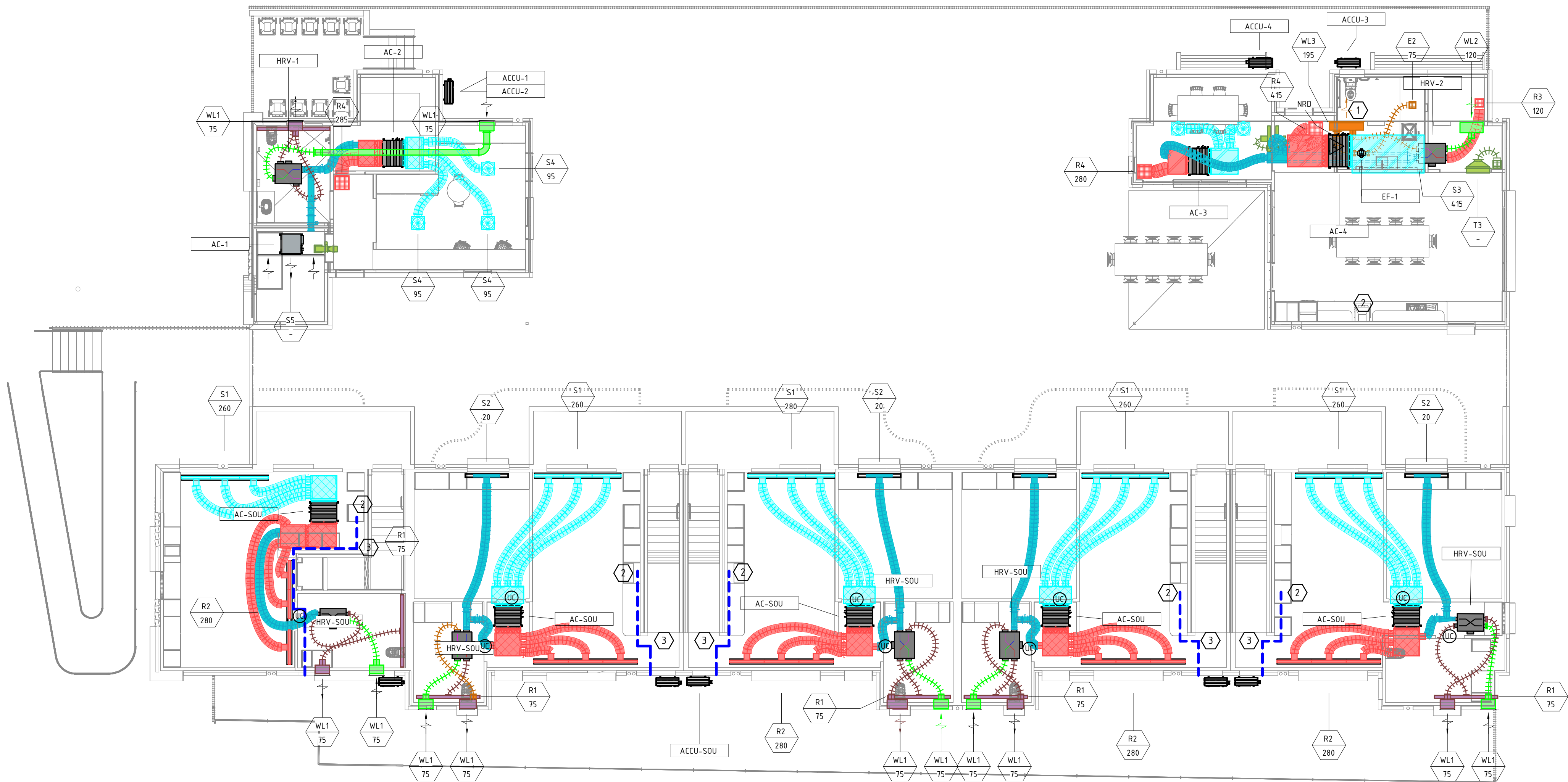
2000	0	2000	4000	6000	A1
STATUS	PRELIMINARY ISSUE NOT TO BE USED FOR CONSTRUCTION				
SCALE @ A1	DIMENSIONS IN MILLIMETRES				REV.
DRAWING No.	5511.008-1-M005				A

GENERAL NOTES

1.  DENOTES REFERENCE NOTE 1
2. ALL FLOWRATES IN LITRES PER SECOND (L/s). ALL MEASUREMENTS IN MILLIMETRES (mm).
3. ALL EXHAUST SYSTEMS TO BE C/W NON-RETURN DAMPERS BETWEEN FAN AND OUTLET.
4. DUCTWORK PENETRATING FIRE RATED WALLS ARE TO BE C/W DUCT WRAP AND INTUMESCENT TYPE DAMPERS TO AS1682 INSTALLED IN ACCORDANCE WITH CSIRO CERTIFIED "TESTED SYSTEMS" AS INSTRUCTED BY MANUFACTURER. REFER ARCHITECTURAL DRAWINGS FOR FIRE AND SMOKE WALL LOCATIONS AND REQUIRED RATINGS.

REFERENCE NOTES

- 1 - SPLIT PLENUM
- 2 - PROPRIETARY SCHWEIGEN RANGEHOOD. REFER ARCHITECTURAL DOCUMENTATION
- 3 - INDICATIVE RANGEHOOD EXHAUST ROUTE TO WALL MOUNTED VENT. PROPRIETARY SCHWIGEN SYSTEM REFER ARHITECTURAL



B		DETAILED DESIGN	SL	SL	GM	21.05.26
A		PRELIMINARY ISSUE	SL	SL	GM	27.03.26
REV.		DESCRIPTION	GRN	RE	PL	DATE

DRAWING CHECK		CO-ORDINATION CHECK	
SIGNATURE	DATE	SIGNATURE	DATE
DRAWN		STRUCT.	
DESIGNED		MECH.	
CHECKED		ELECT.	
		HYDRO/CIVIL	
		FIRE/ENV.	

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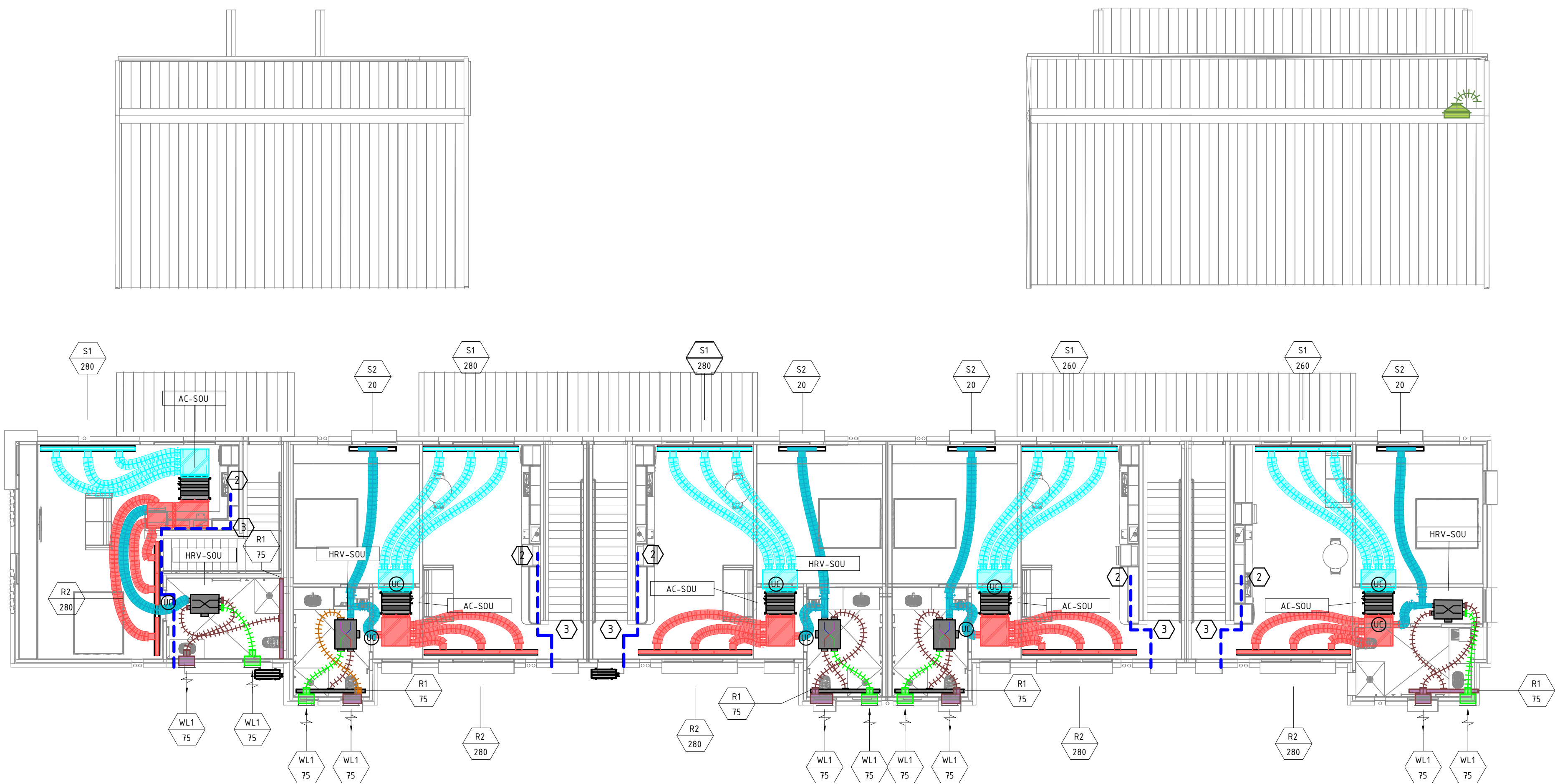
PROJECT	PCLI - HENLEY 6 CROWN CLOSE, HENLEY, NSW 2111
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TITLE	MECHANICAL SERVICES GROUND - LEVEL HVAC LAYOUT
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2000	0	2000	4000	6000	A1
STATUS	PRELIMINARY ISSUE NOT TO BE USED FOR CONSTRUCTION				
SCALE @ A1	DIMENSIONS IN MILLIMETRES				
DRAWING No.	5511.008-1-M200				REV. B

GENERAL NOTES

1.  DENOTES REFERENCE NOTE 1
2. ALL FLOWRATES IN LITRES PER SECOND (L/s). ALL MEASUREMENTS IN MILLIMETRES (mm).
3. ALL EXHAUST SYSTEMS TO BE C/W NON-RETURN DAMPERS BETWEEN FAN AND OUTLET.
4. DUCTWORK PENETRATING FIRE RATED WALLS ARE TO BE C/W DUCT WRAP AND INTUMESCENT TYPE DAMPERS TO AS1682 INSTALLED IN ACCORDANCE WITH CSIRO CERTIFIED "TESTED SYSTEMS" AS INSTRUCTED BY MANUFACTURER. REFER ARCHITECTURAL DRAWINGS FOR FIRE AND SMOKE WALL LOCATIONS AND REQUIRED RATINGS.



B				SL	SL	GM	21.05.26
A				SL	SL	GM	27.03.26
REV.	DESCRIPTION	GRN	RE	PL	DATE		

DRAWING CHECK		CO-ORDINATION CHECK	
SIGNATURE	DATE	SIGNATURE	DATE
DRAWN		STRUCT.	
DESIGNED		MECH.	
CHECKED		ELECT.	
		HYDRO/CIVIL	
		FIRE/ENV.	

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PROJECT	PCLI - HENLEY
	6 CROWN CLOSE, HENLEY, NSW
	2111

TITLE	MECHANICAL SERVICES
	LEVEL 1 - HVAC LAYOUT

2000	0	2000	4000	6000	A1
STATUS					
PRELIMINARY ISSUE					
NOT TO BE USED FOR CONSTRUCTION					
SCALE @ A1	DIMENSIONS IN MILLIMETRES				
DRAWING No.	5511.008-1-M201				REV. B