

# PROPOSED TAROOM SES FACILITY

## 45 HUTTON ST, TAROOM QLD 4420

DO NOT SCALE ANY PART OF THIS DRAWING			
ALL DIMENSIONS ARE TO BE TAKEN FROM THE ARCHITECTS DRAWINGS & ON SITE			
rev	date	drawn	reason for issue
1	19.05.23	LP	FINAL REVIEW

### LEGEND

	UNINSULATED DUCTWORK
	50mm INTERNALLY INSULATED DUCTWORK
	FLEXIBLE DUCT WITH NO RETURN DAMPER
	200x200 EXHAUST GRILLE
	200x200 OUTSIDE AIR GRILLE
	REMOTE CONTROL PANEL
	REFRIGERATION PIPEWORK
	CONDENSATE PIPEWORK
	TUNDISH (BY HYDRAULICS TRADE)
	600x150 DOOR GRILLE
	EQUIPMENT REFERENCE No.
	HI WALL SPLIT UNIT
	CONDENSING UNIT

### GENERAL NOTES

- ALL DUCT SIZES SHOWN ARE CLEAR INTERNAL DIMENSIONS.
- DUCT DIMENSIONING IS NOTED SHOWING THE SIZE OF THE DUCT SIDE IN VIEW FIRST.
- WHERE NECESSARY, OVAL SPIGOTS SHALL BE USED IN LIEU OF CIRCULAR SPIGOTS AT TAKE OFF FROM MAIN DUCT.
- MECHANICAL SUB-CONTRACTOR TO RUN INSULATED CONDENSATE LINES TO DISCHARGE OVER NEAREST DRAIN.
- ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT MECHANICAL SPECIFICATION.
- WHERE DUCTS PASS THROUGH TRUSS FRAMING, THE EXACT SIZE AND LOCATION OF DUCT RUNS SHALL BE FINALISED ON SITE.
- ALL CONDENSING UNITS TO BE MOUNTED ON DOUBLE THICKNESS WAFFLE PADS. CEILING MOUNTED FAN COIL UNITS TO BE MOUNTED ON SPRINGS WITH RUBBER ISOLATORS.
- ALL LOUVRES IN EXTERNAL WALLS TO BE SUPPLIED BY MECHANICAL SUB-CONTRACTOR AND INSTALLED BY THE BUILDER.
- ALL DISCHARGE POINTS AND INLET POINTS, eg. ROOF COWLS, TO BE FITTED WITH BIRDSCREENS.
- FINAL LOCATIONS OF CONTROL PANELS TO BE DETERMINED ON SITE.
- OUTSIDE AIR V.C.D.s TO BE FITTED WITH VERMIN PROOF SCREENS.
- ALL COMPONENTS SHALL BE DESIGNED AND INSTALLED, TO RESIST SEISMIC LOADS DETERMINED IN ACCORDANCE AS 1170.4.

FAN SCHEDULE				
FAN No.	AREA SERVED	AIR FLOW (L/s)	FAN TYPE	POWER & CONTROL
OAF-1.1	MEETING ROOM OUTSIDE AIR FAN	80 L/s	INLINE MIXED FLOW	1Ø / INTERLOCK WITH AC-1.1
OAF-1.2	MEETING ROOM OUTSIDE AIR FAN	80 L/s	INLINE MIXED FLOW	1Ø / INTERLOCK WITH AC-1.2
OAF-2	LUNCHROOM OUTSIDE AIR FAN	80 L/s	INLINE MIXED FLOW	1Ø / INTERLOCK WITH AC-2
OAF-3	LOCKERS OUTSIDE AIR FAN	80 L/s	INLINE MIXED FLOW	1Ø / INTERLOCK WITH AC-3
OAF-4	OFFICE OUTSIDE AIR FAN	30 L/s	INLINE MIXED FLOW	1Ø / INTERLOCK WITH AC-4
TEF-1	TOILET EXHAUST FAN	75 L/s	4-IN-1 BATHROOM UNIT SIMILAR TO VENTAIR SAHARA	1Ø / RCP
TEF-2	TOILET EXHAUST FAN	75 L/s	4-IN-1 BATHROOM UNIT SIMILAR TO VENTAIR SAHARA	1Ø / RCP

AIR CONDITIONER SCHEDULE						
AC	TYPE	AREA SERVED	TOTAL COOLING CAPACITY	SENSIBLE COOLING CAPACITY	AIR FLOW	OUTSIDE AIR FLOW
AC-1.1	HIGHWALL SPLIT	MEETING ROOM	6.8 kW	4.2 kW	NOM.	80 L/s
AC-1.2	HIGHWALL SPLIT	MEETING ROOM	6.8 kW	4.2 kW	NOM.	80 L/s
AC-2	HIGHWALL SPLIT	LUNCHROOM	8.9 kW	6.0 kW	NOM.	80 L/s
AC-3	HIGHWALL SPLIT	LOCKERS	7.5 kW	4.9 kW	NOM.	80 L/s
AC-4	HIGHWALL SPLIT	OFFICE	4.3 kW	3.2 kW	NOM.	30 L/s

### EXTENT OF WORKS

COMPRISES THE PERFORMANCE GUARANTEE, SUPPLY, DELIVERY, INSTALLATION, TESTING, COMMISSIONING, SERVICING AND MANUFACTURE OF;

- FIVE (5) SPLIT HIGHWALL AIR CONDITIONING SYSTEMS;
- FIVE (5) OUTSIDE AIR FANS;
- TWO (2) EXHAUST FANS
- ASSOCIATED DUCTWORK, FILTERS, GRILLES AND ASSOCIATED ITEMS;
- ALL ELECTRICAL WIRING AND CONTROLS ASSOCIATED WITH THE ABOVE;
- ALL REFRIGERANT AND CONDENSATE PIPEWORK;
- WORKSHOP DRAWINGS AND AS-INSTALLED DRAWINGS;
- OPERATING AND MAINTENANCE MANUAL;
- SERVICE AND MAINTENANCE FOR THE DEFECT LIABILITY PERIOD;
- ALL OTHER WORK, WHETHER SPECIFICALLY MENTIONED OR NOT, NECESSARY TO PROVIDE A COMPLETE OPERATIVE INSTALLATION.

### WORK BY OTHERS

THE FOLLOWING WORKS AND/OR PROVISIONS ASSOCIATED WITH THE MECHANICAL SERVICES SHALL BE PROVIDED AT NO COST TO THE MECHANICAL CONTRACTORS, INCLUDING;

- THE PROVISION OF SUITABLE CONDENSATE DRAIN POINTS AS INDICATED ON THE DRAWINGS;
- THE PROVISION OF SUITABLE POWER SUPPLIES.

THE MECHANICAL CONTRACTOR SHALL CONFIRM THE ABOVE ARE INCLUDED IN THE BUILDING WORKS.

### AIR CONDITIONING UNITS

SPLIT AIR CONDITIONING SYSTEMS SHALL BE REVERSE CYCLE AIR CONDITIONING UNITS. THEY SHALL BE OF DAIKIN, MITSUBISHI ELECTRIC, OR APPROVED EQUAL MANUFACTURE.

THEY SHALL BE FULLY FACTORY ASSEMBLED AND FULLY INTERNALLY FACTORY WIRED, WITH PANELS EASILY REMOVABLE TO ALLOW ACCESS FOR SERVICING AND MAINTENANCE PURPOSES.

PROVIDE A G.I. SAFETY TRAY UNDER EACH CEILING MOUNTED AIR HANDLING UNIT AND SEPARATELY DRAIN.

CONDENSERS SHALL BE MOUNTED ON GALVANISED STEEL BRACKETS FIXED SECURELY TO THE WALL STRUCTURE. PROVIDE NEOPRENE ANTI-VIBRATION PADS BETWEEN THE BRACKETS AND THE CONDENSING UNIT.

### VENTILATION FANS

FANS SHALL BE SUPPLIED TO MATCH THE DUTIES NOMINATED IN THE FAN SCHEDULE.

THE OUTSIDE AIR SYSTEMS SHALL COMPRISE AN INLINE MIXED FLOW FAN C/W WITH NON-RETURN DAMPERS AND BE COMPLETE WITH ALL DUCTWORK, INTAKE LOUVRES, FANS, ELECTRICAL WORK & CONTROLS AS GENERALLY SHOWN ON THE DRAWING.

THE TOILET EXHAUST SYSTEMS SHALL BE INCORPORATED INTO THE 4-IN-1 BATHROOM UNIT, SIMILAR TO VENTAIR SAHARA OR APPROVED EQUAL, AND BE CAPABLE OF PROVIDING A MINIMUM OF THE DUTY NOMINATED IN THE FAN SCHEDULE. THEY SHALL BE FLEX DUCTED TO A COMMON DUCT AND THE SYSTEM SHALL BE COMPLETE WITH NON-RETURN DAMPERS WHERE SPECIFIED ON THE DRAWINGS.

### CONTROLS

FINAL LOCATIONS OF CONTROL PANELS TO BE DETERMINED ON SITE.

### AIR CONDITIONING SYSTEMS

AIR CONDITIONING UNITS ARE TO BE CONTROLLED BY THE UNITS WIRED, PROPRIETARY CONTROL PANEL, LOCATED IN THE POSITION INDICATED ON THE DRAWING.

THE CONTROLLER SHALL BE COMPLETE WITH, BUT NOT LIMITED TO THE FOLLOWING FUNCTIONS:

- ON/OFF
- TEMPERATURE SET POINT ADJUSTMENT
- FAN SPEED ADJUSTMENT
- 7 DAY PROGRAMMABLE TIMER
- AUTO OFF

THE ASSOCIATED OUTSIDE AIR SYSTEM SHALL BE INTERLOCKED TO RUN WITH THE OPERATION OF THE AIR CONDITIONING SYSTEM.

TOILET EXHAUST SYSTEM  
THE TOILET EXHAUST SYSTEM SHALL BE CONTROLLED BY THE PROPRIETARY REMOTE CONTROL PANEL.

### ELECTRICAL

ALL ELECTRICAL WORK SHALL BE CARRIED OUT STRICTLY IN ACCORDANCE WITH AS3000 AND SUPPLY AUTHORITY REGULATIONS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AN ISOLATED SINGLE-PHASE ADJACENT POWER SUPPLY TO EACH CONDENSING UNIT AND AN ISOLATED SINGLE-PHASE SUPPLY ADJACENT EACH OUTSIDE AIR FAN. THE MECHANICAL CONTRACTOR SHALL CONNECT THE SUPPLY PROVIDED AND DO ALL WORK FROM THIS POINT AS NECESSARY FOR THE COMPLETE WORKING INSTALLATION.

THE ELECTRICAL CONTRACTOR SHALL INSTALL THE BATHROOM UNIT C/W THE IN-BUILT EXHAUST FAN AS PER THE MANUFACTURER'S INSTALLATION GUIDELINES. THE MECHANICAL CONTRACTOR SHALL CONNECT ALL DUCTING FROM THIS POINT AS NECESSARY FOR THE COMPLETE WORKING INSTALLATION.

### DUCTWORK

ALL SHEET METAL DUCTWORK SHALL BE CONSTRUCTED TO COMPLY WITH AS1668.1 (2015) AND AS4254.2 (2012) TO THE DIMENSIONS SHOWN. DUCTWORK SHALL BE CONSTRUCTED OF GALVANISED SHEET METAL. DESIGN RESISTANCE TO AIR FLOW SHALL NOT EXCEED 1Pa/m. ALL DUCT SIZES SHOWN ARE CLEAR INTERNAL DIMENSIONS. DUCT DIMENSIONING IS NOTED SHOWING THE SIZE OF THE DUCT SIDE IN VIEW FIRST.

### FLEXIBLE DUCTWORK

FLEXIBLE DUCTWORK SHALL BE FACTORY FABRICATED FROM A RESILIENT HELIX OF ZINC COATED SPRING STEEL WIRE. IT SHALL BE INTERNALLY LINED WITH A TOUGH ALUMINIUM LAMINATE AND COMPLY WITH THE REQUIREMENTS OF AS4254.1 (2012).

THE MAXIMUM LENGTH OF FLEXIBLE DUCT IN ANY RUN SHALL NOT EXCEED 6m.

FLEXIBLE DUCTWORK SHALL BE OF THE 4 ZERO TYPE AND BE SECURED WITH APPROVED TAPING AND CABLE TIE CLAMP OVER INTERNAL SLEEVE. THE EXTERNAL SLEEVE SHALL BE TAPED TO THE DUCT OR CUSHION HEAD TO MAINTAIN THE INSULATION THICKNESS AND VAPOUR BARRIER WITH HEAVY DUTY 450 SISALATION TAPE.

ALL FLEXIBLE DUCTWORK SHALL BE SUPPORTED FROM THE ROOF OR SLAB OVER. PROVIDE SUITABLE SLING TO SUPPORT THE FLEXIBLE DUCTWORK.

### DUCTWORK INSULATION

INTERNAL INSULATION SHALL BE RIGID GLASSWOOL DUCT LINER HAVING A MASS OF 32 kg/m<sup>2</sup> AND THERMAL CONDUCTIVITY OF 0.031W/MK AT 20°C, BONDED TO PERFORATED 450 SISALATION. FIXING SHALL BE BY STUDS AND CLIPS ON 300 MM SPACINGS. PROVIDE PROTECTIVE CAPS TO FASTENING PINS IN ACCESSIBLE AREA OF DUCTWORK. ALL DUE CARE SHALL BE TAKEN TO ENSURE THAT INSULATION CIRCUMFERENTIAL JOINTS ARE CARRIED OUT IN A WORKMANLIKE MANNER TO PREVENT ANY COLD TRACKING PROBLEMS.

### PIPEWORK

ALL PIPEWORK SHALL BE INSTALLED IN AN APPROVED MANNER TO MEET STRUCTURAL, ARCHITECTURAL AND FUNCTIONAL CONDITIONS AND SHALL NOT INTERFERE WITH THE WORK OF OTHER TRADES. CARE MUST BE TAKEN TO ENSURE NEAT APPEARANCE AS WELL AS TRUE ALIGNMENT AND GRADE. CONDENSATE DRAINS SHALL BE UPVC. REFRIGERANT PIPING TO BE COPPER TO AS1571. TESTING OF REFRIGERANT PIPEWORK SHALL BE DONE USING NITROGEN AT A MINIMUM PRESSURE OF 3700 kPa (R410A SYSTEMS) OR AS PER MANUFACTURER'S RECOMMENDATION.

### PIPEWORK INSULATION

REFRIGERATION PIPEWORK SHALL BE INSULATED IN ACCORDANCE WITH THE FOLLOWING:

LIQUID LINE	- 19mm INSULATION
SUCTION LINE <Ø15mm	- 19mm INSULATION
SUCTION LINE ≥Ø15mm	- 25mm INSULATION

SUCTION AND LIQUID REFRIGERANT LINES SHALL BE INSULATED WITH PREFORMED ELASTOMERIC SPONGE EQUAL TO FR ARMAFLEX OR APPROVED EQUAL INSTALLED STRICTLY AS RECOMMENDED BY THE MANUFACTURER. INSTULATION SHALL BE WEATHERPROOFED TO APPROVAL.

ALL EXPOSED INSULATION SHALL BE COVERED WITH COLORBOND TOP HAT SECTION; COLOUR TO MATCH ARCHITECTURAL REQUIREMENTS.

### TESTING AND COMMISSIONING

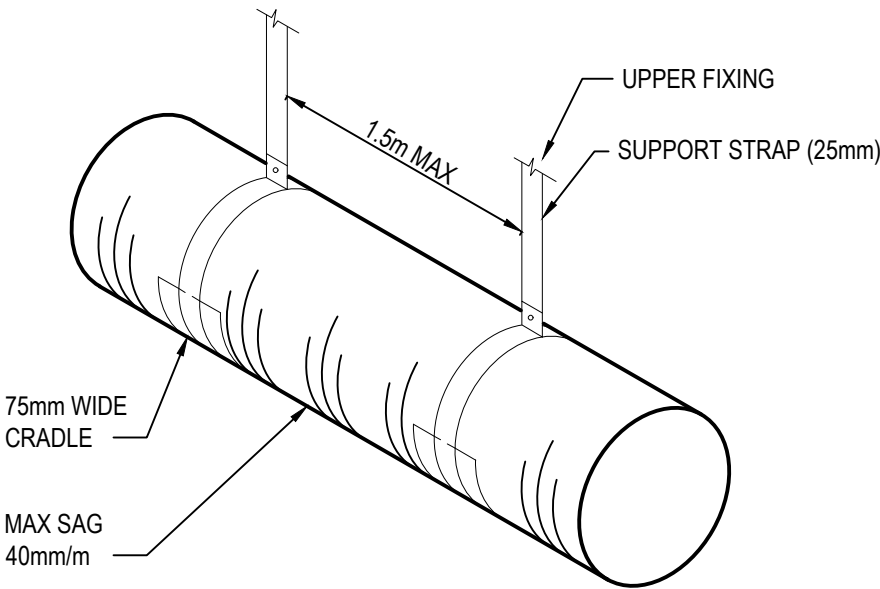
THE WHOLE OF THE CONTRACT WORKS SHALL BE IN PERFECT WORKING ORDER ON COMPLETION AND SHALL IF NECESSARY BE MODIFIED, REPAIRED AND ADJUSTED TO PERFORM THE REQUIRED FUNCTION PRIOR TO PRACTICAL COMPLETION.

### WORKSHOP DRAWINGS / AS INSTALLED DRAWINGS

PREPARE SHOP DRAWINGS FOR REVIEW PRIOR TO ANY CONSTRUCTION. IN PREPARATION OF THE DRAWINGS, THIS CONTRACTOR SHALL CO-ORDINATE THEIR WORKS WITH ALL BUILDING AND OTHER SERVICES. AT THE COMPLETION OF THE INSTALLATION, THIS CONTRACTOR SHALL CORRECT THE DRAWINGS TO AN 'AS-INSTALLED' CONDITION.

### OPERATING AND MAINTENANCE MANUAL

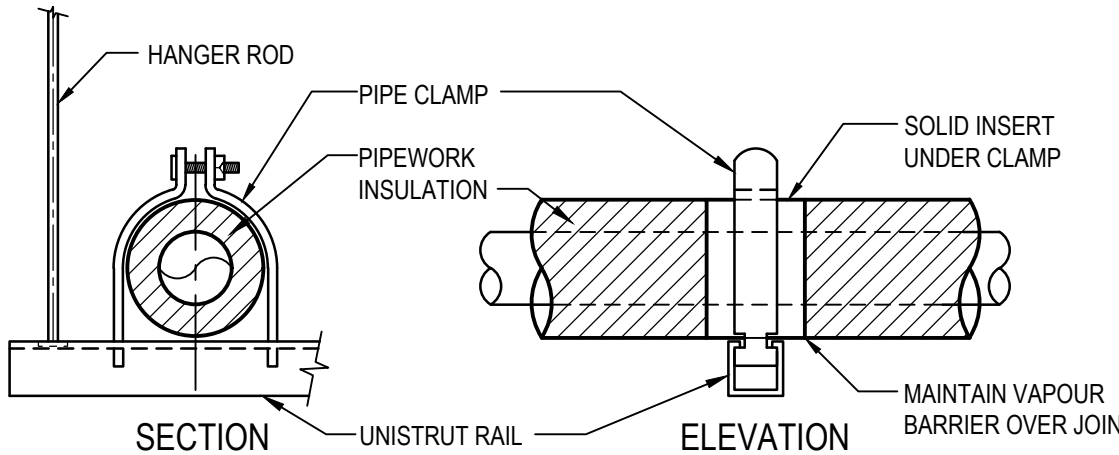
SHALL INCLUDE: RELEVANT MANUFACTURERS LITERATURE, SYSTEM AND CONTROL DESCRIPTIONS, EQUIPMENT SCHEDULES, MAINTENANCE SCHEDULES AND AS-INSTALLED DRAWINGS. THE OPERATING AND MAINTENANCE MANUAL SHALL BE PROVIDED IN HARD AND SOFT COPIES.



**NOTE:**  
INSTALLATION TO COMPLY WITH AS4254.1:2012

### FLEXIBLE DUCT SUPPORT DETAIL

NOT TO SCALE



### PIPE WORK FIXING DETAIL

FIXING CENTRES AS PER SPECIFICATION  
NOT TO SCALE

### FINAL REVIEW

consulting engineer

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### PROPOSED TAROOM SES FACILITY

#### 45 HUTTON ST TAROOM QLD

drawing title

### SITE PLAN, LEGEND NOTES, SCHEDULE, DETAILS, & SPECIFICATION

### MECHANICAL SERVICES

scale	designed	drawn
1:100 @A1	LP	LP
project number	drawing number	revision
23-048	M01	1