

ISO A1 594mm x 841mm

Last Plotted: 24/04/2024 1:51:16 PM  
Filename: Autodesk Docs:/BP-4PAC (NZL) 60716207-ST Johns Church/60716207\_ST Johns Church\_MEP\_2022.rvt

# ST JOHNS CHURCH MECHANICAL SERVICES DRAWINGS

MECHANICAL SERVICES - DRAWING INDEX	
SHEET NUMBER	SHEET NAME
DRG-ME-0000	COVERSHEET
DRG-ME-0001	LEGEND
DRG-ME-0101	DETAILS
DRG-ME-2000	BASEMENT - EXISTING HVAC LAYOUT
DRG-ME-2010	GROUND FLOOR - EXISTING HVAC LAYOUT
DRG-ME-2100	BASEMENT - HVAC ZONING LAYOUT
DRG-ME-2110	GROUND FLOOR - HVAC ZONING LAYOUT
DRG-ME-2120	MEZZANINE - HVAC ZONING LAYOUT
DRG-ME-2200	BASEMENT - DUCTWORK LAYOUT
DRG-ME-2210	GROUND FLOOR - DUCTWORK LAYOUT
DRG-ME-2220	MEZZANINE - DUCTWORK LAYOUT
DRG-ME-2300	BASEMENT - PIPEWORK LAYOUT
DRG-ME-2310	GROUND FLOOR - PIPEWORK LAYOUT
DRG-ME-2320	MEZZANINE - PIPEWORK LAYOUT
DRG-ME-4001	SECTION - SHEET 1 OF 2
DRG-ME-4002	SECTION - SHEET 2 OF 2
DRG-ME-7001	EQUIPMENT SCHEDULE - SHEET 1 OF 2
DRG-ME-7002	EQUIPMENT SCHEDULE - SHEET 2 OF 2



DETAILED DESIGN



ST JOHNS CHURCH

DETAILED DESIGN

ISSUE/REVISION		
I/R	DATE	DESCRIPTION
A	29/09/2023	DEVELOPED DESIGN
B	07/02/2024	DETAILED DESIGN
C	14/02/2024	DETAILED DESIGN

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2000.

AECOM



60716207



ISO A1 594mm x 841mm

A

B

C

D

Let's Saved: 24/04/2024 1:51:17 PM  
Filename: Autodesk Docs\\BP-APAC (NZL) 60716207-St Johns Church\\MEP\_2022.rvt

DUCTWORK	
SHEET METAL TOILET EXHAUST AIR DUCTWORK	MOTORISED SMOKE DAMPER C/W DUCT MOUNTED ACCESS PANEL.
SHEET METAL GENERAL EXHAUST AIR DUCTWORK	FLEXIBLE DUCT CONNECTION
SHEET METAL OUTSIDE AIR DUCTWORK	DUCT MOUNTED ELECTRIC HEATER C/W SAFETY STAT AND LINED WITH FIRED CERAMIC BOARD
SHEET METAL RETURN AIR DUCTWORK	DUCT MOUNTED HEATING WATER COIL
SHEET METAL SUPPLY AIR DUCTWORK	BRANCH POP TAKE OFF C/W BUTTERFLY DAMPER
DEMOLISH / RELOCATE DUCTWORK	DEEP BED FILTER C/W PANEL FILTER
EXISTING DUCTWORK	PANEL FILTER
INTERNALLY INSULATED DUCTWORK R VALUE 1.0	HALF RADIUS BEND
INTERNALLY INSULATED DUCTWORK R VALUE 1.2	SQUARE BEND WITH TURNING VANES
INTERNALLY INSULATED DUCTWORK R VALUE 2.0	DUCT TRANSITION CIRCULAR TO RECTANGULAR
FIRE RATED INSULATED DUCTWORK	DUCT TAKE-OFF C/W STREAM SPLITTER
EXTERNALLY INSULATED DUCTWORK R VALUE 1.0	ACOUSTICALLY LINED FLEXIBLE DUCT
EXTERNALLY INSULATED DUCTWORK R VALUE 1.2	SPIRAL DUCTWORK
EXTERNALLY INSULATED DUCTWORK R VALUE 2.0	SUPPLY AIR FLOW DIRECTION
DUCTWORK RISER	RETURN AIR FLOW DIRECTION
DUCTWORK DROPPER	CEILING MOUNTED ACCESS PANEL
MOTORISED DAMPER	TEMPERATURE SENSOR
NON RETURN DAMPER	AVERAGE TEMPERATURE SENSOR
OPPOSED BLADE DAMPER	CARBON DIOXIDE SENSOR
VOLUME CONTROL DAMPER	AFTER HOURS CONTROL POINT
FIRE DAMPER C/W DUCT MOUNTED ACCESS PANEL. RATING TO MATCH WALL OR SLAB.	LOCAL CONTROL POINT
MOTORISED SMOKE DAMPER C/W DUCT MOUNTED ACCESS PANEL. RATING TO MATCH WALL OR SLAB.	MECHANICAL SWITCHBOARD
	DOOR UNDERCUT

FLEXIBLE DUCT SCHEDULE		
AIR QUANTITY (L/s)	DUCT Ø(mm) SA/RA/EA	DUCT Ø(mm) TRANSFER
0 - 50	150	200
51 - 100	200	300
101 - 175	250	350
176 - 250	300	450
251 - 360	350	550
361 - 450	400	600
451 - 530	450	-
531 - 650	500	-

MECHANICAL SERVICES - GENERAL NOTES:

1.

DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE MECHANICAL SERVICES SPECIFICATION, ARCHITECTURAL SPECIFICATION AND ARCHITECTURAL DRAWINGS. THE CONTRACTOR SHALL BE NOTIFIED OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
2.

FOR DIMENSIONAL & CONSTRUCTIONAL DETAILS OF BUILDING REFER TO ARCHITECTS DRAWINGS & SITE. CHECK ALL DIMENSIONS AND LOCATIONS ON SITE PRIOR TO MANUFACTURE.
3.

THESE DRAWINGS ARE DIAGRAMMATIC ONLY. THE SERVICES INDICATED ON THESE DRAWINGS SHOW THE GENERAL DESIGN INTENT. THE CONTRACTOR SHALL CONFIRM THE EXACT ROUTE OF SERVICES ON SITE, CO-ORDINATING WITH ALL TRADES.
4.

PROVIDE AND UNDERTAKE ALL NECESSARY ADJUSTMENTS, MODIFICATIONS & ADDITIONS AS REQUIRED TO ACHIEVE THE INTENT INDICATED ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATION.
5.

THE MECHANICAL CONTRACTOR SHALL CONFIRM CEILING VOID REQUIREMENTS ARE ADEQUATE PRIOR TO MANUFACTURE AND INSTALLATION. ALLOW SERVICES ZONES FOR OTHER TRADES. ANY ABORTIVE INSTALLATION OR MANUFACTURE SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
6.

ALL MECHANICAL SERVICES SHALL BE INSTALLED IN THE CEILING SPACE UNLESS SHOWN OR NOTED OTHERWISE.
7.

ALL DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH AS 4254 PARTS 1 & 2, UNLESS DETAILED OTHERWISE ON THE DRAWINGS AND IN THE MECHANICAL SERVICES SPECIFICATION.
8.

CONFIRM DUCTWORK SIZES ON SITE FOR CO-ORDINATED FIT PRIOR TO ORDERING EQUIPMENT OR MANUFACTURE.
9.

ALL AIR CONDITIONING SUPPLY AND RETURN AIR DUCTWORK SHALL BE THERMALLY LAGGED IN ACCORDANCE WITH BCA REQUIREMENTS INDICATED IN SPECIFICATION. PROVIDE INTERNAL INSULATION WHERE INDICATED ON DRAWINGS.
10.

DUCT SIZES ARE CLEAR AIRWAY DIMENSIONS IN mm.
11.

DUCT SIZES - 1st FIGURE : SIDE SHOWN  
- 2nd FIGURE : SIDE NOT SHOWN
12.

ALL SQUARE BENDS SHALL HAVE TURNING VANES UNLESS:  
a) THE DUCT DIMENSION PERPENDICULAR TO THE TURNING VANE IS LESS THAN 200mm, OR:  
b) THE SQUARE BEND IS PART OF A KITCHEN EXHAUST SYSTEM.
13.

ALL SUPPLY AND RETURN AIR DUCTWORK TO HAVE A MINIMUM PRESSURE CLASS OF 500.
14.

ACOUSTIC TRANSFER DUCTS SHALL BE CONSTRUCTED SUCH THAT THE LINE OF SIGHT FROM EACH END IS OBSTRUCTED.
15.

VOLUME CONTROL DAMPERS SHALL BE PROVIDED ON ALL SUPPLY AND EXHAUST AIR DUCTWORK BRANCH CONNECTIONS. VOLUME CONTROL DAMPERS SHALL BE ACCESSIBLE VIA CEILING ACCESS PANELS WHERE CEILING TILES ARE NOT PROVIDED.
16.

FOR FLEXIBLE DUCTWORK PROVIDE BUTTERFLY DAMPERS AT BRANCH DUCTWORK TAKE OFFS. WHERE CEILINGS ARE NOT ACCESSIBLE LOCATE BUTTERFLY DAMPER AT CUSHION HEAD BOX.
17.

OVAL S/A SPIGOTS SHALL BE USED WHERE THE FLEXIBLE DUCT SIZE IS EQUAL TO OR GREATER THAN DEPTH OF THE S/A DUCT. SPIGOTS SHALL BE INSULATED TO THE REQUIREMENTS SET OUT WITHIN THE DRAWINGS AND SPECIFICATION PROVIDED.
18.

THE TOTAL LENGTH OF FLEXIBLE DUCTWORK BETWEEN SPIGOT AND OUTLET SHALL NOT EXCEED 3 METRES.
19.

WHERE DUCTWORK PENETRATES PLANTROOM WALLS, OR ENTERS RISERS OR DROPPERS, AN AIR TIGHT SEAL SHALL BE PROVIDED. THE SEAL SHALL BE FIRE RATED WHERE REQUIRED.
20.

THE MECHANICAL SERVICES CONTRACTOR SHALL PROVIDE ALL FIRE DAMPERS C/W DUCT MOUNTED ACCESS PANELS TO FACILITATE ROUTINE TESTING. FIRE DAMPERS SHALL BE ACCESSIBLE VIA CEILING ACCESS PANELS WHERE CEILING TILES ARE NOT PROVIDED.
21.

ALL DUCTED FIRE DAMPERS SHALL BE RATED TO MATCH THE FIRE RATING REQUIREMENTS OF THE PARTICULAR ELEMENT (REFER TO ARCHITECTURAL DOCUMENTATION). FIRE DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF NEW ZEALAND BUILDING CODE, AS1668.1, AS1682 AND AS 1530.4.
22.

REFER TO MECHANICAL SERVICES SPECIFICATION FOR DETAILED DESCRIPTION OF AUTOMATIC CONTROLS OPERATION.
23.

ALL SYSTEMS SHALL BE BALANCED & COMMISSIONED BY NEBB CERTIFIED PERSONNEL. THE CONTRACTOR SHALL SUBMIT BALANCING FIGURES FOR REVIEW. DETAILS TO BE PROVIDED AND SET OUT WITHIN THE FABRICATION DRAWINGS.
24.

PROVIDE ALL NECESSARY STRUCTURAL SUPPORTS (INCLUDING SECONDARY STEEL) ASSOCIATED WITH MECHANICAL EQUIPMENT, PIPEWORK, DUCTWORK & WIRING.
25.

ESTIMATED SYSTEM RESISTANCE FOR TENDER PURPOSES ONLY. FANS, PUMPS AND MOTORS SHALL BE SELECTED BY MECHANICAL TRADE TO MEET EQUIPMENT SELECTION AND INSTALLED SYSTEM.
26.

REFER TO THE MECHANICAL SERVICES SPECIFICATION FOR CORROSION PROTECTION, LABELING AND PAINTING OF SERVICES ALL FINAL PAINT FINISH COLOURS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL REQUIREMENTS.
27.

ALL PLANT AND EQUIPMENT SHALL BE VIBRATION ISOLATED TO ACHIEVE AN ISOLATION EFFICIENCY OF NOT LESS THAN 95%.
28.

FOR FINAL LOCATION OF DIFFUSERS, GRILLES AND CEILING ACCESS PANELS REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN(S). THE CONTRACTOR SHALL CONFIRM THE FINAL LOCATIONS ON SITE PRIOR TO INSTALLATION. ANY ABORTIVE INSTALLATION OR FABRICATION SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
29.

SUPPLY AIR PLENUMS WITH 25mm THICK INTERNAL INSULATION SHALL BE PROVIDED TO ALL SUPPLY AIR DIFFUSERS.
30.

ALL EXTERNAL LOUVRES INCLUDING SUPPORT FRAMES AND BRACING AS REQUIRED SHALL BE INSTALLED BY BUILDER IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATION.
31.

THE MECHANICAL SERVICES CONTRACTOR SHALL SUPPLY ALL DOOR GRILLES AS REQUIRED FOR INSTALLATION BY BUILDER IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATION.
32.

ALL FLOOR, WALL AND ROOF PENETRATIONS C/W UPSTANDS AND UNDERFLASHING AS REQUIRED SHALL BE BY BUILDING TRADE IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATION. THE MECHANICAL CONTRACTOR SHALL PROVIDE OVERFLASHINGS TO SUCH PENETRATIONS WHERE REQUIRED.
33.

THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE TUNDISH AND FLOOR WASTE REQUIREMENTS WITH HYDRAULICS TRADE.
34.

ALL CONDENSATE DRAINS SHALL BE DIA 32 COPPER UNLESS OTHERWISE INDICATED.
35.

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ELECTRICAL SERVICES DRAWINGS AND ELECTRICAL SERVICES SPECIFICATION FOR RETICULATION OF POWER TO MECHANICAL DISTRIBUTION BOARDS BY ELECTRICAL TRADE. CONTROLS AND POWER FROM THE MECHANICAL DISTRIBUTION BOARD TO EQUIPMENT SHALL BE BY MECHANICAL TRADE.
36.

ALL WIRING SHALL BE IN ACCORDANCE WITH AS 3000. AS/NZS 3000, AND PROVIDED IN ACORDANCE WITH SECTION XYZ OF THE MECHANICAL SPECIFICATION.
37.

ALL EQUIPMENT SHALL BE PROVIDED WITH LOCAL ELECTRICAL ISOLATORS.
38.

CONTRACTOR TO PROVIDE AS SOON AS PRACTICAL CONFIRM THE CONNECTED, DIVERSIFIED AND ABSORBED ELECTRICAL LOADS FOR VERIFICATION OF SUBMAINS BY ELECTRICAL TRADE.
39.

ALL SENSOR, CONTROL POINT AND THERMOSTAT LOCATIONS ARE INDICATIVE ONLY. FINAL LOCATIONS SHALL BE SHOWN ON SHOP DRAWINGS. AN ALLOWANCE SHALL BE INCLUDED TO ENABLE THESE DEVICES TO BE RELOCATED WITHIN A 10 METRE RADIUS OF LOCATIONS SHOWN ON DRAWINGS. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR PROPOSED LOCATIONS PRIOR TO INSTALLATION OF CABLING.
40.

TEMPERATURE SENSORS SAMPLE TO BE SUBMITTED FOR APPROVAL.
41.

WHERE NATURAL VENTILATION IS PROVIDED, OPERABLE WINDOW TO BE A MIN. 5% OF THE NET FLOOR AREA, AND ABLE TO BE FIXED OPEN.



PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	14/02/2024	DETAILED DESIGN
A	07/02/2024	DETAILED DESIGN



SCALE NTS @A1

SHEET TITLE

MECHANICAL SERVICES  
DETAILS

PROJECT NUMBER

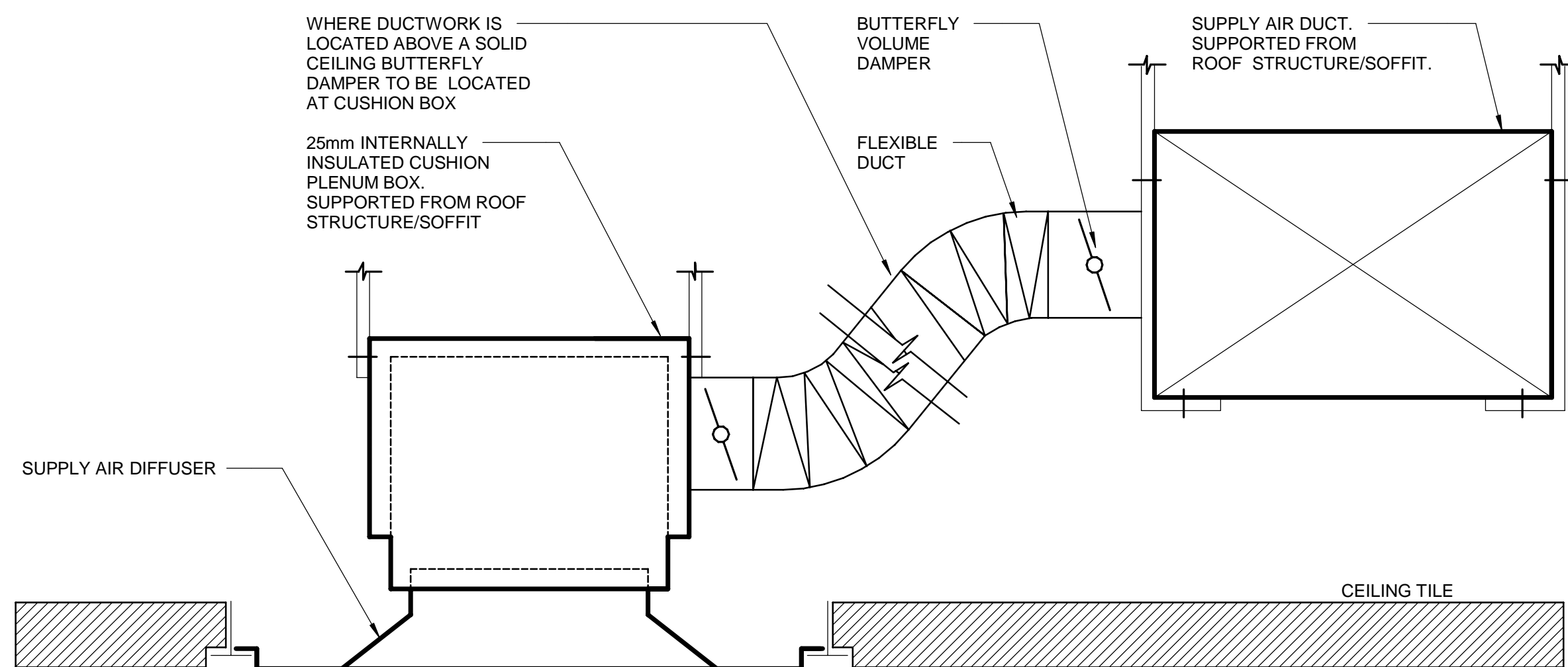
60716207

DRAWING NUMBER

DRG-ME-0101

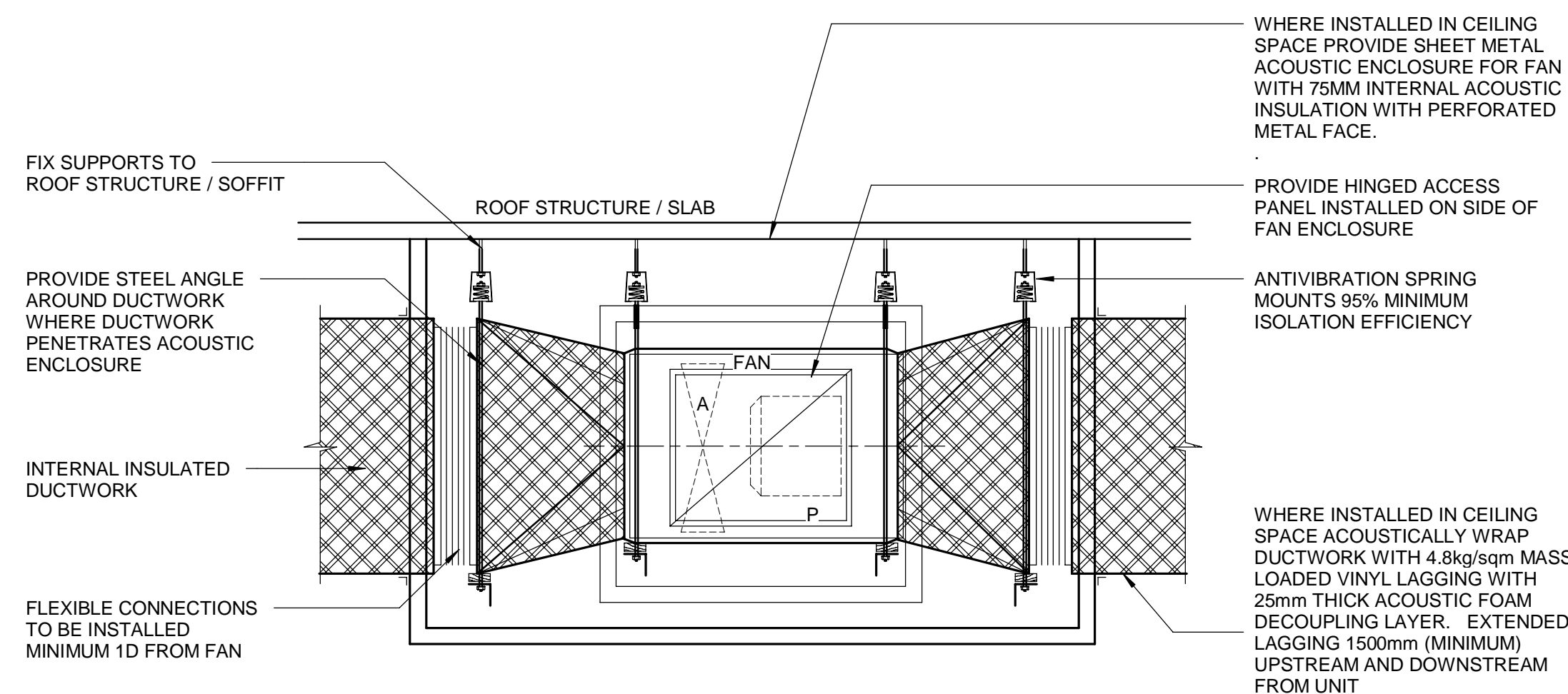
REVISION

B



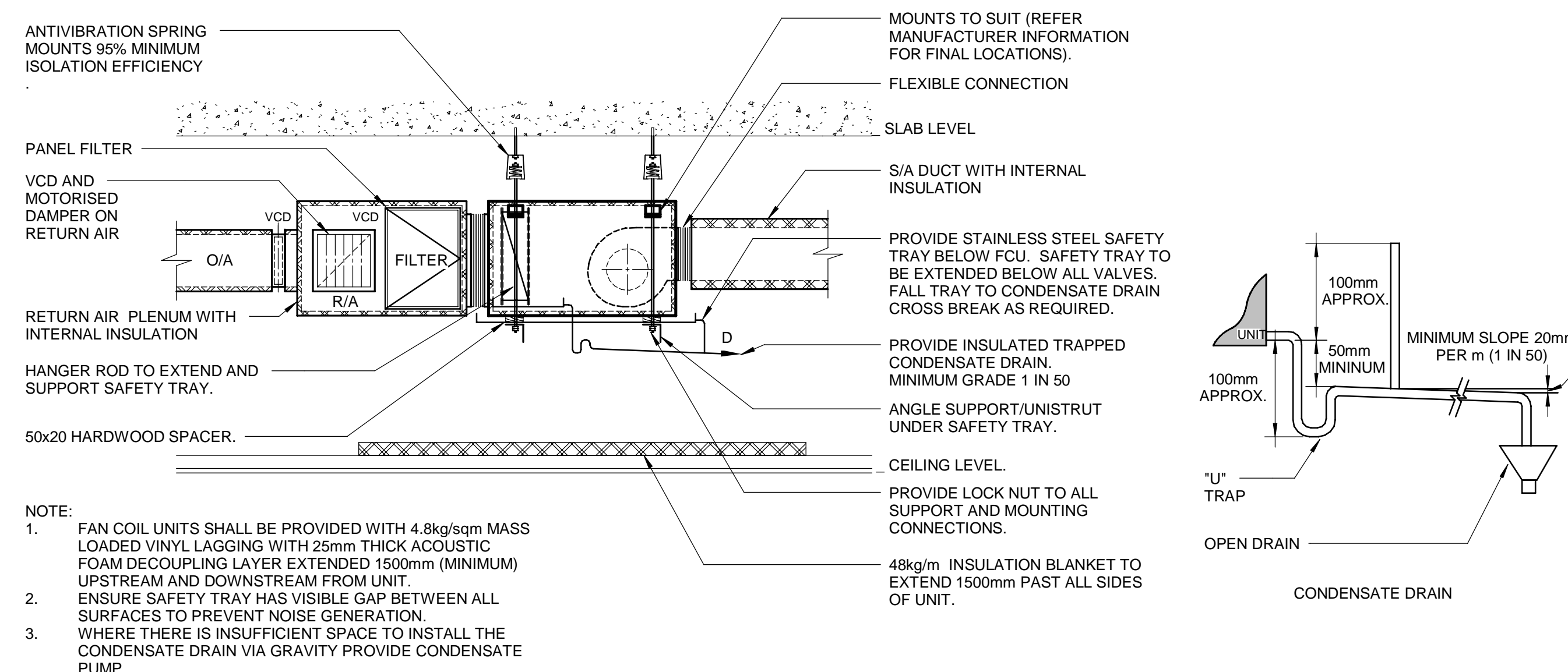
CUSHION HEAD

SCALE: 1 : 100



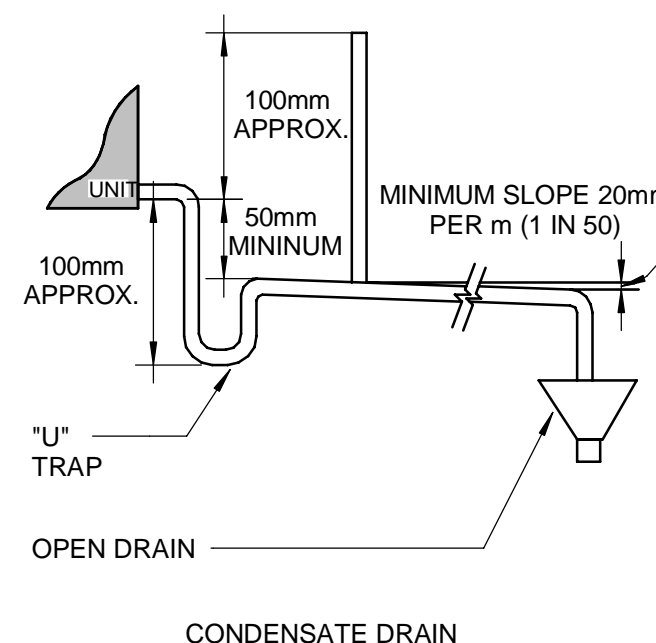
FAN AXIAL MOUNTING

SCALE: 1 : 100

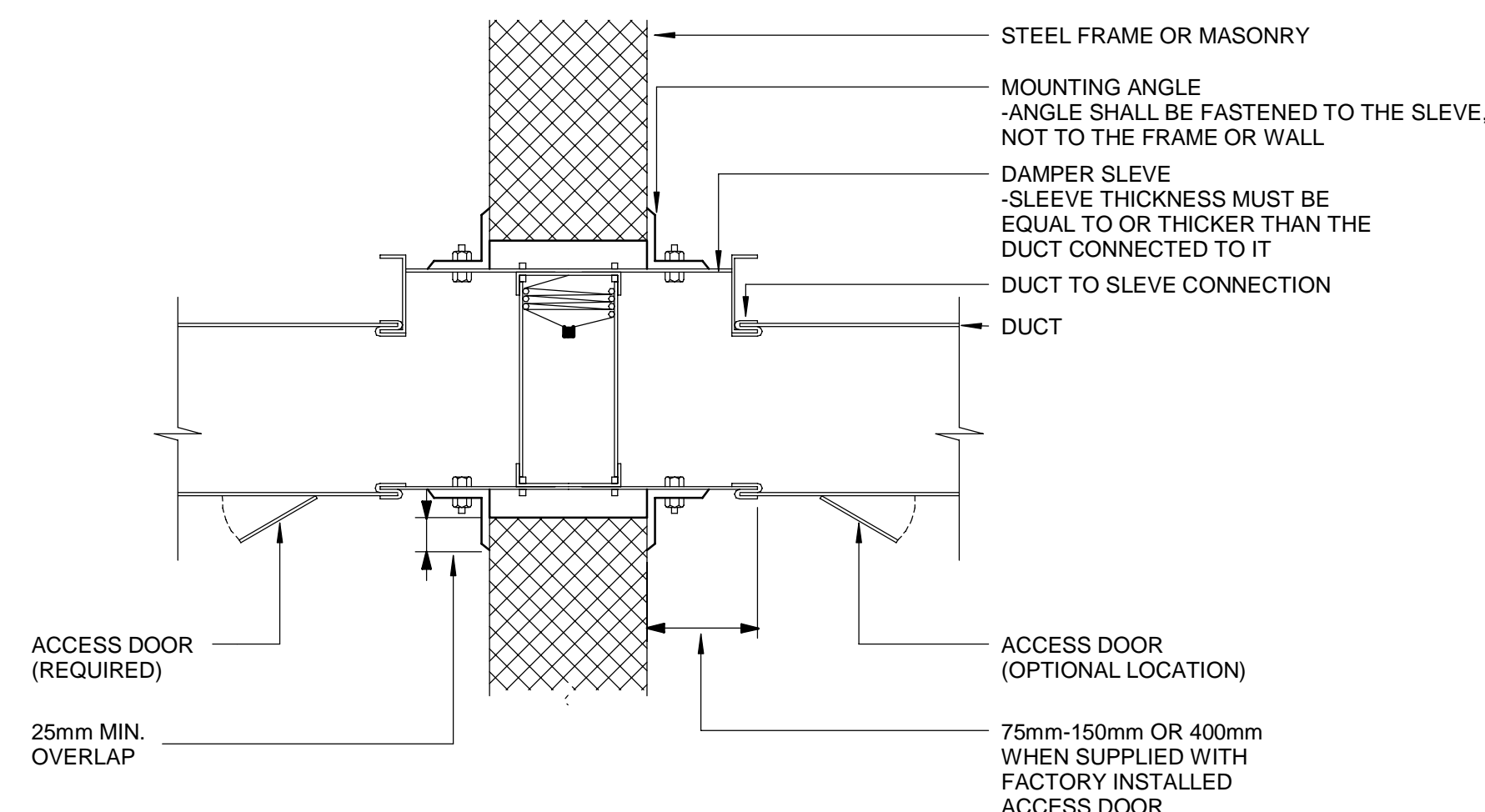


FAN COIL UNIT C/W FILTER

SCALE: 1 : 100



CONDENSATE DRAIN



FIRE DAMPER INSTALLATION IN MASONRY OR CONCRETE WALLS

SCALE: 1 : 100

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.



AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

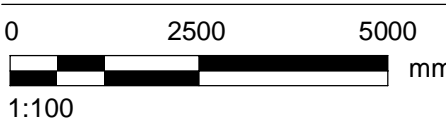
DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

B	14/02/2024	DETAILED DESIGN
A	07/02/2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION



SCALE 1:100 @A1



SHEET TITLE

MECHANICAL SERVICES  
BASEMENT  
EXISTING HVAC LAYOUT

PROJECT NUMBER

60716207

DRAWING NUMBER

DRG-ME-2000

REVISION

B

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.

2x EXISTING AC OUTDOOR  
UNITS TO REMAIN.  
RE-WIRE BOTH UNITS FROM  
NEW MSSB-1

EXISTING REFRIGERATION  
REISER PIPES ALONG WALL

OFFICE

TRAINING ROOM

HWC





AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

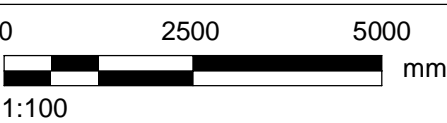
DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	14/02/2024	DETAILED DESIGN
A	07/02/2024	DETAILED DESIGN



SCALE 1:100 @A1



SHEET TITLE

MECHANICAL SERVICES  
GROUND FLOOR  
EXISTING HVAC LAYOUT

PROJECT NUMBER

60716207

DRAWING NUMBER

DRG-ME-2010

REVISION

B

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.

EXISTING REFRIGERATION  
RISER PIPES FROM LOWER  
LEVEL

EXISTING AC INDOOR  
UNIT TO REMAIN

EXISTING REFRIGERATION  
PIPE RUNS IN CEILING SPACE  
(INDICATIVE ONLY, TO BE  
CONFIRMED ON SITE)

EXISTING AC INDOOR UNIT TO  
BE DECOMMISSIONED AND  
HANDLED OVER TO OWNER FOR  
RE-USE (NEW LOCATION TO BE  
CONFIRMED)

DEMOLISH EXISTING GAS PIPE  
RUNS BETWEEN FLOOR JOISTS  
(RETICULATION TO BE  
CONFIRMED ON SITE)

EXISTING GAS METER TO BE  
DISCONNECTED

EXISTING UNDERGROUND GAS PIPE

EXISTING GAS INCOMING MAIN

OFFICE

KITCHEN

EXISTING GATHERING  
SPACE

STORE

EXISTING CHURCH SPACE  
TO BE ALTERED

DEMOLISH EXISTING FLOOR  
MOUNTED GAS HEATER

1

2

3

4

5

6

7

8

9



AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

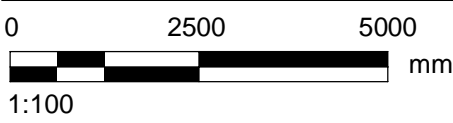
DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	14/02/2024	DETAILED DESIGN
B	07/02/2024	DETAILED DESIGN
A	29/09/2023	DEVELOPED DESIGN



SCALE 1:100 @A1



SHEET TITLE

MECHANICAL SERVICES

BASEMENT  
HVAC ZONING LAYOUT

PROJECT NUMBER

60716207

DRAWING NUMBER

DRG-ME-2100

REVISION

C

REFERENCE NOTES:

1. NATURALLY VENTILATED VIA OPENABLE WINDOWS. OPERABLE WINDOW TO BE A MIN. 5% OF THE NET FLOOR AREA AND BE ABLE TO BE FIXED OPEN.

AIR CONDITIONING ZONING

- ZONE 1 (MULTI-SPLIT) AC-1-1/2
- ZONE 2 (MULTI-SPLIT) AC-2-1/2/3
- ZONE 3 (SINGLE-SPLIT) AC-3
- ZONE 7 (SINGLE-SPLIT) AC-7

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.



PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

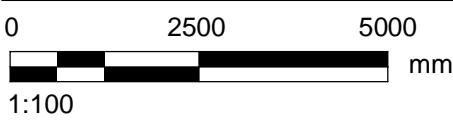
DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

C	14/02/2024	DETAILED DESIGN
B	07/02/2024	DETAILED DESIGN
A	29/09/2023	DEVELOPED DESIGN
I/R	DATE	DESCRIPTION



SCALE 1:100 @A1



SHEET TITLE

MECHANICAL SERVICES  
GROUND FLOOR  
HVAC ZONING LAYOUT

PROJECT NUMBER

60716207

DRAWING NUMBER

DRG-ME-2110

REVISION

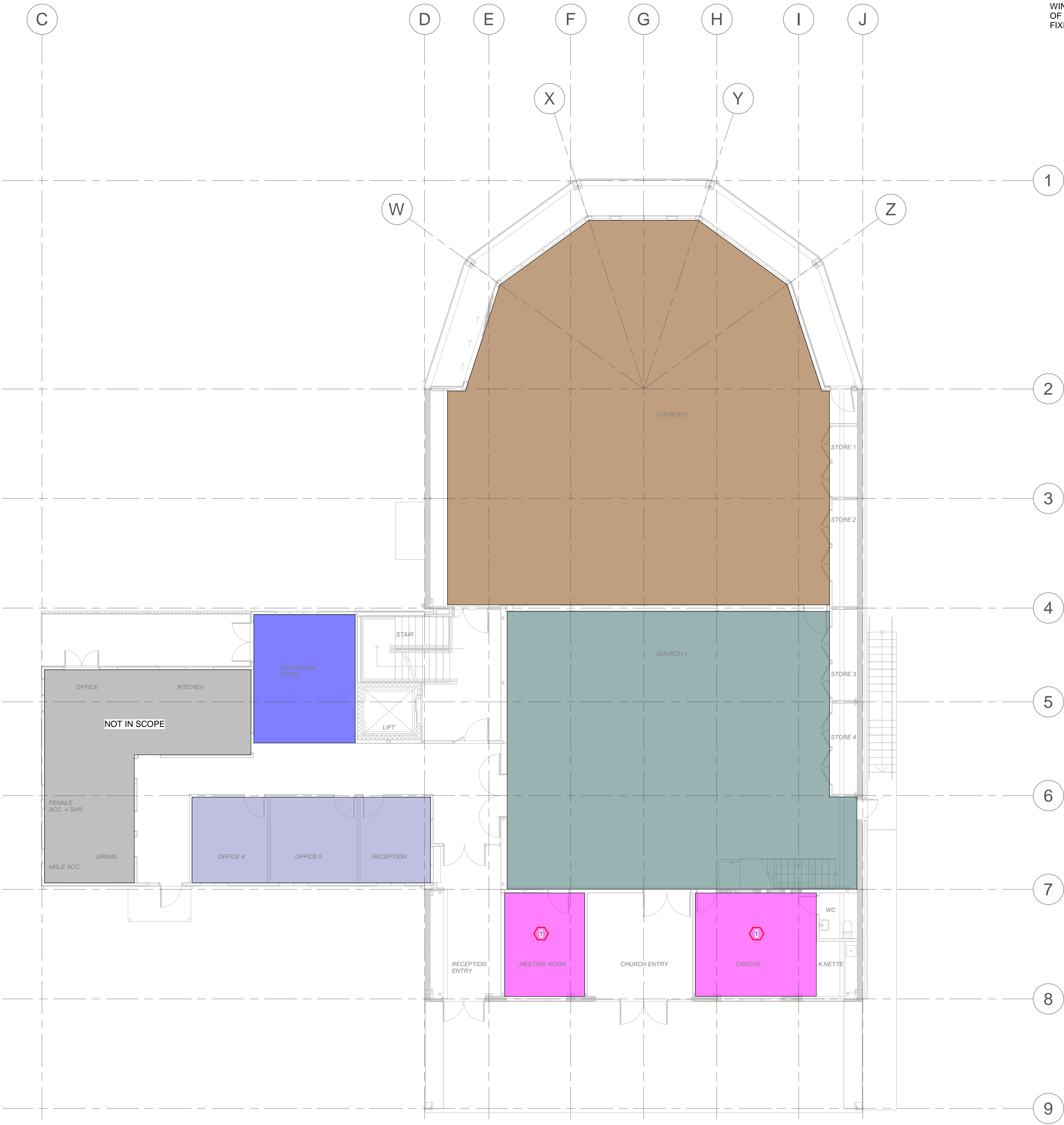
C

REFERENCE NOTES:

- NATURALLY VENTILATED VIA OPENABLE WINDOWS. OPERABLE WINDOW TO BE A MIN. 5% OF THE NET FLOOR AREA AND BE ABLE TO BE FIXED OPEN.

AIR CONDITIONING ZONING

- ZONE 4 (MULTI-SPLIT) AC-4-1/2
- ZONE 5 (DUCTED-SPLIT) AC-5
- ZONE 6 (HI-WALL SPLIT) AC-6
- ZONE 8 (PACKAGED UNIT) PAC-1
- ZONE 9 (PACKAGED UNIT) PAC-2





AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT  
ST JOHNS CHURCH



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

C	14/02/2024	DETAILED DESIGN
B	07/02/2024	DETAILED DESIGN
A	29/09/2023	DEVELOPED DESIGN
I/R	DATE	DESCRIPTION



SCALE 1:100 @A1



SHEET TITLE

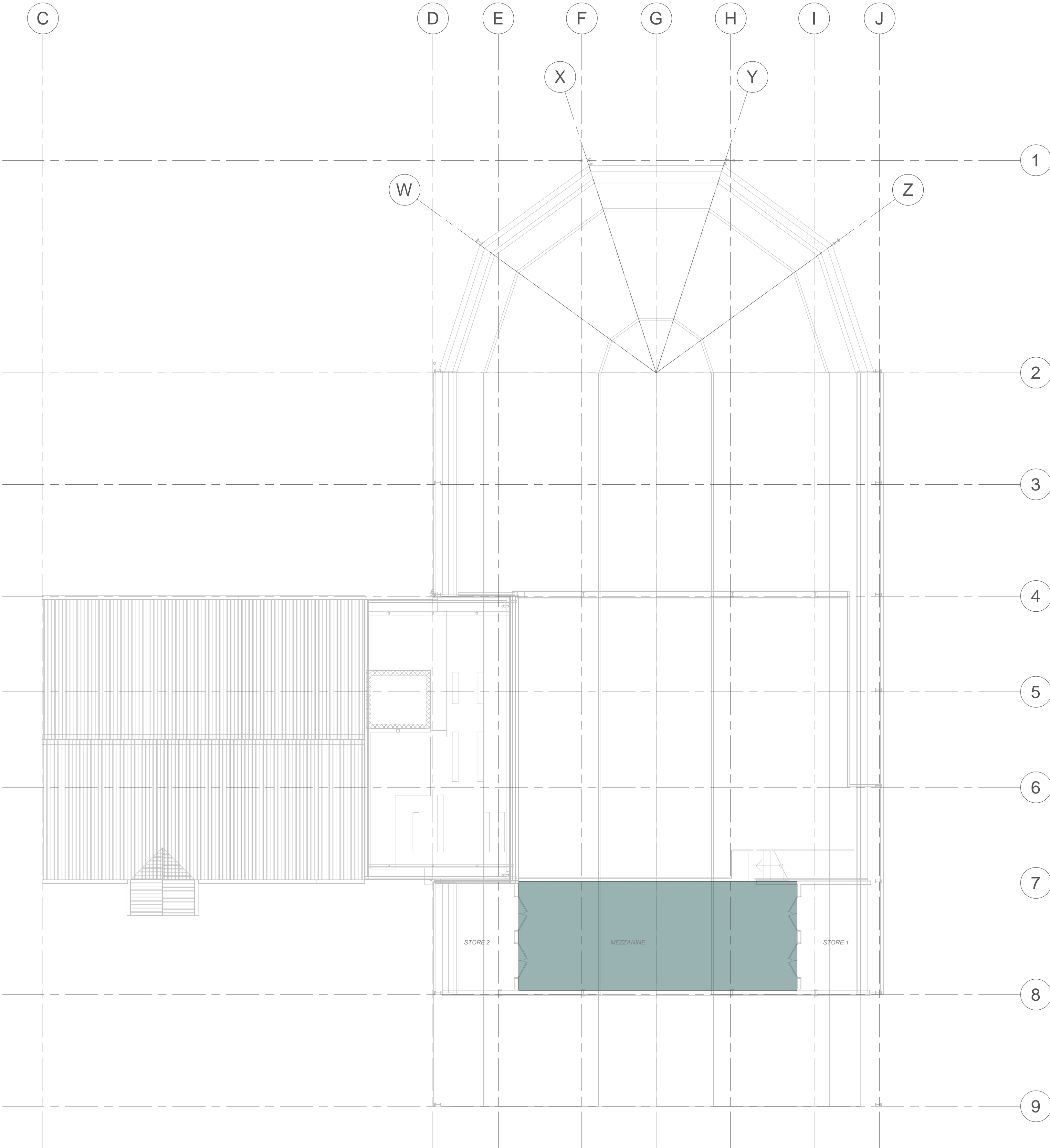
MECHANICAL SERVICES  
MEZZANINE  
HVAC ZONING LAYOUT

PROJECT NUMBER

60716207

DRAWING NUMBER REVISION

DRG-ME-2120 C



This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.





AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

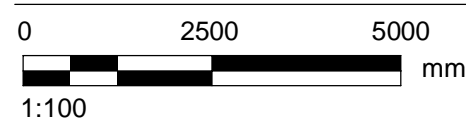
DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

I/R	DATE	DESCRIPTION
D	24/04/2024	DETAILED DESIGN
C	14/02/2024	DETAILED DESIGN
B	07/02/2024	DETAILED DESIGN
A	29/09/2023	DEVELOPED DESIGN



SCALE 1:100 @A1



SHEET TITLE

MECHANICAL SERVICES  
BASEMENT  
DUCTWORK LAYOUT

PROJECT NUMBER

60716207

DRAWING NUMBER

DRG-ME-2200

REVISION

D

REFERENCE NOTES:

1. MINIMUM 1.5M OF FLEXIBLE DUCT
2. MINIMUM 2M OF FLEXIBLE DUCT
3. MINIMUM 2M OF R2.0 INTERNALLY LINED DUCT
4. PROVIDE TEMPERATURE SENSOR FOR DUCTED HEATER AT DOWNSTREAM OR ACCORDING TO MANUFACTURES INSTRUCTION

ISO A1 594mm x 841mm

Last Saved: 24/04/2024 3:53:16 PM  
Filename: Autodesk Docs://BP-APAC (NZL) 60716207-St Johns Church/60716207\_ST Johns Church\_MEP\_2022.rvt

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.



AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT  
ST JOHNS CHURCH



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

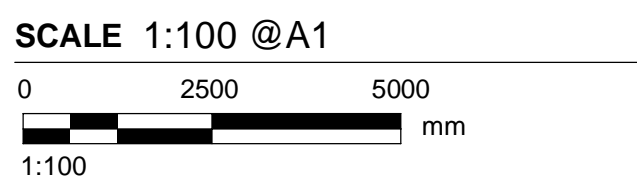
DETAILED DESIGN

PROJECT TEAM INITIALS

DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

I/R	DATE	DESCRIPTION
C	14/02/2024	DETAILED DESIGN
B	07/02/2024	DETAILED DESIGN
A	29/09/2023	DEVELOPED DESIGN



SHEET TITLE  
MECHANICAL SERVICES  
GROUND FLOOR  
DUCTWORK LAYOUT

PROJECT NUMBER  
60716207  
DRAWING NUMBER  
DRG-ME-2210  
REVISION  
C

REFERENCE NOTES:

1. PROVIDE TEMPERATURE SENSOR FOR DUCTED HEATER AT DOWNSTREAM OR ACCORDING TO MANUFACTURES INSTRUCTION

DH-3  
OAF-3  
F3 G4 (PM10-50%)  
FILTER

AC-5  
REFER TO ARCHITECTURAL  
DETAILS AND REQUIREMENTS  
FOR WALL COWL AND  
LOUVRE FINISHES.  
TEF-3

TEF-4  
INDOOR DUCTED UNIT IN  
CEILING SPACE  
DUCTWORK RUN ALONG BEAM AT  
HIGH LEVEL  
1M ACOUSTIC LINED 200x200

TEF-2  
TEF-2 AND DUCTWORK IN  
BULKHEAD ABOVE BENCH

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.





AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT  
ST JOHNS CHURCH

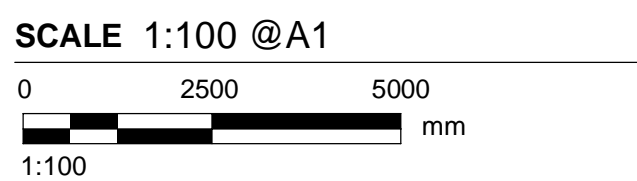


THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

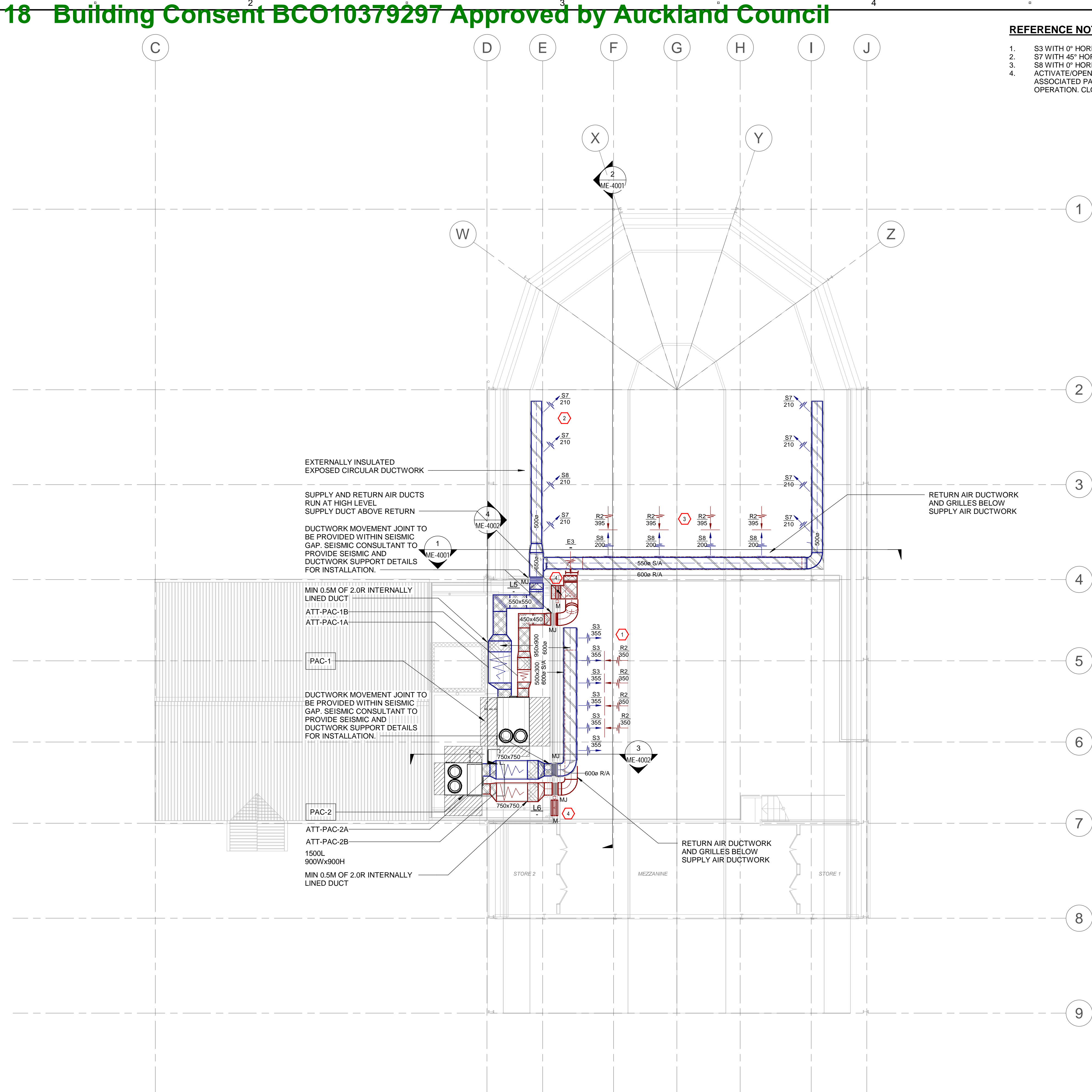
PROJECT TEAM INITIALS	
DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION		
C	14/02/2024	DETAILED DESIGN
B	07/02/2024	DETAILED DESIGN
A	29/09/2023	DEVELOPED DESIGN
I/R	DATE	DESCRIPTION



SHEET TITLE  
MECHANICAL SERVICES  
MEZZANINE  
DUCTWORK LAYOUT

PROJECT NUMBER  
60716207  
DRAWING NUMBER  
DRG-ME-2220  
REVISION  
C





AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

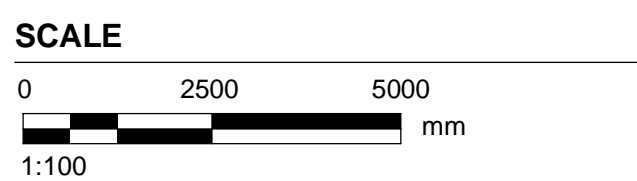
PROJECT  
ST JOHNS CHURCH



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

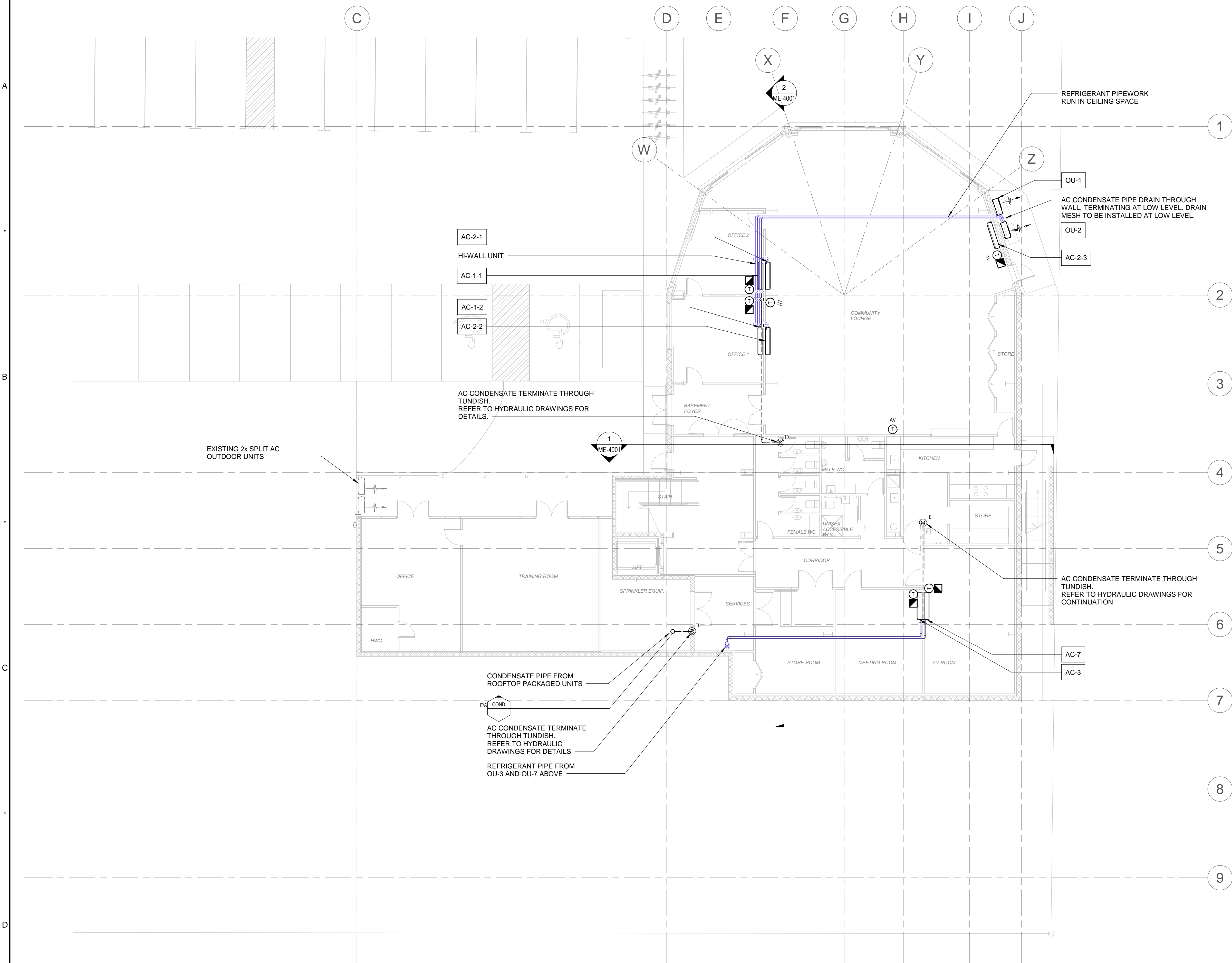
DETAILED DESIGN

PROJECT TEAM INITIALS		
DRAWN BY		ZC
DESIGNED BY		JY
CHECKED BY		HH
APPROVED BY		HH
ISSUE/REVISION		
A	14/02/2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION



SHEET TITLE  
MECHANICAL SERVICES  
BASEMENT  
PIPEWORK LAYOUT

PROJECT NUMBER  
60716207  
DRAWING NUMBER  
DRG-ME-2300  
REVISION  
A





AECOM

AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT  
ST JOHNS CHURCH

CLIENT

creative intentions

Project Development  
Design to Completion

THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS		
DRAWN BY	ZC	
DESIGNED BY	JY	
CHECKED BY	HH	
APPROVED BY	HH	
ISSUE/REVISION		
A	14/02/2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION



SCALE

025005000

mm

1:100

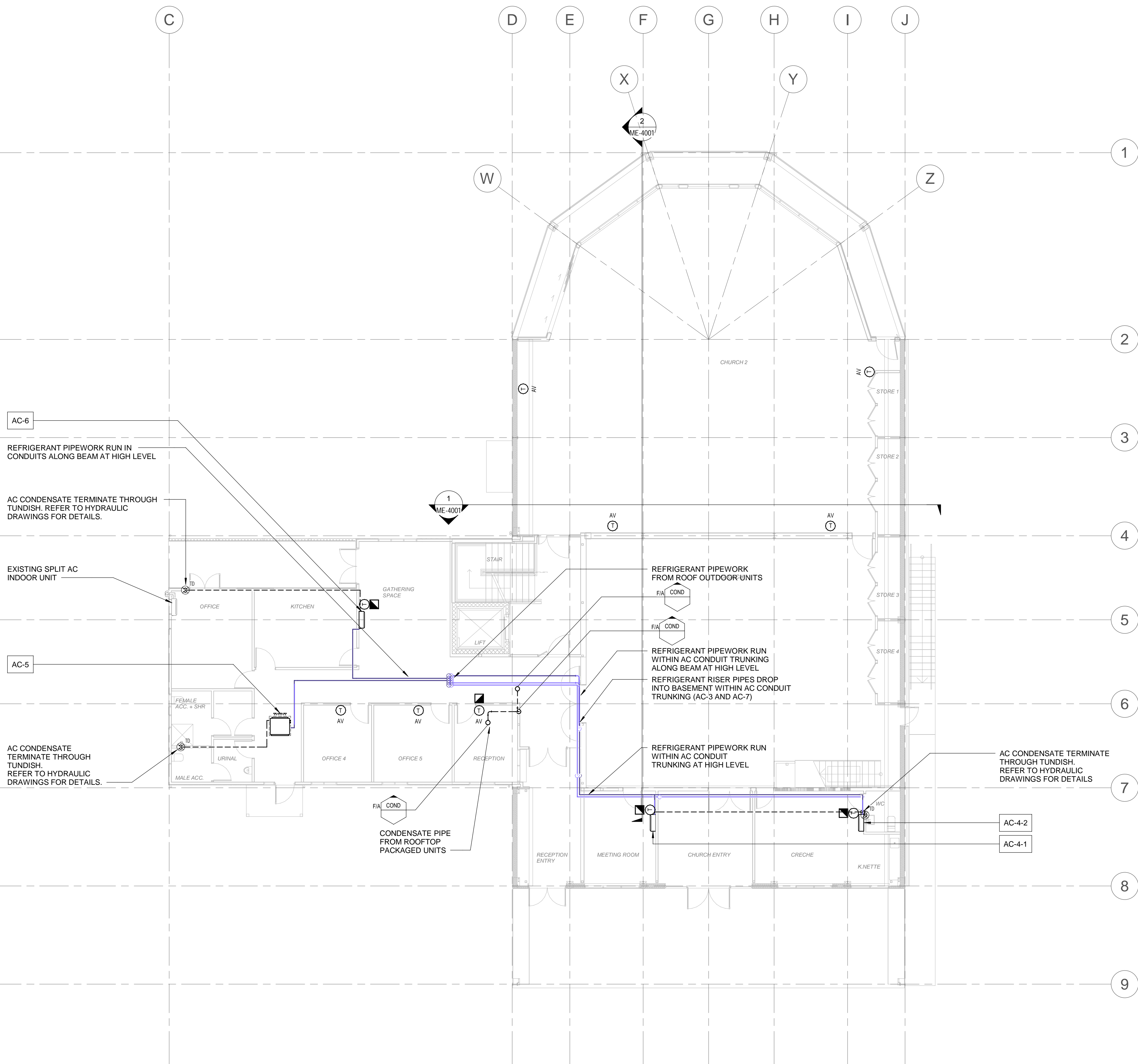
SHEET TITLE

MECHANICAL SERVICES  
GROUND FLOOR  
PIPEWORK LAYOUT

PROJECT NUMBER  
60716207

DRAWING NUMBER  
DRG-ME-2310

REVISION  
A





AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

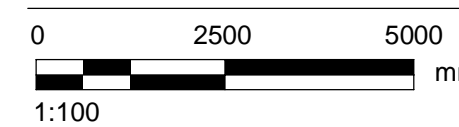
DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

A	14/02/2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION



SCALE



SHEET TITLE

MECHANICAL SERVICES  
MEZZANINE  
PIPEWORK LAYOUT

PROJECT NUMBER

60716207

DRAWING NUMBER

DRG-ME-2320

REVISION

A

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.

ISO A1 594mm x 841mm

A

B

C

D

Last Saved: 24/04/2024 1:51:32 PM  
Filename: Autodesk Docs://BP-4PAC (NZL) 60716207-St Johns Church/60716207\_ST Johns Church\_MEP\_2022.rvt





AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	14/02/2024	DETAILED DESIGN
A	07/02/2024	DETAILED DESIGN



SCALE 1:50 @A1



SHEET TITLE

MECHANICAL SERVICES  
SECTION  
SHEET 1 OF 2

PROJECT NUMBER

60716207

DRAWING NUMBER

DRG-ME-4001

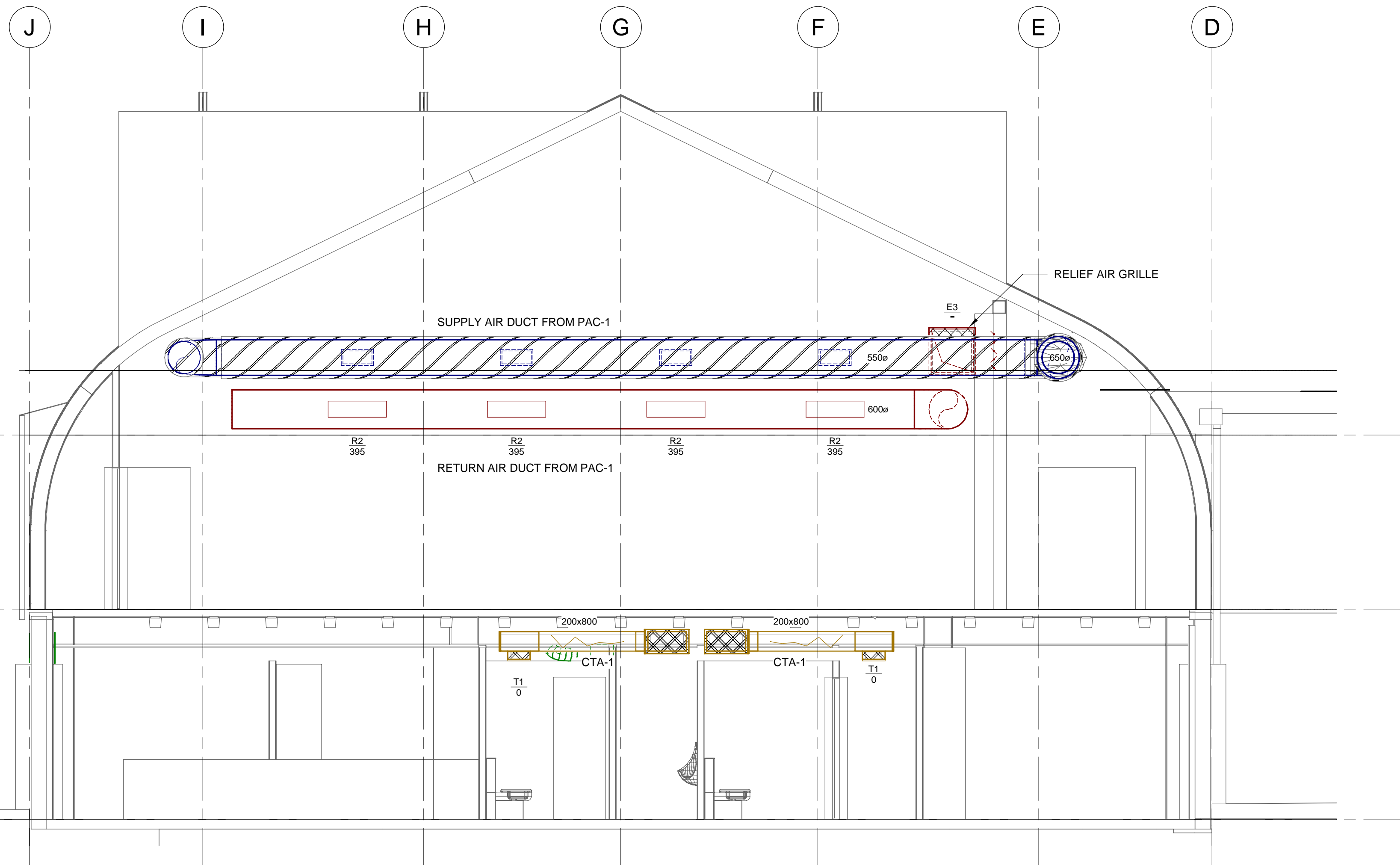
REVISION

B

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.

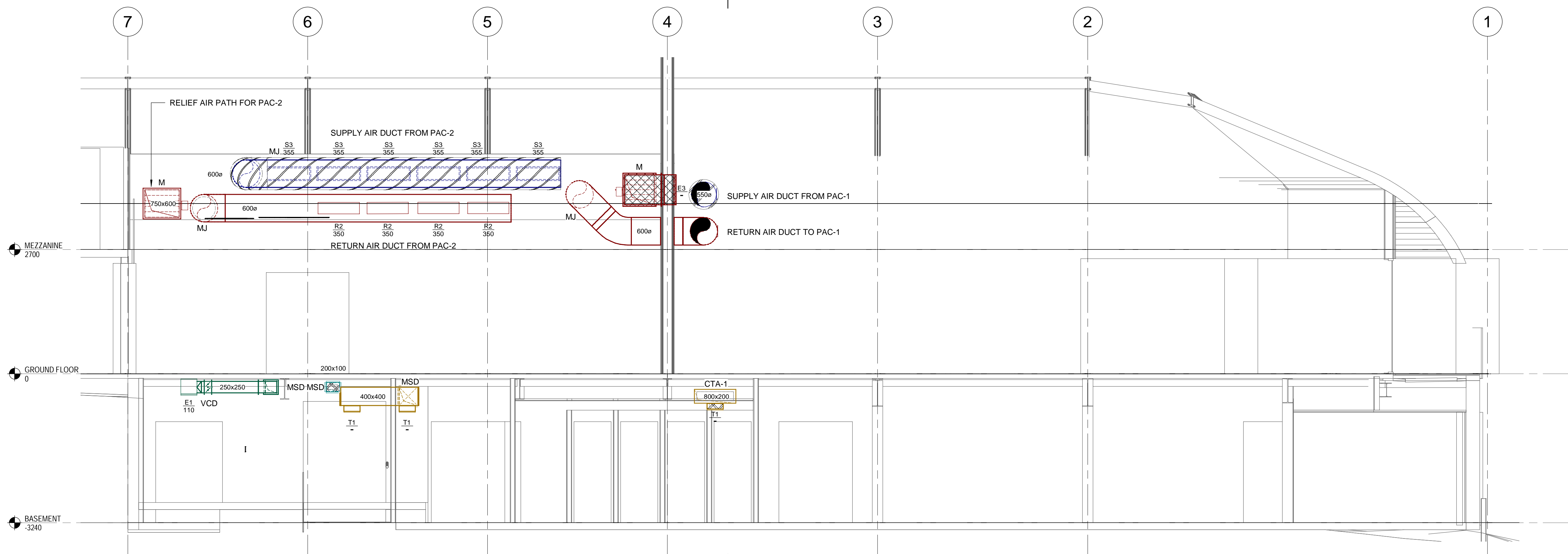
ISO A1 594mm x 841mm

Last Saved: 24/04/2024 1:51:39 PM  
Filename: Autodesk Docs\BP-APAC (NZL) 60716207-St Johns Church\MEP\_2022.rvt



1 SECTION 1

ME-2200 SCALE: 1 : 50



2 SECTION 2

ME-2200 SCALE: 1 : 50



AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

A	14/02/2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION



SCALE



SHEET TITLE

MECHANICAL SERVICES  
SECTION  
SHEET 2 OF 2

PROJECT NUMBER

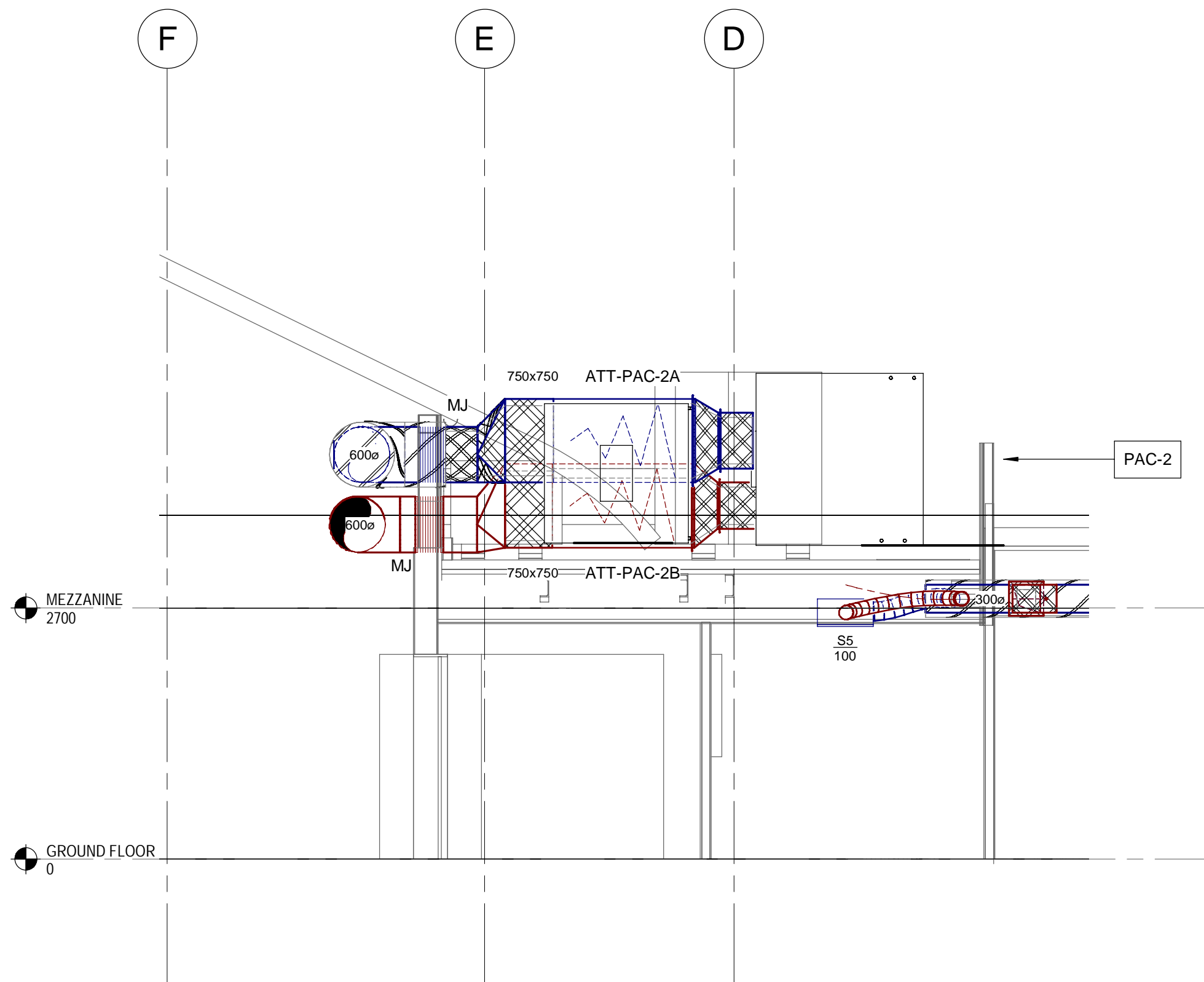
60716207

DRAWING NUMBER

DRG-ME-4002

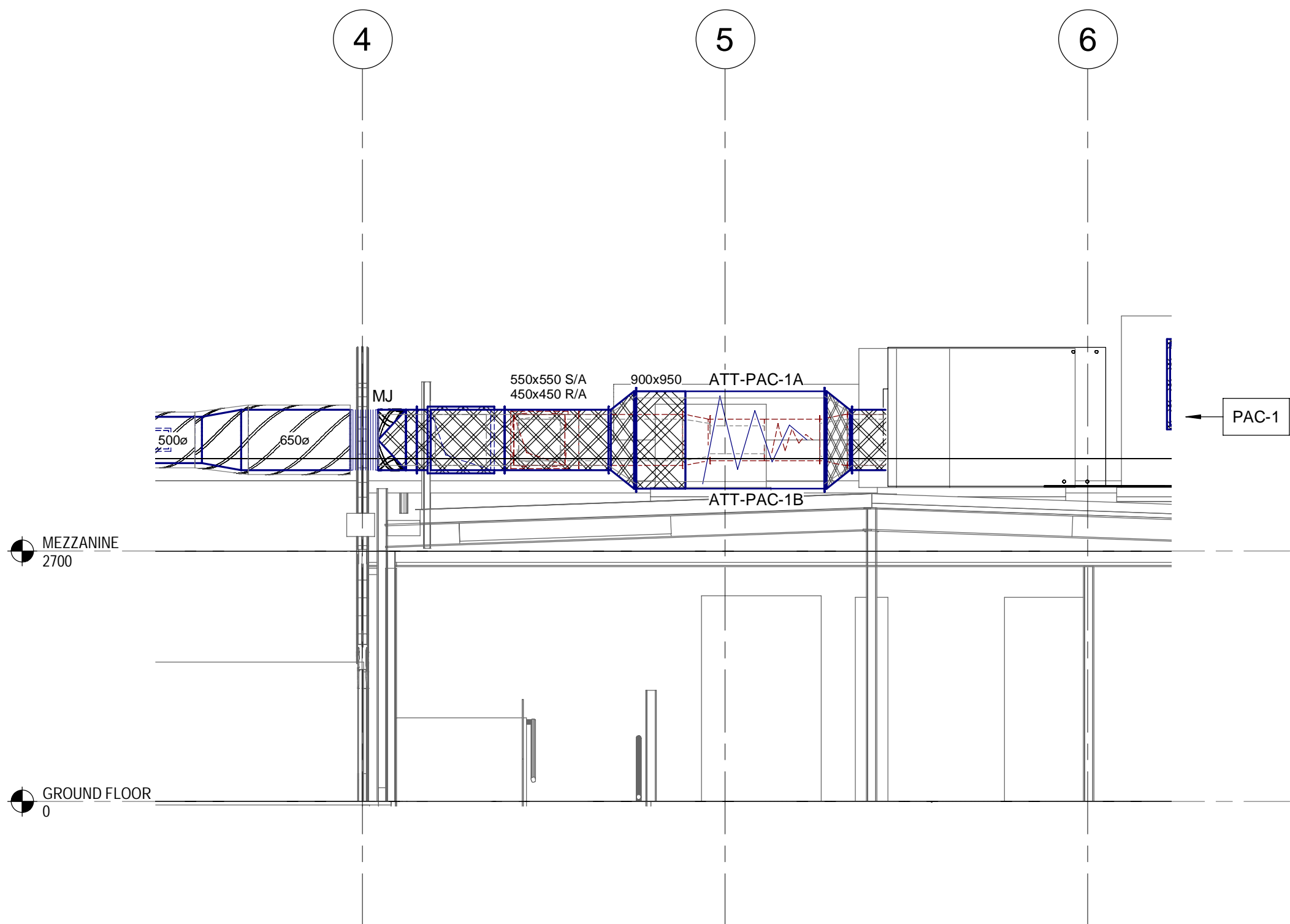
REVISION

A



3 SECTION 3

ME-2220 SCALE: 1 : 50



4 SECTION 4

ME-2220 SCALE: 1 : 50



AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT

ST JOHNS CHURCH



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

C	24/04/2024	DETAILED DESIGN
B	14/02/2024	DETAILED DESIGN
A	07/02/2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION



SCALE NTS @A1

SHEET TITLE

MECHANICAL SERVICES  
EQUIPMENT SCHEDULE  
SHEET 1 OF 2

PROJECT NUMBER

60716207

DRAWING NUMBER

DRG-ME-7001

REVISION

C

AHU SCHEDULE

REFERENCE	AREA SERVED	AIR SYSTEM TYPE	OUTDOOR AIRFLOW L/S	SUPPLY AIRFLOW L/S	EXTERNAL STATIC PRESSURE Pa	DESIGNED CAPACITY			COOLING EAT DB/WB	COOLING LAT DB/WB	HEATING EAT DB	HEATING LAT DB	SPL @3M	ELECTRICAL			DIMENSIONS			WEIGHT KG	COMMENTS
						COOLING kW (TOTAL)	COOLING kW (SENS)	HEAT kW						PHASES	POWER kW	MSSB	L mm	W mm	H mm		
PAC-1	COMMUNITY HALL	MIX AIR	900	2,480	220	39.2	26.5	23.8	24.2/19.4	15.3/14.8	15.3	23.3	64	3	18.1	MSSB-1	2330	1530	1500	652	TEMPERZONE OPA OR EQUIVALENT. R32 REFRIGERANT. PROVIDE WITH EC FAN, G4 FILTER AND OUTDOOR AIR COWL
PAC-2	CHURCH	MIX AIR	730	2,130	150	33.2	23.3	19.5	24.4/19.3	15.3/14.8	15.7	23.4	62	3	14.7	MSSB-1	1795	1530	1850	604	TEMPERZONE OPA OR EQUIVALENT. R32 REFRIGERANT. PROVIDE WITH EC FAN, G4 FILTER AND OUTDOOR AIR COWL

NOTE:

- 1.THE CONTRACTOR SHALL CONFIRM FINAL ESP AND SUITABILITY OF SPECIFIED UNIT IN ACCORDANCE WITH FINAL DUCTWORK AND FITTING INSTALLATION.
2. THE CONTRACTOR SHALL PROVIDE CORROSION TREATMENT FOR ROOFTOP PACKAGED UNITS.

MULTI SPLIT SYSTEM SCHEDULE

MULTI SPLIT SYSTEM SCHEDULE																				
REFERENCE	AREA	OUTDOOR REFERENCE	TYPE	REFRIGERANT	CAPACITY						WEIGHT	SPL		DIMENSIONS			ELECTRICAL			COMMENTS
					TOTAL (kW)	SENS (kW)	HEAT (kW)	FLOW (l/s)	OA FLOW (l/s)	ESP (Pa)		dB(A)	@ (m)	W (mm)	H (mm)	D (mm)	PHASES	POWER (kW)	MSSB	
INDOOR UNITS																				
AC-1-1	BASEMENT OFFICE	OU-1	HI-WALL	R32	2.3	1.8	0.9	-	-	-		31	3	890	300	200	-	-	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT
AC-1-2	BASEMENT OFFICE	OU-1	HI-WALL	R32	2.3	1.9	1.0	-	-	-		31	3	890	300	200	-	-	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT
AC-2-1	COMMUNITY LOUNGE	OU-2	HI-WALL	R32	4.5	3.6	3.3	-	-	-		39	3	890	300	200	-	-	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT
AC-2-2	COMMUNITY LOUNGE	OU-2	HI-WALL	R32	4.5	3.6	3.3	-	-	-		39	3	890	300	200	-	-	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT
AC-2-3	COMMUNITY LOUNGE	OU-2	HI-WALL	R32	4.5	3.6	3.3	-	-	-		39	3	890	300	200	-	-	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT
AC-4-1	GF MEETING	OU-4	HI-WALL	R32	1.8	1.3	0.9	-	-	-		31	3	890	300	200	-	-	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT
AC-4-2	GF CRECHE	OU-4	HI-WALL	R32	3.1	2.3	1.7	-	-	-		35	3	890	300	200	-	-	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT
OUTDOOR UNITS																				
OU-1	BASEMENT	-	SIDE DISCHARGE	R32	4.6	3.7	1.9	-	-	-	59	54	3	840	710	330	1	1.8	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT
OU-2	BASEMENT	-	SIDE DISCHARGE	R32	13.5	10.7	6.8	-	-	-	87	57	3	950	1050	330	1	3.3	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT
OU-4	GROUND FLOOR	-	SIDE DISCHARGE	R32	4.9	3.6	2.6	-	-	-	59	54	3	840	710	330	1	1.8	MSSB-1	MITSUBISHI ELECTRIC OR EQUIVALENT

NOTE:

1. THE CONTRACTOR SHALL CALCULATE FINAL REFRIGERANT VOLUME AND PROVIDE LEAK DETECTION ALARM SYSTEMS AS REQUIRED FOR COMPLIANCE WITH AS/NZS 5149.1-2016
2. THE CONTRACTOR SHALL CALCULATE FINAL EXTERNAL STATIC PRESSURE AND CONFIRM SPECIFIED UNIT IS ADEQUATE PRIOR TO PROCUREMENT
3. THE CONTRACTOR SHALL CONFIRM FINAL NOISE REQUIREMENTS OF EXTERNAL PLANT IS WITHIN SPECIFIED RANGE PRIOR TO PROCUREMENT
4. ALL INDOOR AND OUTDOOR UNITS SHALL BE PROVIDED WITH ANTI VIBRATION MOUNTS
5. ALL UNITS SHALL BE SELECTED TO OPERATE ON FULL LOAD AT AMBIENT DESIGN CRITERIA GIVEN IN THE SPECIFICATION WHILE CONSIDERING PIPE LENGTH

SINGLE SPLIT SYSTEM SCHEDULE

REFERENCE	AREA	SYSTEM	TYPE	REFRIGERANT	CAPACITY						DIMENSIONS			SPL		ELECTRICAL			WEIGHT (kg)	COMMENTS
					TOTAL (kW)	SENS (kW)	HEAT (kW)	FLOW (l/s)	OA FLOW (l/s)	ESP (Pa)	W (mm)	H (mm)	D (mm)	dB(A)	@ (m)	PHASES	POWER (kW)	MSSB		
AC-3 OU-3	BASEMENT COMMUNITY MEETING	SINGLE SPLIT	HI-WALL	R32	1.6	1.1	0.5	-		-	923 800	305 714	250 285	38 53	3	1	1.43	MSSB-1	12 41	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT
AC-5 OU-5	GF OFFICES	SINGLE SPLIT	DUCTED	R32	4.3	3.2	3.1	300	90	100	900 840	250 880	732 330	32 51	3	1	1.85	MSSB-1	29 54	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE FILTER AND CONDENSATE PUMP FOR INDOOR UNIT
AC-6 OU-6	GF GATHERING SPACE	SINGLE SPLIT	HI-WALL	R32	5.8	4.7	3.1	-		-	1170 950	365 943	295 330	42 51	3	1	2.12	MSSB-1	21 70	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT
AC-7 OU-7	BASEMENT AV ROOM	SINGLE SPLIT	HI-WALL	R32	4.1	3.4	0.9	-		-	923 800	305 714	250 285	38 53	3	1	1.43	MSSB-1	12 41	MITSUBISHI ELECTRIC OR EQUIVALENT. PROVIDE CONDENSATE PUMP FOR INDOOR UNIT

NOTE

1. THE CONTRACTOR SHALL CALCULATE FINAL REFRIGERANT VOLUME AND PROVIDE LEAK DETECTION ALARM STSYEMS AS REQUIRED FOR COMPLIANCE WITH NZS5149
2. THE CONTRACTOR SHALL CALCULATE FINAL EXTERNAL STATIC PRESSURE AND CONFIRM SPECIFIED UNIT IS ADEQUATE PRIOR TO PROCUREMENT
3. THE CONTRACTOR SHALL CONFIRM FINAL NOISE REQUIREMENTS OF EXTERNAL PLANT IS WITHIN SPECIFIED RANGE PRIOR TO PROCUREMENT
4. ALL INDOOR AND OUTDOOR UNITS SHALL BE PROVIDED WITH ANTI VIBRATION MOUNTS
5. ALL OUTDOOR UNITS TO BE EITHER FLOOR STANDING ON CONCRETE PLINTH PROVIDED BY BUILDER OR STACKED ABOVE OTHER OUTDOOR UNITS

FAN SCHEDULE

MARK	TYPE	AIRFLOW (L/s)	EXTERNAL STATIC PRESSURE (Pa)	POWER PHASES	POWER kW	MSSB	SOUND PRESSURE LEVEL (dBA @ 3m)	COMMENT
OAF-1	MIXED-FLOW	350	160	1	0.3	MSSB-1	50	FANTECH PUEEC OR EQUIVALENT
OAF-2	MIXED-FLOW	260	200	1	0.3	MSSB-1	40	FANTECH PUEEC OR EQUIVALENT
OAF-3	MIXED-FLOW	100	150	1	0.1	MSSB-1	40	FANTECH TD OR EQUIVALENT
TEF-1	MIXED-FLOW	325	180	1	0.3	MSSB-1	51	FANTECH PUEEC OR EQUIVALENT
TEF-2	IN-LINE	40	60	1	0.02	MSSB-1	29	FANTECH TD OR EQUIVALENT
TEF-3	IN-LINE	80	50	1	0.1	MSSB-1	38	FANTECH TD OR EQUIVALENT
TEF-4	IN-LINE	60	50	1	0.1	MSSB-1	38	FANTECH TD OR EQUIVALENT
GEF-1	IN-LINE	110	150	1	0.1	MSSB-1	40	FANTECH TD OR EQUIVALENT
GEF-2	IN-LINE	155	150	1	0.1	MSSB-1	40	FANTECH TD OR EQUIVALENT
GEF-3	IN-LINE	175	120	1	0.1	MSSB-1	44	FANTECH TD OR EQUIVALENT

NOTE:

1. THE CONTRACTOR SHALL CONFIRM FINAL FAN SELECTION WITH AIR FLOW AND STATIC RESISTANCE OF FINAL DUCTWORK INSTALLATION, PRIOR TO PROCUREMENT.
2. ALL DUCT MOUNTED FANS SHALL BE PROVIDED WITH ANTI VIBRATION MOUNTS AND FLEXIBLE CONNECTIONS.
3. THE CONTRACTOR SHALL CONFIRM NOISE LEVELS ARE WITHIN THE SPECIFIED RANGE PRIOR TO PROCUREMENT
4. ALL FANS SHALL BE SUPPLIED WITH SPEED CONTROLLERS FOR SPEED SETTING DURING COMMISSIONING.

ELECTRIC DUCT HEATERS

REF	SYSTEM SERVED	TYPE	DUTY				ELECTRICAL				DIMENSIONS		COMMENTS
			HEAT (kW)	AIR FLOW (L/S)	AIR ON (°C)	AIR OFF (°C)	PHASES	POWER (kW)	RC (A)	MSSB	DIA MM	L MM	
DH-1	OAF-1	DUCT HEATER	5.2	350	5.7	18	3	6.0	8.6	MSSB-1	300	800	3 STAGE RELAY CONTROL.
DH-2	OAF-2	DUCT HEATER	3.8	260	5.7	18	3	4.5	6.4	MSSB-1	300	800	3 STAGE RELAY CONTROL.
DH-3	OAF-3	DUCT HEATER	1.5	100	5.7	18	3	1.5	2.1	MSSB-1	200	800	3 STAGE RELAY CONTROL.

NOTE:

1. DUCT HEATER INSTALLATION SHALL BE COMPLETE WITH SAFETY CUT OUT, THERMOSTAT AND REMOTE TEMPERATURE SENSOR
2. DUCT HEATER SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF AS/NZS 3102 & AS 1688.1 &2
3. DUCT HEATER SHALL BE INSTALLED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATION AND INSTRUCTIONS

GRILLE & LOUVRE SCHEDULE

REF	TYPE	MAX AIR FLOW RATE (l/s)	MAX STATIC PRESSURE (Pa)	NOISE (NC)	DIMENSIONS		COMMENT
					W (mm)	L/H (mm)	
S1	CEILING CIRCULAR	40	20	21	269	269	HOLYOAKES ECO-M-150 OR EQUIVALENT. SPIGOT Ø150
S2	DOUBLE DEFLECTION	100	2	-	300	200	HOLYOAKES DDL20 OR EQUIVALENT
S3	CURVED DOUBLE DEFLECTION	355	1	-	900	250	HOLYOAKES TLC-DDL20-0BD OR EQUIVALENT
S4	DOUBLE DEFLECTION	350	13	13	600	250	HOLYOAKES DDL20 OR EQUIVALENT
S5	SWIRL	100	6	13	600	600	HOLYOAKES CFPP OR EQUIVALENT. PROVIDE WITH CUSHION HEAD BOX AND Ø200 SPIGOT
S6	SWIRL	200	19	28	600	600	HOLYOAKES CFPP OR EQUIVALENT. PROVIDE WITH CUSHION HEAD BOX AND Ø300 SPIGOT
S7	CURVED DOUBLE DEFLECTION	210	7	11	450	200	HOLYOAKES TLC-DDL20-0BD OR EQUIVALENT
S8	CURVED DOUBLE DEFLECTION	200	4	15	350	200	HOLYOAKES TLC-DDL20-0BD OR EQUIVALENT
R1	EGG CRATE	70	5	-	200	200	HOLYOAKES EC-125 OR EQUIVALENT.
R2	CURVED SINGLE DEFLECTION	395	2	14	900	250	HOLYOAKES TLC-SDL20-0BD OR EQUIVALENT
R3	EGG CRATE	70	3	-	250	250	HOLYOAKES EC-125 OR EQUIVALENT. PROVIDE WITH CUSHION HEAD BOX AND Ø200 SPIGOT
E1	EGG CRATE	175	3	-	350	350	HOLYOAKES EC-125 OR EQUIVALENT. PROVIDE WITH CUSHION HEAD BOX AND Ø250 SPIGOT
E2	EGG CRATE	40	1	-	300	150	HOLYOAKES EC-125 OR EQUIVALENT. PROVIDE WITH CUSHION HEAD BOX AND Ø150 SPIGOT
E3	EGG CRATE	-	-	-	600	600	HOLYOAKES EC-125 OR EQUIVALENT
T1	EGG CRATE	175	3	-	350	350	HOLYOAKES EC-125 OR EQUIVALENT
T2	EGG CRATE	175	3	-	600	200	HOLYOAKES EC-125 OR EQUIVALENT
L1	WALL COWL	80	16	-	260	260	SPIGOT Ø150. REFER TO ARCH FOR COLOUR. PROVIDE WITH BACK DRAFT DAMPER FOR DISCHARGE.
L2	WALL COWL	175	27	-	260	260	SPIGOT Ø200. REFER TO ARCH FOR COLOUR. PROVIDE WITH BACK DRAFT DAMPER FOR DISCHARGE.
L3	WEATHER LOUVRE	350	15	-	750	400	PROVIDE WITH PLENUM AND G4 FILTER
L4	WEATHER LOUVRE	260	19	-	500	400	PROVIDE WITH PLENUM AND G4 FILTER
L5	WEATHER LOUVRE	-	-	-	600	600	
L6	WEATHER LOUVRE	-	-	-	750	600	

NOTE:

1. THE CONTRACTOR SHALL CONFIRM THE AIR VOLUME, STATIC PRESSURE AND NOISE LEVEL OF THE SELECTED GRILLE IS WITHIN THE SPECIFIED RANGE PRIOR TO PROCUREMENT
2. ALL GRILLES SHALL BE FACTORY POWDER COATED IN COLOUR TO ARCHITECTS SPECIFICATION.
3. THE CONTRACTOR SHALL CONFIRM FIXING DETAILS PRIOR TO PROCURMENT.
4. THE CONTRACTOR SHALL ARRANGE FOR SAMPLES OF THE GRILLE FOR CLIENT REVIEW.
5. ALL WEATHER LOUVRES SHALL BE SUPPLIED WITH INSECT SCREENS.
6. WHERE NO FACE SIZE IS INDICATED, FACE SIZE IS TO SUIT THE NECK SIZE OF THE DIFFUSER OR GRILLE.
7. ALL SUPPLY AIR DIFFUSERS TO BE PROVIDED WITH INSULATED CUSHION HEAD BOXES, SIZE TO SUIT THE FACE SIZE OF THE DIFFUSER.  
INSULATION R-VALUE TO MATCH THE VALUE OF THE CONNECTING DUCTWORK, AND BE NOT LESS THAN R 1.0 m2K/W





AECOM New Zealand Limited  
www.aecom.com

AECOM has prepared this document exclusively for the client and it shall not be used by any third party. The document along with the associated specification outlines the design intent of the MEP services and is not intended for construction purposes. The subcontractor shall submit workshop drawings for review. Any costs associated with corrective or abortive work which result from works proceeding without consultant acceptance of 'for construction' drawings shall be rectified at the subcontractors expense.

PROJECT

ST JOHNS CHURCH

CLIENT



THIS DRAWING IS TO BE  
PRINTED IN COLOUR

DETAILED DESIGN

PROJECT TEAM INITIALS

DRAWN BY	ZC
DESIGNED BY	JY
CHECKED BY	HH
APPROVED BY	HH

ISSUE/REVISION

B	14/02/2024	DETAILED DESIGN
A	07/02/2024	DETAILED DESIGN
I/R	DATE	DESCRIPTION



SCALE NTS @A1

SHEET TITLE

MECHANICAL SERVICES  
EQUIPMENT SCHEDULE  
SHEET 2 OF 2

PROJECT NUMBER

60716207

DRAWING NUMBER

DRG-ME-7002

REVISION

B

Cross talk attenuators		
Designation	-	CTA-1
Location	-	Basement WC
Type	-	L Shape
System	-	Transfer air
Air Flow	L/s	175
Pressure Drop	Pa	6
Length	mm	1500
Size	mm x mm	900x300
Insertion Loss (dB)	Octave Band Centre Frequency	63 Hz
		125 Hz
		250 Hz
		500 Hz
		1 kHz
		2 kHz
		4 kHz
		8 kHz
Comments	-	NCS or equal and approved

Filters				
Designation	-	F1	F2	F3
Type	-	Panel	Panel	Panel
Performance Rating to AS1324.1	-	G4	G4	G4
Performance Rating to ISO16890	-	ePM10 50%	ePM10 50%	ePM10 50%
System	-	OAF-1	OAF-2	OAF-3
Air Flow	L/s	350	260	100
Initial Pressure Drop	Pa	27	26	5
Size	mm x mm	600x400	500x400	600x300
Depth	mm	46	46	46
Comments	-	Camfil 30/30 or equal and approved	Camfil 30/30 or equal and approved	Camfil 30/30 or equal and approved

Duct attenuators					
Designation	-	ATT-PAC-1A	ATT-PAC-1B	ATT-PAC-2A	ATT-PAC-2B
Associated Plant	-	PAC-1	PAC-1	PAC-2	PAC-2
Type	-	Rectangular	Rectangular	Rectangular	Rectangular
System	-	Supply air	Return air	Supply air	Return air
Air Flow	L/s	2480	1580	2130	1400
Pressure Drop	Pa	40	25	40	17
Length	mm	1500	600	1500	1500
Size	mm x mm	1100x1050	650x450	900x900	900x900
Insertion Loss (dB)	Octave Band Centre Frequency	63 Hz	9	10	8
		125 Hz	19	19	16
		250 Hz	35	35	30
		500 Hz	49	48	47
		1 kHz	50	50	50
		2 kHz	50	50	50
		4 kHz	49	43	43
		8 kHz	42	32	31
Comments	-	NCS or equal and approved	NCS or equal and approved	NCS or equal and approved	NCS or equal and approved

MSSB-1 (Non-Essential)							
Equipment	Description	Absorbed Load kW	Phases	Starter	Switch	Comment	
PAC-1	AC Packaged Unit	18.10	3	VSD / EC	A/O/M	Duty	
PAC-2	AC Packaged Unit	14.70	3	VSD / EC	A/O/M	Duty	
OU-1	Heat pump	1.80	1	DOL	A/O	Duty	
OU-2	Heat pump	3.30	1	DOL	A/O	Duty	
OU-3	Heat pump	1.43	1	DOL	A/O	Duty	
OU-4	Heat pump	1.80	1	DOL	A/O	Duty	
OU-5	Heat pump	1.85	1	DOL	A/O	Duty	
OU-6	Heat pump	2.12	1	DOL	A/O	Duty	
OU-7	Heat pump	1.43	1	DOL	A/O	Duty	
OAF-1	Outdoor air fan	0.30	1	DOL	A/O/M	Duty	
OAF-2	Outdoor air fan	0.30	1	DOL	A/O/M	Duty	
OAF-3	Outdoor air fan	0.10	1	DOL	A/O/M	Duty	
TEF-1	Toilet extract fan	0.30	1	DOL	A/O/M	Duty	
TEF-2	Toilet extract fan	0.02	1	DOL	A/O/M	Duty	
TEF-3	Toilet extract fan	0.10	1	DOL	A/O/M	Duty	
TEF-4	Toilet extract fan	0.10	1	DOL	A/O/M	Duty	
GEF-1	General extract fan	0.10	1	DOL	A/O/M	Duty	
GEF-2	General extract fan	0.10	1	DOL	A/O/M	Duty	
GEF-3	General extract fan	0.10	1	DOL	A/O/M	Duty	
DH-1	Ducted heater	6.00	3	DOL	A/O/M	Duty	
DH-2	Ducted heater	4.50	3	DOL	A/O/M	Duty	
DH-3	Ducted heater	1.50	3	DOL	A/O/M	Duty	
	Controls	1.00	1	-	-	-	
Absorbed Load		61.05					
Connected Load		61.05					
Spare Capacity		18.32					
Location		Basement					
Classification		Non Essential					
Criticality		Non Essential					
Sub Main By		Electrical Contractor					
Sub Main From		Main Switch Board					
Comments							

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2008.