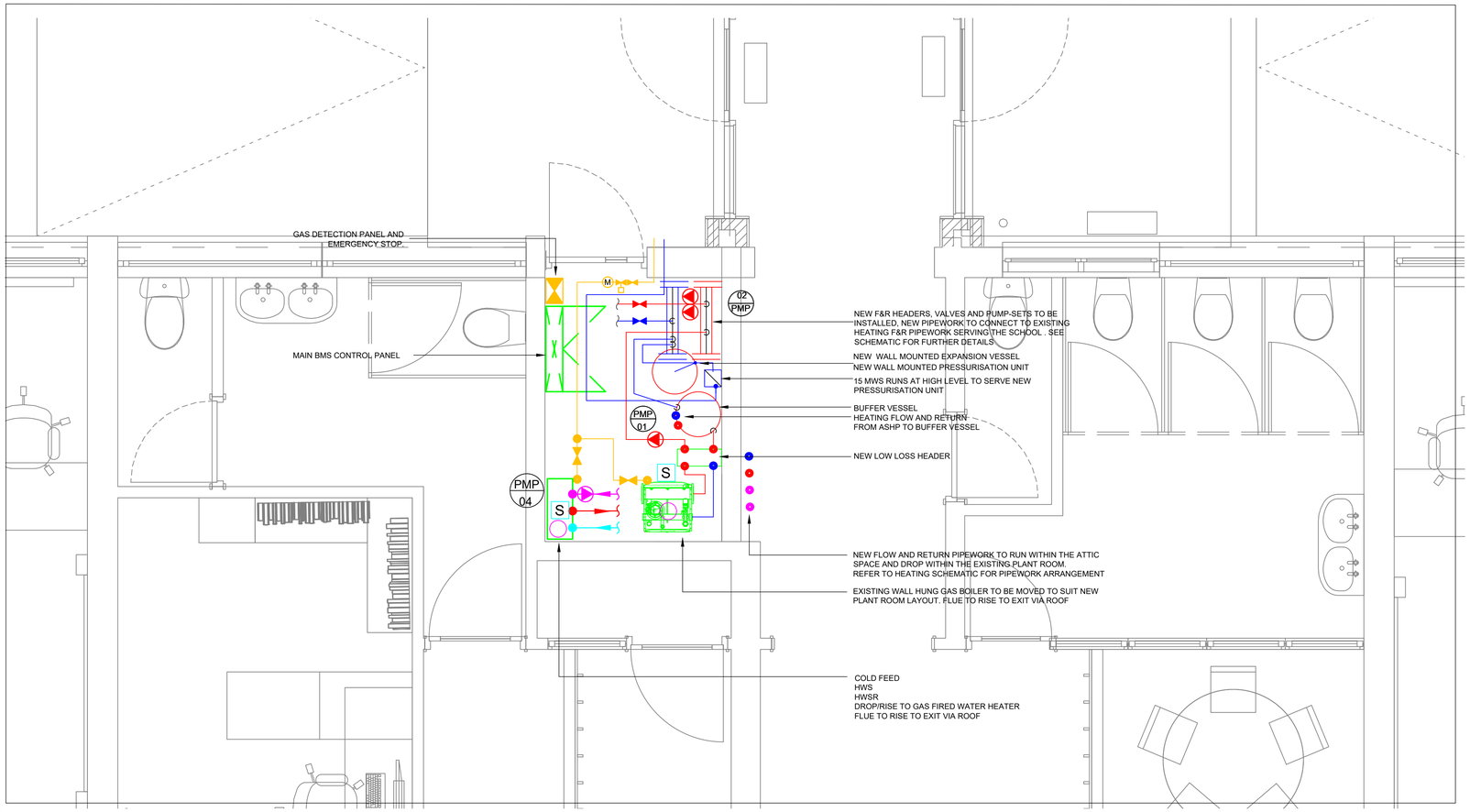


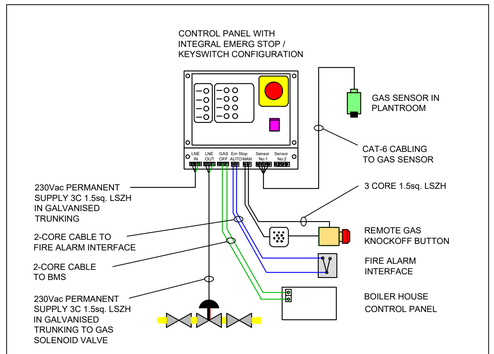
THIS DRAWING IS FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRODUCING WORKING DRAWINGS

LEGEND

- PIPE AT LOW LEVEL
- PIPE IN CEILING VOID
- PIPE AT HIGH LEVEL
- PIPE IN FLOOR
- ISOLATION VALVES
- ISOLATING VALVE
- DC DRAIN COCK
- COMMISSIONING SET
- DOUBLE REGULATING VALVE
- LSV LOCK SHIELD VALVE
- 3 PORT CONTROL VALVE
- 2 PORT CONTROL VALVE
- SV SAFETY VALVE
- AF ANTI-FREEZE VALVE
- BP BINDER POINT
- AAV AUTOMATIC AIR VENT
- T TEMPERATURE GAUGE
- P PRESSURE GAUGE
- HP/LP HIGH PRESSURE/LOW PRESSURE TEMP SENSOR
- Ts BMS TEMPERATURE STAT
- FLEXIBLE CONNECTIONS
- M METER
- STRAINER
- GAS DETECTION/PRESSURE PROVING PANEL
- GAS SOLENOID VALVE
- REMOTE 'KNOCK OFF' BUTTON
- S NATURAL GAS SENSOR
- HM HEAT METER

HEATING NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION & ALL OTHER RELEVANT DRAWINGS.
2. THE SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR CO-ORDINATING THE MECHANICAL SERVICES SO AS TO ENSURE A NEAT AND ACCESSIBLE INSTALLATION
3. REFER TO OTHER RELEVANT STRUCTURE DRAWINGS INCLUDING ARCHITECTURAL DETAILED ROOM LAYOUTS.
4. CONTRACTOR SHALL TAKE FULL COGNISANCE OF THE SAFETY AND HEALTH PLAN, AND PROVIDE FULL METHOD STATEMENTS FOR ALL HAZARDOUS OPERATIONS LISTED THEREIN. METHOD STATEMENTS SHALL ALSO BE PROVIDED FOR ANY HAZARDOUS OPERATION WHICH BECOMES APPARENT THROUGHOUT THE CONSTRUCTION PHASE.
5. ALL HEATING PIPEWORK SHALL BE MEDIUM GRADE STEEL AND SHALL BE INSTALLED IN ACCORDANCE WITH PART 3 OF THE STANDARD SPECIFICATION.
6. ALL PIPEWORK IN PLANTROOM, CEILING VOIDS, FLOOR DUCTS AND RISING SERVICES DUCTS SHALL BE INSULATED IN ACCORDANCE WITH THE SPECIFICATION.
7. WHERE PIPEWORK PASSES THROUGH WALLS OR FLOOR SLABS, SLEEVES MANUFACTURED FROM SIMILAR MATERIAL SHALL BE PROVIDED.
8. AUTOMATIC AIR VENTS SHALL BE PROVIDED ON ALL HIGH POINTS IN THE PIPEWORK INSTALLATION TO FACILITATE VENTING OF THE SYSTEM AND DRAINED TO TUNDISH.
9. DRAIN VALVES SHALL BE PROVIDED ON ALL LOW POINTS OF THE INSTALLATION TO FACILITATE COMPLETE DRAINING DOWN OF THE SYSTEM.
10. HEATING SYSTEM TO BE COMPLETE WITH NECESSARY CORROSION INHIBITOR AS DETAILED BY THE MANUFACTURER.
11. ALL HEATING PIPEWORK TO BE HYDRAULICALLY TESTED TO TWICE THE WORKING PRESSURE FOR A PERIOD OF TWO HOURS. TEST TO WITNESSED BY THE ENGINEER (TEST CERTIFICATE TO BE PROVIDED BY THE CONTRACTOR).
12. ALL LPHW PIPEWORK PASSING THROUGH FIRE COMPARTMENT WALLS & FLOORS TO BE FIRE DAMPED, STOPPED & SLEEVED BY THE CONTRACTOR.



Ⓐ TYPICAL GAS DETECTION SYSTEM SCHEMATIC WIRING DIAGRAM

AIR TO WATER HEAT PUMP SCHEDULE

ITEM	MAKE/MODEL	NOMINAL HEATING CAPACITY (EN14511)	SIZE	SEASONAL EFFICENCY	DESIGN TEMPERATURES	REFRIGERANT	COMPRESSOR TYPE	POWER SUPPLY	NOTES:
ASHP 01	HIGH TEMPERATURE AIR SOURCE HEAT PUMP.	11W	1040X480X1040L XWXH	135%	55°C FLOW TEMPERATURE @ A7 / W55	R290	SEMI-HERMETIC	220-240/1ph/50Hz	ASHP TO BE SUPPLIED WITH MASTER/SLAVE CONTROLLER TO ENABLE STEPPED PERFORMANCE c/w ALL PIPE FITTINGS, PUMPS AND FINAL CONNECTORS. HEAT PUMPS TO BE PROVIDED WITH INTEGRAL HYDRAULIC CONNECTOR KIT WITH FLANGED CONNECTION FOR HEATING FLOW AND RETURN.

PUMP SCHEDULE

ITEM	CIRCUIT	DUTY	STATIC HEAD	TYPE	POWER	CONTROLS
P1	BUFFER PRIMARY LOOP	1.5 kg/s	55 kPA	TWIN HEAD INLINE	230v/1ph/50Hz	VARIABLE SPEED PUMP c/w DIFFERENTIAL PRESSURE CONTROLS & BACNET BMS LINK
P2	HEATING CIRCUIT	1.5 kg/s	120 kPA	TWIN HEAD INLINE	230v/1ph/50Hz	VARIABLE SPEED PUMP c/w DIFFERENTIAL PRESSURE CONTROLS & BACNET BMS LINK
P3	HEAT PUMP PRIMARY	0.5 kg/s	60 kPA	SINGLE HEAD INLINE	230v/1ph/50Hz	VARIABLE SPEED PUMP c/w DIFFERENTIAL PRESSURE CONTROLS & BACNET BMS LINK
P4	HOW WATER RETURN	0.4 kg/s	270 kPA	SINGLE HEAD INLINE	230v/1ph/50Hz	VARIABLE SPEED PUMP c/w DIFFERENTIAL PRESSURE CONTROLS & BACNET BMS LINK

BUFFER VESSEL SCHEDULE

ITEM	MAKE/MODEL	CAPACITY:	PRESSURE RATING	SIZE:	NOTES:
BFF 01	300 LITRE BUFFER VESSEL SUITABLE FOR LARGE VOLUME STORAGE OF HOT WATER	300 LITRES	3 Bar	1755mmH x 595mmØ	PRE INSULATED - FACTORY FITTED. SENSOR POCKETS TO BE PROVIDED ALONG THE VERTICAL FACE OF THE BUFFER VESSEL FOR TEMPERATURE MONITORING.

WATER HEATER SCHEDULE

ITEM	MAKE/MODEL	FUEL	SIZE	SEASONAL EFFICENCY	MIN PEAK FLOW @55 DEGREES	POWER CONSUMPTION	POWER SUPPLY
WH 01	DIRECT GAS-FIRED INSTANTANEOUS WATER HEATER	LPG	615X464X240	104%	15 LITRES/MIN	75.9w	220-240/1ph/50Hz

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ISSUE: TENDER STAGE

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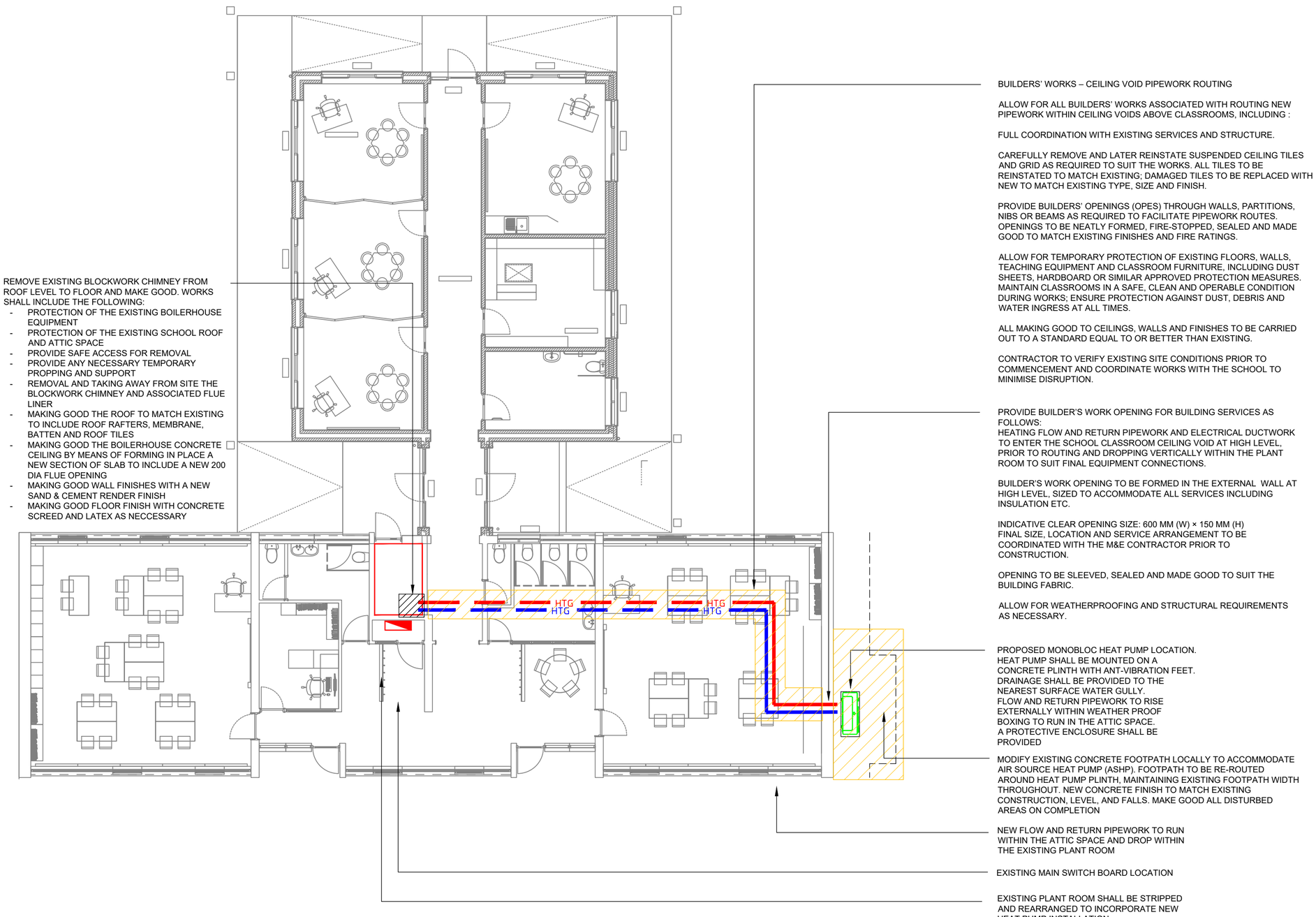
PROJECT TITLE
ENERGY PATHFINDER MEATH SCHOOLS
8.6 ST PATRICK (UGHTYNEILL NS)

DRAWING TITLE
MECHANICAL SERVICES INSTALLATION

DRAWING REFERENCE	DRN	SCALE
3232-SMK-8.6-L0-DR-M-5101	KC	A1 ASI

Project - Originator - Volume - Level - Type - Role - Number

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REMOVE EXISTING BLOCKWORK CHIMNEY FROM ROOF LEVEL TO FLOOR AND MAKE GOOD. WORKS SHALL INCLUDE THE FOLLOWING:
- PROTECTION OF THE EXISTING BOILERHOUSE EQUIPMENT
- PROTECTION OF THE EXISTING SCHOOL ROOF AND ATTIC SPACE
- PROVIDE SAFE ACCESS FOR REMOVAL
- PROVIDE ANY NECESSARY TEMPORARY PROPPING AND SUPPORT
- REMOVAL AND TAKING AWAY FROM SITE THE BLOCKWORK CHIMNEY AND ASSOCIATED FLUE LINER
- MAKING GOOD THE ROOF TO MATCH EXISTING TO INCLUDE ROOF RAFTERS, MEMBRANE, BATTEN AND ROOF TILES
- MAKING GOOD THE BOILERHOUSE CONCRETE CEILING BY MEANS OF FORMING IN PLACE A NEW SECTION OF SLAB TO INCLUDE A NEW 200 DIA FLUE OPENING
- MAKING GOOD WALL FINISHES WITH A NEW SAND & CEMENT RENDER FINISH
- MAKING GOOD FLOOR FINISH WITH CONCRETE SCREED AND LATEX AS NECCESSARY

BUILDERS' WORKS – CEILING VOID PIPEWORK ROUTING

ALLOW FOR ALL BUILDERS' WORKS ASSOCIATED WITH ROUTING NEW PIPEWORK WITHIN CEILING VOIDS ABOVE CLASSROOMS, INCLUDING :

FULL COORDINATION WITH EXISTING SERVICES AND STRUCTURE.

CAREFULLY REMOVE AND LATER REINSTATE SUSPENDED CEILING TILES AND GRID AS REQUIRED TO SUIT THE WORKS. ALL TILES TO BE REINSTATED TO MATCH EXISTING; DAMAGED TILES TO BE REPLACED WITH NEW TO MATCH EXISTING TYPE, SIZE AND FINISH.

PROVIDE BUILDERS' OPENINGS (OPES) THROUGH WALLS, PARTITIONS, NIBS OR BEAMS AS REQUIRED TO FACILITATE PIPEWORK ROUTES. OPENINGS TO BE NEATLY FORMED, FIRE-STOPPED, SEALED AND MADE GOOD TO MATCH EXISTING FINISHES AND FIRE RATINGS.

ALLOW FOR TEMPORARY PROTECTION OF EXISTING FLOORS, WALLS, TEACHING EQUIPMENT AND CLASSROOM FURNITURE, INCLUDING DUST SHEETS, HARDBOARD OR SIMILAR APPROVED PROTECTION MEASURES. MAINTAIN CLASSROOMS IN A SAFE, CLEAN AND OPERABLE CONDITION DURING WORKS; ENSURE PROTECTION AGAINST DUST, DEBRIS AND WATER INGRESS AT ALL TIMES.

ALL MAKING GOOD TO CEILINGS, WALLS AND FINISHES TO BE CARRIED OUT TO A STANDARD EQUAL TO OR BETTER THAN EXISTING.

CONTRACTOR TO VERIFY EXISTING SITE CONDITIONS PRIOR TO COMMENCEMENT AND COORDINATE WORKS WITH THE SCHOOL TO MINIMISE DISRUPTION.

PROVIDE BUILDER'S WORK OPENING FOR BUILDING SERVICES AS FOLLOWS:
HEATING FLOW AND RETURN PIPEWORK AND ELECTRICAL DUCTWORK TO ENTER THE SCHOOL CLASSROOM CEILING VOID AT HIGH LEVEL, PRIOR TO ROUTING AND DROPPING VERTICALLY WITHIN THE PLANT ROOM TO SUIT FINAL EQUIPMENT CONNECTIONS.

BUILDER'S WORK OPENING TO BE FORMED IN THE EXTERNAL WALL AT HIGH LEVEL, SIZED TO ACCOMMODATE ALL SERVICES INCLUDING INSULATION ETC.

INDICATIVE CLEAR OPENING SIZE: 600 MM (W) × 150 MM (H)
FINAL SIZE, LOCATION AND SERVICE ARRANGEMENT TO BE COORDINATED WITH THE M&E CONTRACTOR PRIOR TO CONSTRUCTION.

OPENING TO BE SLEEVED, SEALED AND MADE GOOD TO SUIT THE BUILDING FABRIC.

ALLOW FOR WEATHERPROOFING AND STRUCTURAL REQUIREMENTS AS NECESSARY.

PROPOSED MONOBLOC HEAT PUMP LOCATION.
HEAT PUMP SHALL BE MOUNTED ON A CONCRETE PLINTH WITH ANT-VIBRATION FEET.
DRAINAGE SHALL BE PROVIDED TO THE NEAREST SURFACE WATER GULLY.
FLOW AND RETURN PIPEWORK TO RISE EXTERNALLY WITHIN WEATHER PROOF BOXING TO RUN IN THE ATTIC SPACE.
A PROTECTIVE ENCLOSURE SHALL BE PROVIDED

MODIFY EXISTING CONCRETE FOOTPATH LOCALLY TO ACCOMMODATE AIR SOURCE HEAT PUMP (ASHP). FOOTPATH TO BE RE-ROUTED AROUND HEAT PUMP PLINTH, MAINTAINING EXISTING FOOTPATH WIDTH THROUGHOUT. NEW CONCRETE FINISH TO MATCH EXISTING CONSTRUCTION, LEVEL, AND FALLS. MAKE GOOD ALL DISTURBED AREAS ON COMPLETION

NEW FLOW AND RETURN PIPEWORK TO RUN WITHIN THE ATTIC SPACE AND DROP WITHIN THE EXISTING PLANT ROOM

EXISTING MAIN SWITCH BOARD LOCATION

EXISTING PLANT ROOM SHALL BE STRIPPED AND REARRANGED TO INCORPORATE NEW HEAT PUMP INSTALLATION

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DRAWING TITLE
BUILDERS WORKS

DRAWING REFERENCE	DRN	SCALE
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