

**APPENDIX "B"**

**MECHANICAL AND ELECTRICAL ENGINEER'S DETAILS**

# Drawing Issue Sheet

Client Thanet Council  
 Project 40-46 Sweyn Road  
 Project No CEC1026  
 Drawing Series Mechanical & Electrical  
 Sheet 1 of 1

## chris evans consulting

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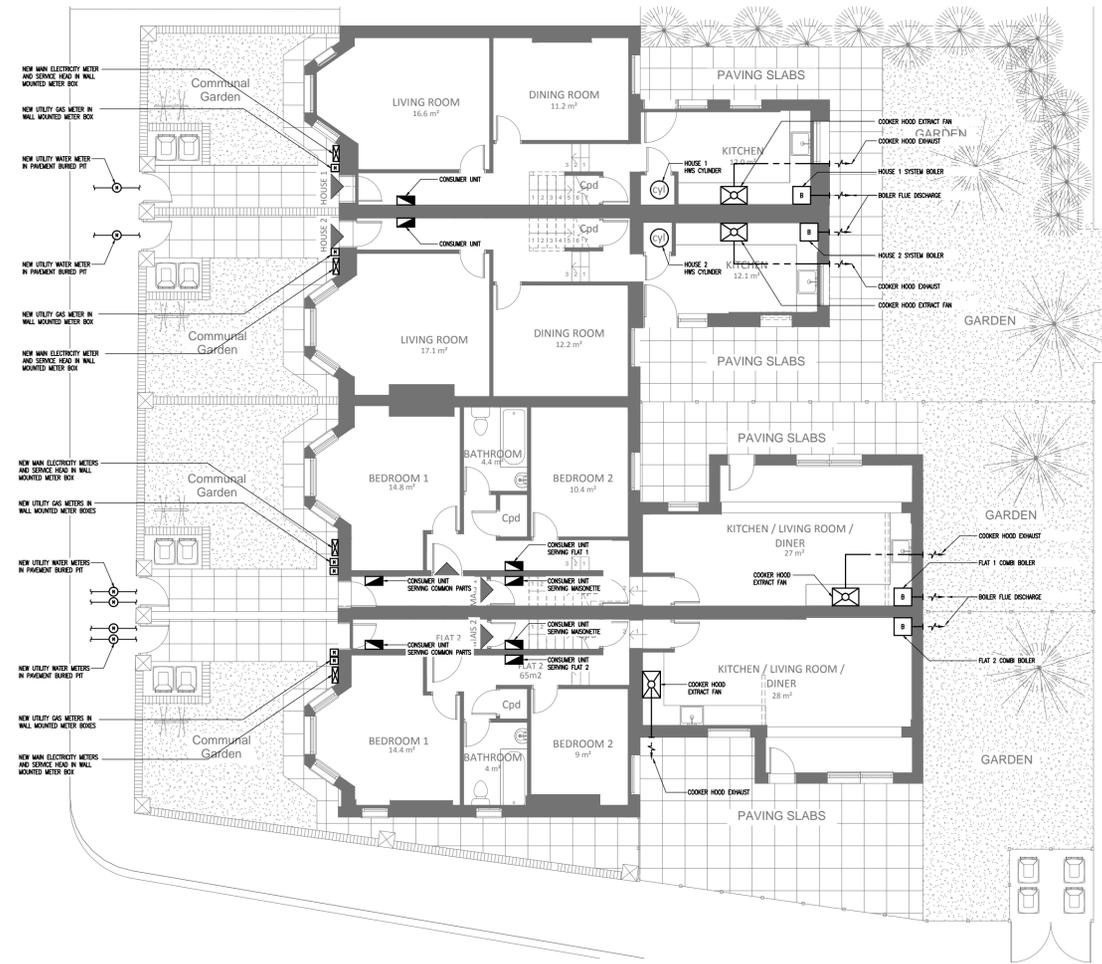
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551	Mechanical Services Schematic (house)	A1	NTS	T1									
552	Mechanical Services Schematic (flats)	A1	NTS	T1									
Mechanical & Electrical Specifications													
ME01	M&E Outline Specification	A4	NTS	T1									

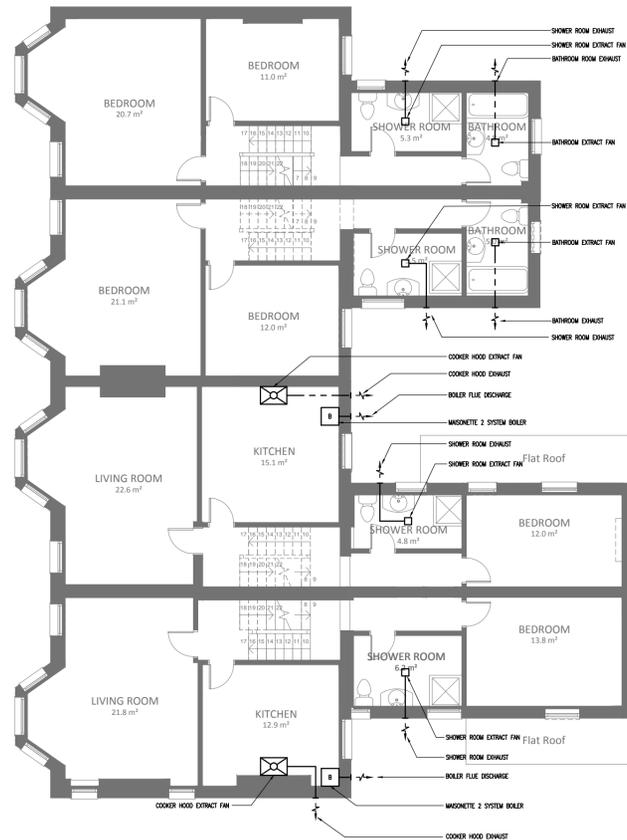
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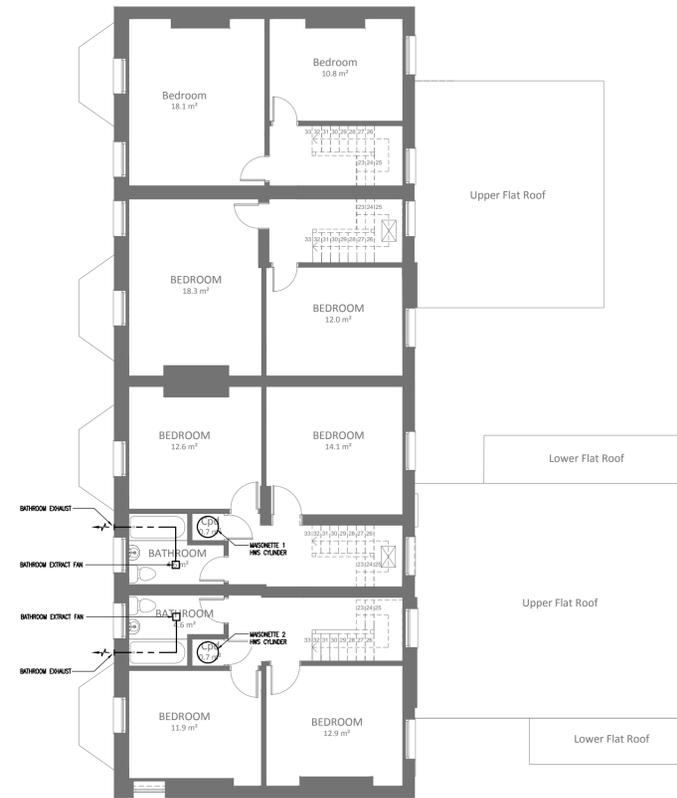
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Proposed Ground Floor Plan  
(Scale 1:100)



Proposed First Floor Plan  
(Scale 1:100)



Proposed Second Floor Plan  
(Scale 1:100)

Notes:

1. THE MECHANICAL INSTALLATION SHALL BE DESIGNED & INSTALLED COMPLETE BY THE MECHANICAL SUB CONTRACTOR.
2. THE ELECTRICAL INSTALLATION SHALL BE DESIGNED & INSTALLED BY THE ELECTRICAL SUB CONTRACTOR.
3. THESE DRAWINGS ARE FOR GUIDANCE ONLY DURING TENDER & THE MECHANICAL & ELECTRICAL SUB CONTRACTOR'S SHALL INCLUDE FOR ALL ITEMS NECESSARY TO COMPLY WITH THE SPECIFICATION.
4. ALL MECHANICAL & ELECTRICAL SERVICES TO BE INSTALLED IN ACCORDANCE WITH THE RELEVANT ENGINEERING SPECIFICATION.
5. MECHANICAL & ELECTRICAL EQUIPMENT SHOWN ON THIS DRAWING IS FOR GUIDANCE ONLY DURING TENDER AND IS A MINIMUM PROVISION, FINAL PROVISION AND SETTING OUT SHALL BE AGREED WITH THE CLIENT AND ARCHITECT.
6. WIRING ACCESSORIES AND CONDUITS/CABLES SERVING OUTLETS SHALL GENERALLY BE FLUSH MOUNTED.
7. REFER TO ARCHITECTS DRAWINGS FOR POSITIONS OF ALL DIFFUSERS AND GRILLES.

Rev	Date	Revision Notes
T1	JUN 15	TENDER ISSUE

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Client  
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Architect  
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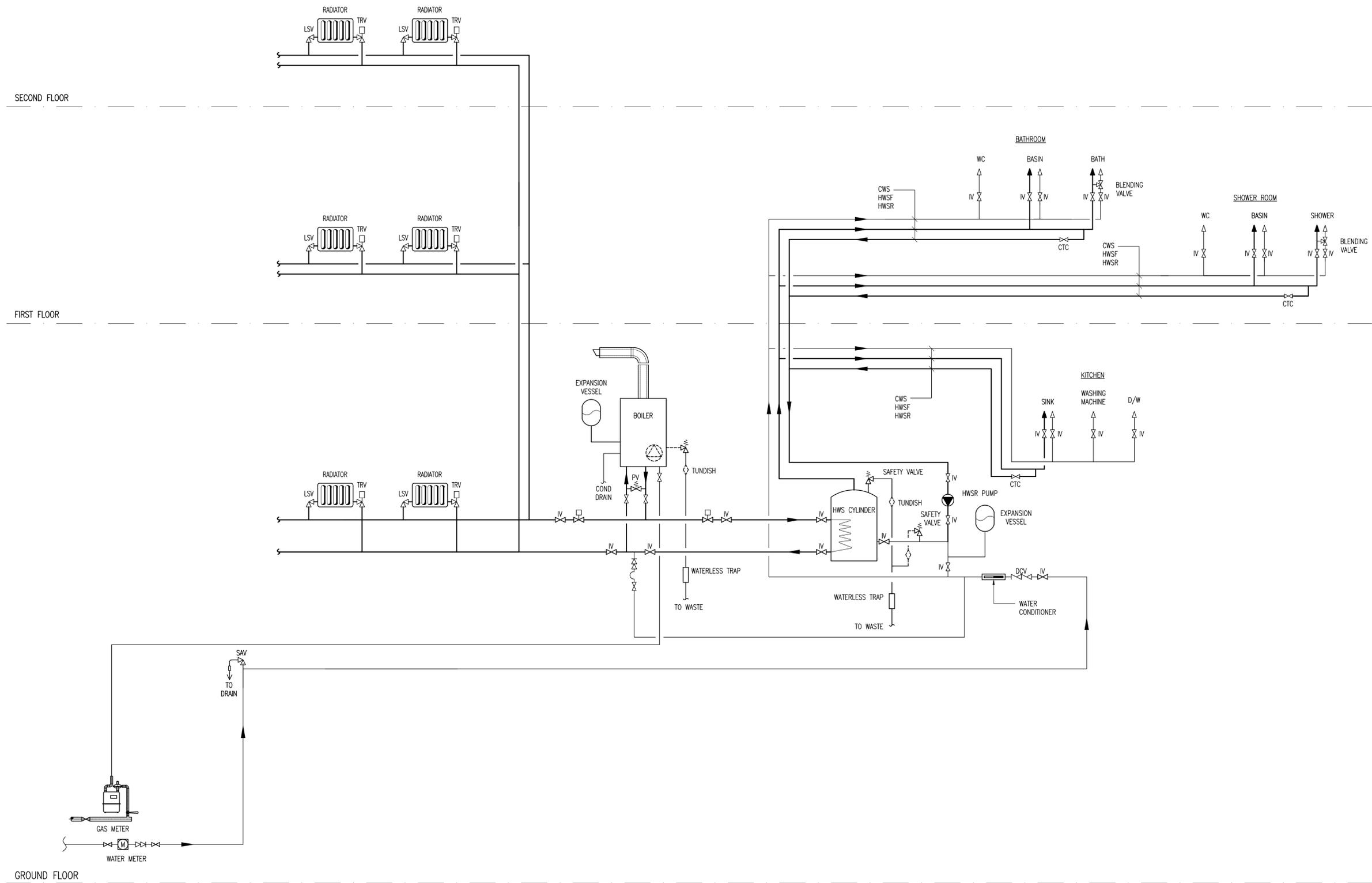
Project  
**40 - 46 SWEYN ROAD  
MARGATE**

Title  
**MECHANICAL & ELECTRICAL  
SERVICES PRINCIPLES**

Date	Scale	Drawn	Checked
JAN 15	1:50 @ A1	KM	SB
Dwg. No.			Rev.

**CONTRACT**

**1026 / 40SR / 1001 T1**



HOUSE 1 & 2

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Project

**40 - 46 SWEYN ROAD  
 MARGATE**

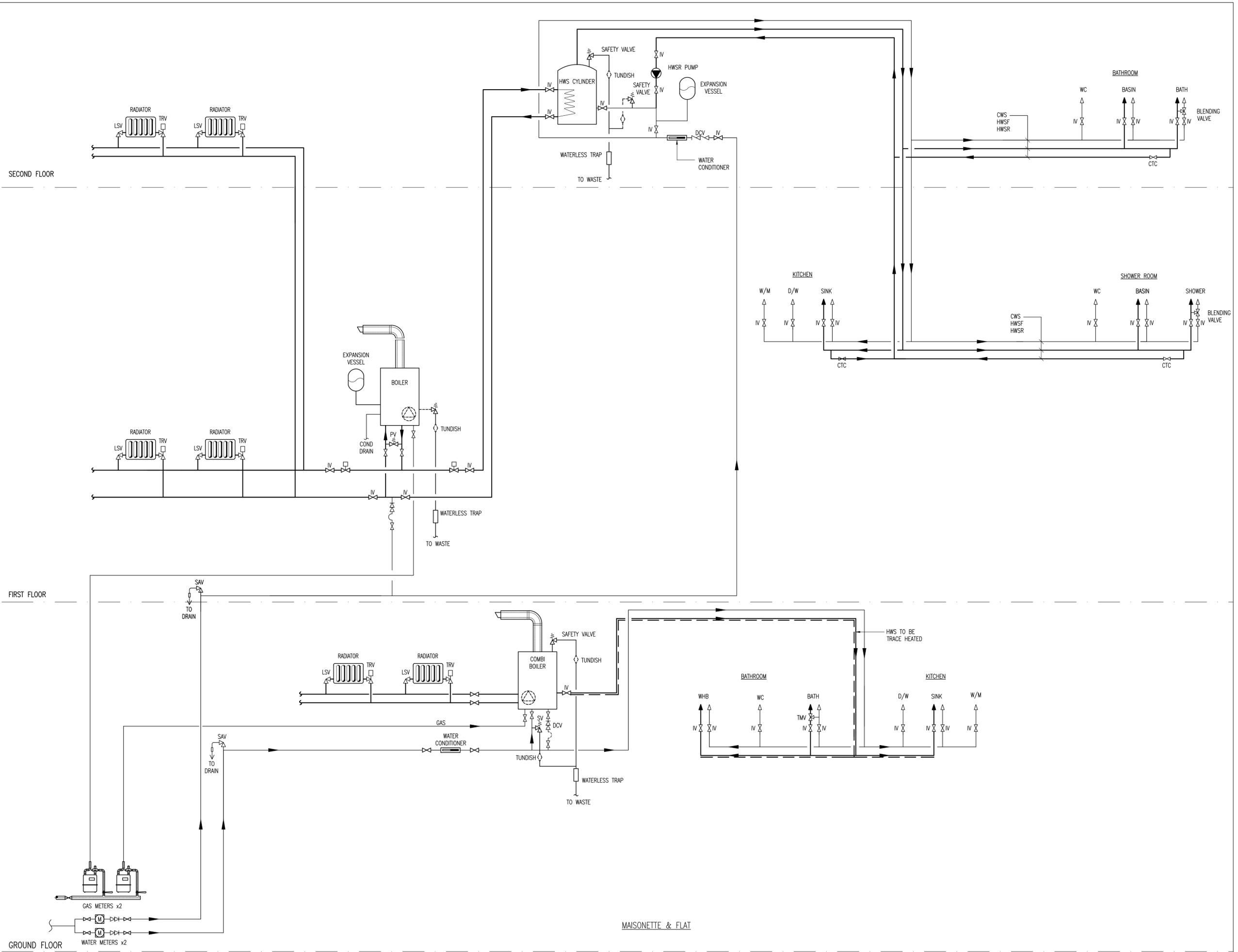
Title

**MECHANICAL SERVICES  
 SCHEMATIC**

Date	Scale	Drawn	Checked
JUN 15	NTS	AB	SB
Dwg. No.			Rev.

**1026 / 40SR / 551 T1**

**TENDER**



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**MECHANICAL SERVICES  
 SCHEMATIC**

Date	Scale	Drawn	Checked
JUN 15	NTS	AB	SB

Dwg. No. **1026 / 40SR / 552** T1

**TENDER**

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## **MECHANICAL & ELECTRICAL SERVICES**

### **OUTLINE SPECIFICATION**

**40-46 SWEYN ROAD, MARGATE**

Project No. CEC1026

Date: June 2015

Issue: 2 Nov 2016

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## SECTION ONE - INTRODUCTION

### 1.1 General

This document outlines the mechanical and electrical services proposed to the development and the general performance parameters of the same.

This document has been compiled into the following sections for ease of reference:

- Section One Introduction
- Section Two The Building
- Section Three Mechanical Services
- Section Four Electrical Services
- Section Five Drawings & Documentation
- Section Six Manufacturers & Schedules
- Appendix A Electrical General Requirements
- Appendix B Mechanical General Requirements

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## SECTION TWO - BUILDING & DESIGN PARAMETERS

### 2.1 General

The development comprises the remodelling and refurbishment of two existing three storey properties to provide two house dwellings each with their own access from the street in one property and the other property to provide two maisonette and two flat dwellings with limited landlord's common parts. For exact detail and arrangement of property refer to the Architectural proposals.

### 2.2 Design & Installation Standards

The mechanical and electrical services installations shall be designed by the Mechanical and Electrical Sub Contractors to comply with the recommendations and regulations of the following as appropriate:

- British Standards and relevant Codes of Practice.
- Building Regulations.
- CIBSE Guides and Commissioning Standards.
- IET Wiring Regulations (BS7671) and accompanying on site guides.
- Gas and Water Regulations.
- Statutory Acts.
- Health & Safety at Work Act.
- The Requirements of the local electricity supply authority.
- The Requirements of the gas supply authority.
- The Requirements of the water supply authority.
- HVCA specifications and guides to good practice.
- Gas Safe publications.
- The Health and Safety Executive document 'The Control of Legionellosis including 'Legionnaires Disease'.
- The Loss Prevention Council - 'Code of Practice for the Construction of Buildings'.
- The Loss Prevention Council - 'List of Approved Products and Services
- BSRIA application guides.
- Manufacturer's requirements and recommendations.

## 2.3 Design Parameters

The following design standards shall be used:

External Temperatures	Winter: Summer:	-4 °C, 100% SAT No cooling
Plant & Building Operation:		24 hrs
Air Tightness:	General (winter / summer) Entrance	1.0 air changes/hour 2.0 air changes/hour
Internal Temperatures (winter):	All internal areas	21°C ± 2°C db no humidity control
Ventilation Systems:	Bathrooms Kitchen All other areas	Separate extract to meet Building Regulations Separate extract to meet Building Regulations Natural trickle and purge ventilation – details by Architect
Water Storage:	Hot Water  Cold water	Direct via combi boiler for single bathroom dwelling Minimum 120 litres for double bathroom dwelling Mains pressure, no storage
Water Temperatures	HWS LTHW	65°C 80°C - 70°C
Electricity Services New Service Capacities	Each Dwelling Landlord's Common Parts	63A SPN, metered service 63A SPN, metered service (subject to design consideration)
Noise levels (measured 1.5m ffl):	Bedrooms Bathrooms / Kitchen Other areas External	NR 30 NR 40 NR 35 To meet planning requirements
U values	See Architect's specification	As existing

## SECTION THREE - MECHANICAL SERVICES

### 3.1 GENERAL

The Mechanical and Public Health Services to the properties shall comprise new installations (to each dwelling) generally including a gas fired central heating system (radiators), mechanical ventilation to the bathroom & kitchen, domestic hot & cold water services, rainwater & sanitation services above and below ground level.

### 3.2 INCOMING GAS AND WATER SERVICES

New 'Metered' mains gas and water services shall be provided to each dwelling. The new incoming services and meters shall terminate outside the properties within utility meter cupboards and pavement chambers respectively.

The Main Contractor shall be responsible for all liaison with the local water and gas authorities in order to establish the new supplies and shall provide all appropriate builderswork to effect their provision. The Main Contractor shall obtain and complete all necessary application forms on behalf of the client (client to raise any payments necessary) associated with the gas and water service including meter provision.

All new services and metering equipment shall be installed at a readily accessible height.

### 3.3 HEATING

The heating and hot water to the flats and maisonette dwellings shall be provided by individual packaged fan assisted gas fired condensing combi boilers. The heating and hot water to the house dwellings shall be provided by an individual packaged fan assisted gas fired condensing boilers and HWS cylinders. Final locations to be agreed though generally within the kitchen of each dwelling (location and flue provision to be coordinated with kitchen layout and cupboard provision).

The boiler shall be provided complete with integral controls, integral pump, automatic ignition, temperature adjustment, 7-day time clock, etc for fully automatic operation.

Low temperature hot water shall be distributed from the boiler to the various radiators, etc. and HWS cylinder via a series of copper or multi-layer composite pipes (MLCP) located within the floor / ceiling voids and risers.

All heating / domestic hot water systems shall be fully pressurised, complete with manual fill, all necessary expansion vessels, controls, safety valves etc.

LTHW shall be circulated to the building via the integral heating pump within the boiler to meet the demands of the heating.

Access shall be provided to all flue joints to allow for a full visual inspection of the flue system as required by the Gas Safe Regulations.

### 3.4 GAS SERVICE

The gas service shall distribute from the main meter to the boiler within each dwelling via a series of horizontal and vertical 'trac pipe', or copper pipework. The gas service shall run within the timber floor voids and vertical builderswork shafts and shall be installed / ventilated in accordance with the Gas Safe Regulations.

Appropriate isolating / gas cocks shall be provided at each outlet position.

### 3.5 VENTILATION

Generally all habitable spaces shall be naturally ventilated via trickle ventilators, air bricks or openable windows (Architect to detail to meet Building Regulation requirements).

Bathrooms, toilets and kitchens shall be mechanically ventilated by individual ceiling or wall mounted extract fan units ducted to external. Access to the fan units shall be via the fan extract grilles in order to eliminate the need for access panels. Where adequate natural ventilation exists within WCs (via openable windows) such provision may be used in preference to mechanical ventilation provided the provision is compliant with Building Regulation minimum requirements.

The extract fans shall be operated by individual PIR sensors or the local lighting circuit and shall be fitted with 'run-on' timers. Each fan shall be provided with a local override switch in order to prevent the fan operation should the client wish to do so.

Make-up air is natural from the surrounding areas.

The boiler shall be fully sealed balance flue type discharging through the side wall and therefore no additional ventilation would be necessary.

Louvres for all mechanical ventilation provision shall be provided by the Mechanical Sub Contractor.

### 3.6 DOMESTIC HOT AND COLD WATER SERVICES

The metered incoming water mains shall distribute to serve the various outlets and the combi boiler and HWS cylinder within each dwelling as necessary.

The domestic hot and cold water service within the building shall be run in copper and shall be fully insulated. Isolating ball valves (1/4 turn) and flexible connections will be provided on all final run outs to taps, mixers, cisterns, etc.

Hot water shall be generated by the combi boiler or boiler and associated HWS cylinder.

The pipework shall be run in copper and fully insulated as close to the outlets as possible.

Local blending valves shall be provided on all wash hand basins and baths to reduce the hot water temperature to 43 °C at these outlets and prevent scalding.

Each bathroom and toilet unit shall be provided with the necessary pressure reduction valves, double check valves, isolation valves, blending valves, etc.

In properties of three floors or more consideration should be given to the provision of a cold water booster set subject to the existing mains water pressure (to be confirmed by the mechanical sub contractor). Allowance should be made within the landlord's common parts (should such exist) for the provision of a cold water booster set.

### **3.7 AUTOMATIC CONTROLS**

The heating shall be time controlled via the integral time clock controller on the boiler.

The HWS shall be instantaneous or time controlled via the integral time clock controller on the boiler.

The extract fan shall be operated by the bathroom lights and/or PIR sensors and shall be fitted with 'run-on' timers. Each fan shall be provided with a local override switch in order to prevent the fan operation should the client wish to do so.

### **3.8 WATER TREATMENT**

The heating system shall be fully chemically flushed and treated with inhibitors on completion.

All domestic water services shall be fully sterilised at completion.

An in-line scale inhibitor shall be provided in each system to reduce the formation of scale.

### **3.9 SANITATION AND RAINWATER SERVICES**

The Main Contractor shall be fully responsible for all above ground and below ground rainwater and sanitation services including all the external gutters.

The Main Contractor shall include in his tender for an initial CCTV survey of any existing underslab drainage and include for all repairs and modifications as necessary to suit the new layout.

The internal and external sanitation and rainwater services shall be installed using UPVC pipework systems, with UPVC run outs to the sanitary appliances. Either single stack or modified one pipe sanitation systems shall be employed to meet the requirements of the Building Inspector.

External rainwater gutters and down pipes to be as detailed in the architect's drawings.

All new underslab drainage shall match the existing.

Sanitation and internal rain water pipework running through bedrooms, studies, etc shall be acoustically lagged throughout the length to prevent noise breakout into these areas.

On completion of the installation a final jet clean shall be carried out including a final CCTV survey to demonstrate that the system is clean and sound.

### **3.10 SANITARY APPLIANCES**

Sanitary appliances shall be specified by the Architect for supply and fixture by the Mechanical Sub Contractor (refer to the Architect's specification).

Taps, traps, cisterns and other similar fittings shall be deemed part of the sanitary appliances and as such shall be specified by the Architect. All exposed traps shall be specified chrome plated or stainless steel.

### **3.11 DOMESTIC SPRINKLER SYSTEM (ONLY WHERE REQUIRED BY LOCAL AUTHORITY BUILDING CONTROLS)**

Where required for Building Regulations compliance (or as dictated by the Local Authority's Building Control's department) the Mechanical Sub Contractor shall employ a specialist sub contractor to design, supply, install and commission a domestic water mist sprinkler system (extent to be defined by Building Controls) to the property to NFPA750 & BS9251 requirements.

## SECTION FOUR - ELECTRICAL SERVICES

### 4.1 GENERAL

The electrical services shall comprise incoming electricity service, main switchgear, lighting, small power, telecommunication services, fire alarms, security systems, specialist systems and earthing and bonding.

### 4.2 INCOMING ELECTRICITY SERVICE

A new 'metered' electricity service shall be provided to each dwelling of the property and an additional service for the landlord's common parts.

Subject to the Electrical Sub Contractor's own design proposals, the incoming electricity service head, distribution equipment and energy meters to each dwelling shall be housed and terminated within an external flush / surface mounted meter box to the regional supply authority specification. The electrical incoming service shall be separated from incoming water and gas services.

Subject to the Electrical Contractor's design consideration, separate 63A SPN metered services shall be provided to serve each dwelling within the property.

The Main Contractor shall be responsible for all liaison with the local electricity authority to effect the provision of a new electricity services and meter provision (and removal of any existing redundant main electricity services). The Main Contractor shall obtain and complete a necessary application forms on behalf of the client (client to raise any payments necessary) associated with the electricity service including meter provision.

All new electrical service and metering equipment shall be installed at a readily accessible height.

### 4.3 MAIN DISTRIBUTION & FINAL CIRCUITS

The local electricity company's incoming supplies shall be metered via single phase kWh energy metering equipment.

Subject to the local electricity company's requirements, a main fuse distribution board shall be provided by the Electrical Sub Contractor for the distribution of mains electricity services to each dwelling (to the electricity company's approved pattern and arrangement).

A new multi-way single phase and neutral MCB distribution board and loose switchgear shall be provided (unless the existing is proposed for reuse) for the supply of electricity to final circuits and plant items within each dwelling and to the landlord's common parts, installed at a readily accessible height.

Each new MCB distribution board shall be of a 'split' busbar pattern with a minimum of 2No. incoming/main RCDs for separation of circuits.

The final circuit distribution board shall be provided with MCBs for protection of all outgoing circuits, with an additional 20% spare capacity for future use.

Generally, final circuits shall be wired in LSZH insulated and sheathed flat multicore cables ('twin & earth') run in ceiling and floor voids and drawn into PVC conduits within walls. Final circuits serving any external services and plant shall be wired in XLPE/SWA/LSZH armoured cables.

**4.4 LIGHTING INSTALLATION**

Lighting to the property shall generally comprise the following:

<b>Location</b>	<b>Luminaire Type</b>
• Kitchens	Enclosed fluorescent battens (prismatic diffuser)
• Bathrooms	Enclosed fluorescent circular bulkhead (prismatic diffuser)
• Living Rooms	Pendant lamp holders (subject to Building Regulations)
• Bedrooms	Pendant lamp holders (subject to Building Regulations)
• External	Enclosed WP fluorescent circular bulkhead
• Landlord's	Enclosed fluorescent circular bulkheads (with 3hr maintained emergency provision where appropriate).

Final luminaire locations shall be agreed with the Architect (Architect to provide a reflected ceiling plan).

Any fluorescent luminaires proposed shall incorporate high frequency electronic control gear.

General lighting shall be controlled via wall mounted manual switches local to the space served with two way and intermediate switching to circulation routes (staircase particularly).

External luminaires shall be controlled via internal switches with 'neon' indicators.

Generally, final circuits shall be wired in LSZH insulated and sheathed flat multicore cables ('twin & earth') run in ceiling and floor voids and drawn into PVC conduits within walls. Final circuits serving any external services and plant shall be wired in XLPE/SWA/LSZH armoured cables.

**4.5 SMALL POWER DISTRIBUTION**

Small power generally comprises wall mounted socket outlets for general use and fused connection units serving fixed appliances.

Minimum quantities of twin switched socket outlets to rooms shall generally be as follows:

<b>Location</b>	<b>Quantity of Twin Switched Socket Outlets</b>
• Single Bedrooms	2N <sup>o</sup>
• Double Bedrooms	3N <sup>o</sup>
• Hallways	1N <sup>o</sup>

- Bathroom None (ensure no shavers sockets are specified)
- Kitchen 4Nº
- Living room/Diner 4Nº
- Cupboard None

Within the kitchen fused connection units shall be grouped together in a concealed location (to the back of a base or high level kitchen unit) and serve unswitched socket outlets and flexible cable outlets to the rear of fixed equipment. The final layout and arrangement of outlets within the kitchen shall be subject to the detailed design of the kitchen itself.

The Electrical Sub Contractor shall provide local electricity supplies to all items of mechanical plant (fans, heating system, etc.) and shall liaise with the Mechanical Sub Contractor to obtain particulars of any new mechanical plant for consideration in the design of final circuit wiring. Any new external plant shall be served using XLPE/SWA/LSZH cables.

Generally, final circuits shall be wired in LSZH insulated and sheathed flat multicore cables ('twin & earth') run in ceiling and floor voids and drawn into PVC conduits within walls. Final circuits serving any external services and plant shall be wired in XLPE/SWA/LSZH armoured cables.

#### 4.6 TELECOMMUNICATIONS

SUBJECT TO CLIENT CONSIDERATION

*A new BT service shall be provided into the property terminating within distribution equipment. The service shall provide both telecommunications and broadband data connection facility to each dwelling terminating within the main living room of each dwelling (with a combined telecommunications and broadband outlet).*

*The Electrical Sub Contractor shall be responsible for all liaison with BT in order to establish the new telecommunications supply. The Electrical Sub Contractor shall obtain and complete all application forms on behalf of the client (client to raise separate payment for the new service).*

*The system shall be designed, supplied and installed by a Specialist Sub Contractor appointed by the Electrical Sub Contractor. All outlets within the property shall be available 'live' for telecommunications service at completion. The complete system shall be tested and commissioned by the Specialist Sub Contractor upon completion.*

#### 4.7 FIRE DETECTION AND ALARM

A 'domestic' fire alarm system shall be installed throughout the property (separate systems to each dwelling).

Manual and automatic detection shall be provided to the building where required to accord with Building Regulations and BS5839 pt 6 requirements and to achieve the level of automatic detection defined below.

The provision of a fire detection system to the building shall be subject to a fire risk analysis to be carried out on behalf of the client by the Fire Alarm system provider.

#### Level of Detection (to BS5839 pt 6)

General (manual element)	Type M system, comprising of manual breakglass contacts along escape routes and at final exits (common parts only subject to Building Controls' requirements).
General (automatic element)	Automatic smoke and heat detection to each dwelling, arrangement to accord with BS5839 pt 6.

Electronic alarm sounders shall be provided throughout each dwelling and common parts (sounder to common parts may be omitted only if dictated by the appointed Building Controls body).

Generally, the Fire Alarm installation shall be wired in BS8519 'Category 2' type cables (FP200 Gold or equivalent) run in ceiling and floor voids and drawn into PVC conduits within walls.

The alarm shall operate in unison upon any call point or detector operating (single stage evacuation system).

**Carbon Monoxide detector shall be provided in each flat and connected to a permanent 230v supply served from the local lighting circuit.**

## 4.8 SPECIALIST SYSTEMS

The following specialist system shall be provided designed, supplied and installed complete by specialist sub contractors appointed by the Electrical Sub Contractor:

### Television System

A UHF/FM/Digital and cable TV distribution system shall be provided to the property comprising roof mounted aerial array, amplification equipment as necessary, distribution cabling and wall mounted outlets. The system shall be designed, supplied and installed complete by a Specialist Sub Contractor to the Electrical Sub Contractor.

The service shall provide a TV distribution service terminating within the main living room of each dwelling.

The complete system shall be tested and commissioned by the Specialist Sub Contractor upon completion and demonstrated to the client.

## 4.9 DOOR BELL

A mains fed (via remote transformer) doorbell shall be provided to each dwelling of the property with bell/sounder provided within the entrance corridor of each dwelling.

## SECTION FIVE – RECORD DOCUMENTATION

### 5.1 GENERAL

The Mechanical and Electrical Sub Contractors shall provide builderswork, design & installation, manufacturers and co-ordination drawings (with supporting calculations and equipment technical submissions as appropriate and as defined within Appendices A & B), for review by the client's representatives.

The Contract Administrator shall provide AutoCAD floor plans for the property for the Sub Contractors' use in producing the above drawings.

The Mechanical and Electrical Sub Contractor shall provide operation and maintenance manuals and record drawings prepared with particular reference to the mechanical and electrical services installations as follows (the number of copies to be produced shall be advised by the contract administrator):

- 'As Installed' electrical services installation drawings, comprising 2No. sets of A1 (full size), A3 (reduced scale) and electronic (ACAD/DWG) CAD drawing files.
- 'As Installed' mechanical services installation drawings, comprising 2No. sets of A1 (full size), A3 (reduced scale) and electronic (ACAD/DWG) CAD drawing files.
- Operating and maintenance manuals for the mechanical and electrical services installations, comprising 2No. bound copies (A4 size) and an electronic (PDF) copy. The manual shall include the following:
  - Systems descriptions
  - Systems design parameter
  - Emergency procedures
  - Operating instructions
  - Maintenance instructions
  - Schedule of components
  - Manufacturers particulars
  - Contractor's particulars
  - Design team's particulars
  - Recommended spares lists
  - Installation record drawings.
  - Installation test and completion certification.

**SECTION SIX – MANUFACTURERS**

**6.1 GENERAL**

The following provides guidance on the preferred selection of equipment and materials where appropriate. In all instances final selection shall be subject to client approval as shall be the submission of any alternatives to those items cited.

**Electrical Services**

**GENERAL**

Item	Manufacturer & Range	Comments
Distribution Switchgear	MEM or Merlin Gerin	Main MCB boards & loose switchgear
Lighting Switches & wiring accessories.	White plastic (flush mounted). MK Logic Plus	All areas
Fire Alarm system and components	IPS Ltd, contact Jason Rowe T: 0845 054 7522, E: jrowe@ips-ltd.com	Or contractor's own alternative
Intruder Alarm system & Video Entry system and components	IPS Ltd, contact Jason Rowe T: 0845 054 7522, E: jrowe@ips-ltd.com	Or contractor's own alternative
Telecomms & broadband wiring.	-	Contractor's own selection
UHF/FM TV system	Digital Smart Ltd, contact Ian Clarke T: 0800 652 9343, W: <a href="http://www.digitalsmart.co.uk">www.digitalsmart.co.uk</a>	Or contractor's own alternative

**Mechanical Services**

**GENERAL**

Item	Manufacturer, Range & Details
<b>Boiler</b>	
Manufacturer	Bosch Worcester (12i system) or Vaillant EcoTEC
Burner	Atmospheric
Fuel	Natural Gas
Boiler Type	Wall mounted Combi boiler, Low NOx / High Efficiency, Electronic Control, Automatic Ignition, Fully Modulating, Balanced flue (single bathroom properties).
	Wall mounted system boiler, Low NOx / High Efficiency, Electronic Control, Automatic Ignition, Fully Modulating, Balanced flue (multiply bathroom properties)
<b>Heating Pump</b>	
Manufacturer	Integral with boiler
Pump Type	Inline glandless variable speed with integral inverter drive
Electricity Supply	230v / 1ph / 50 Hz
Temperature Range	10 °C to 95 °C
<b>Radiators</b>	
Manufacturer & Type	Contractor's selection to be confirmed

Item	Manufacturer, Range & Details
<b>Extract Fans</b>	
Manufacturer	Nuair/Vent Axia
Type (kitchen)	Kitchen Genie NKFL - X
Electricity Supply	230 V / 1ph. / 50 Hz
Type (bathroom)	Bathroom Genie XH12 (12v with local transformer)
Electricity Supply	12v with local transformer
<b>HWS Cylinder</b>	
Manufacturer	To be compactable with boiler manufacturer.
Type	To be compactable with boiler selection.
Heating media	LTHW

## APPENDIX A

### ELECTRICAL SERVICES DESIGN, GENERAL REQUIREMENTS

#### 1.0 ELECTRICAL SERVICES DESIGN GENERAL

##### 1.1 Design Standards and Guides

The Electrical Building Services Installation shall be designed in accordance with the following publications, current at the time of design and installation.

1. British Standards and British Standard Codes of Practice, where an appropriate standard does not exist, CENELEC harmonisation or IEC Standard shall be used. In particular :
  - BS 5266 : Part 1 Emergency Lighting
  - BS 5839 : Part 1 Fire Detection and Alarm Systems for Buildings.
  - BS 5588 : Fire Precautions in the design and construction of buildings.
  - BS 7671 : Requirements for electrical installations. IET Wiring Regulations.
2. Health and Safety at Work Act.
3. Statutory Acts.
4. Building Regulations as issued by the Department of the Environment and The Welsh Office.
5. The Chartered Institute of Building Services, Engineering Guides, Technical Notes, Application Manuals, Technical Memoranda and Commissioning Codes. In particular:
  - CIBSE Code for Interior Lighting.
  - CIBSE Technical Memoranda No. TM12 'Emergency Lighting'.
  - CIBSE Guidance No. GN4 : Lighting Requirements of Building Regulations Part L.
6. Building Services Research and Information Association (BSRIA), Applications Guides and Technical Notes, in particular :
  - BSRIA Applications Guide 1/81 'Locating Fire Alarm Sounders for Audibility'
7. IET Guidance Notes.
8. Electricity Council Engineering Recommendations.
9. Local Electricity Supply Authority requirements.
10. European Standards, Directives and Regulations.
11. Fire Officers Requirements, in particular: Fire Precautions Act 1971.
12. Industry Committee for Emergency Lighting Limited (ICEL) : Guide 1006 : Emergency Lighting Design Guide.
13. Construction (Design & Management) Regulations.

## 1.2 Design Drawings

The Electrical Sub Contractor shall produce fully co-ordinated Electrical Services drawings for all areas of the buildings and general external site service drawings.

The scale of these drawings shall generally be as follows :

Site Services	1:200
General Arrangement	1:50
Detailed Core Area	1:50
Plantrooms	1:10
Equipment Layouts	1:10
Schematics & Schedules	NTS

The Sub Contractor shall ensure working drawings are kept on site and these are to be updated as modifications take place.

The Employers Agent or his Representative shall have free full access to the marked up drawings to ensure accurate record drawings can be produced.

## 1.3 Co-ordination

The Sub Contractor shall before commencement of any work or submission of any drawings for comment, fully co-ordinate his works with all other services and the design team, such that when builderswork, working and design drawings are submitted for comment, these are fully co-ordinated with all other services.

No claims for additional costs will be considered where services are to be re-positioned or diverted due to lack of co-ordination on the Sub Contractors part.

The Sub Contractor shall before commencement of any works, provide full dimensioned working drawings, detailing all trunking / conduit / cable runs, lighting fittings, wiring accessories, sub main distribution and any other items required in his installation for the Employers Agent or his Representative to comment upon.

Comment by the Employers Agent or his Representative shall in no way relieve the Sub Contractor in his responsibility in providing a complete and practical installation.

## 1.4 Calculations

The Sub Contractor shall carry out all calculations necessary for the correct design of the Electrical Services Installations.

Copies of all such calculations together with any supporting information shall be furnished to the Employers Agent or his Representative in conjunction with the submission of design and installation drawings.

1. Assessment of Average Maximum Demand, Maximum Instantaneous Demand and connected load, providing details of currents, real power and apparent power for both Summer & Winter conditions.
2. Main and Sub Main cable calculations.
3. Final Sub Circuit cable calculations for all circuits.
4. Illumination calculations.

## 1.5 General Notes

All equipment and materials shall be installed in accordance with manufacturer's recommendations and selected in accordance with the following:

1. Manufactured in accordance with relevant British Standards specification and Codes of Practice. Plant and materials manufactured by companies having an appropriate BS 5750 certification shall be used in preference where available.
2. Conform with design requirements and be suitable for the purpose for which they are intended.
3. In compliance with Statutory Requirements.
4. Have an anticipated life expectancy as outlined in CIBSE Guide B18, provided recommended maintenance in accordance with the Operating and Maintenance manuals is carried out.
5. Suitable for operation on the Electricity supply.
6. Plant and materials shall be similar in quality to those derived in this document. The Sub Contractor shall submit a full list of intended manufacturers / suppliers for consideration by the Employers Agent or his Representative. The Employers Agent shall reserve the right to reject equipment which is considered inferior or would not meet the anticipated life expectancy given in the CIBSE guide. It is expected that the Sub Contractor shall obtain competitive quotations for all items of major equipment.
7. All plant, equipment and materials shall be installed in such a manner that it can be freely and easily maintained / replaced without causing major disruption to the occupier, infringing the Health and Safety at work requirements or causing disruption to the overall premises. In general it shall not be necessary to enter one tenant's area in order to serve or maintain equipment relating to another tenant.
8. Where non-accessible suspended ceilings are being provided, the Electrical Sub-Contractor shall ensure that as far as practical all conduit systems are re-wireable from below ceilings. Equipment requiring access i.e. remote battery conversion units, shall be located above access panels. Consideration shall be given to the following :
  - Conduit boxes shall be located such that they are accessible from luminaire or grill apertures or access panels.
  - Where the aperture is less than 150mm in any one direction, the box shall be suspended below the soffit such that it is as close as practical to the ceiling aperture. This shall also apply to conduit boxes for ceiling roses.

## APPENDIX B

### MECHANICAL SERVICES DESIGN, GENERAL REQUIREMENTS

#### 1.0 MECHANICAL SERVICES DESIGN GENERAL

##### 1.1 Design Standard and Guides

The Mechanical Building Services installation shall be designed in accordance with the following publications current at the time of design and installation.

1. British Standards and British Standard Codes of Practice, where an appropriate standard does not exist, CENELEC harmonisation or IEC Standard shall be used.
2. Health and Safety at Work Act.
3. Statutory Acts.
4. Building Regulations as issued by The Department of the Environment and The Welsh Office.
5. The Chartered Institute of Building Services Engineers Guides and Technical Notes, technical memoranda and commissioning codes.
6. Building Services Research and Information Associates application Guides and Technical Notes.
7. IET Wiring regulations (BS7671) and accompanying on site guides.
8. Electricity Council Engineering Recommendations.
9. Access Committee for England 'Design Guidance Notes for Developers'.
10. The Model Bylaws
11. British Gas Technical Publication IM Services.
12. HVCA Installation Guide TR10.
13. Fire Officers Committee Rules 29th Edition.
14. Construction (Design & Management) Regulations.

##### 1.2 Design Drawings

The Contractor shall produce fully co-ordinated Building Services drawings for each building and general site service drawings.

The scale of these drawings shall generally be as follows:

Site Services	1:100
General arrangement	1:50
Plantrooms	1:10
Equipment Layouts	1:10
Schematics & Schedules	NTS

The Contractor shall ensure working drawings are kept on site and these are to be updated as modifications take place.

The Employers Agent or his Representative shall have free full access to the marked up drawings to ensure accurate record drawings can be produced.

### **1.3 Co-ordination**

The Sub Contractor shall before commencement of any work or submission of any drawings for comment, fully co-ordinate his works with all other services and the design team, such that when builders work, working and design drawings are submitted for comment, they are fully co-ordinated with all other services.

No claims for additional costs will be considered where services are to be re-positioned or re-diverted due to lack of co-ordination on the Sub Contractors part.

The Sub Contractor shall, before commencement of any work, provide full dimensioned working drawings, detailing all ductwork, pipework, grilles diffusers, tanks, radiators, control accessories required in his installation for the Employer's Agent or his Representative to comment upon.

Comment by the Employer's Agent or his Representative shall in no way relieve the Sub Contractor in his responsibility in providing a complete and practical installation.

### **1.4 Calculations**

The Sub Contractor shall carry out all calculations necessary for the correct design of the Building Services Installations.

Copies of all such calculation together with any supporting information shall be furnished to the Employers Agent in conjunction with the submission of design and installation drawings.

Information to be included with submission shall comprise:

- Heating load calculations
- Pipe sizing calculations
- Ventilation air flow calculations
- Drainage sizing
- Pump sizing
- Local hot water heater sizing
- Calculations as required to meet the requirements of Building Regulations Part L compliance.

### **1.5 General Notes**

The Sub Contractor shall be responsible for the design, co-ordination, supply, delivery, erection, connection, testing and commissioning of all materials and equipment to complete the development.

The Sub Contractor shall be responsible for obtaining all relevant Local Authority approvals prior, during and at completion of the works.

All plant and Materials shall be selected in accordance with the following and installed in accordance with the manufacturer's recommendations:

1. Manufactured in accordance with relevant British Standards specification and Codes of Practice. Plant and Materials manufactured by companies having an appropriate BS 5750 certification shall be used in preference where suitable.

2. Conform with design requirements and be suitable for the purpose for which they are intended.
3. In compliance with Statutory Requirements.
4. Have an anticipated life expectancy as outlined in CIBSE Guide B18, providing recommended maintenance in accordance with the Operating and Maintenance manuals is carried-out.
5. Suitable for operation on the Electricity supply.
6. Plant and materials shall be similar in quality to those derived in this document. The Sub Contractor shall submit a full list of intended manufacturers/suppliers for consideration by the Employers Agent or his Representative. The Employers Agent shall reserve the right to reject equipment that is considered inferior or would not meet the anticipated life expectancy given in the CIBSE guide. It is expected that the sub contractor shall obtain competitive quotations for all items of major plant and equipment.

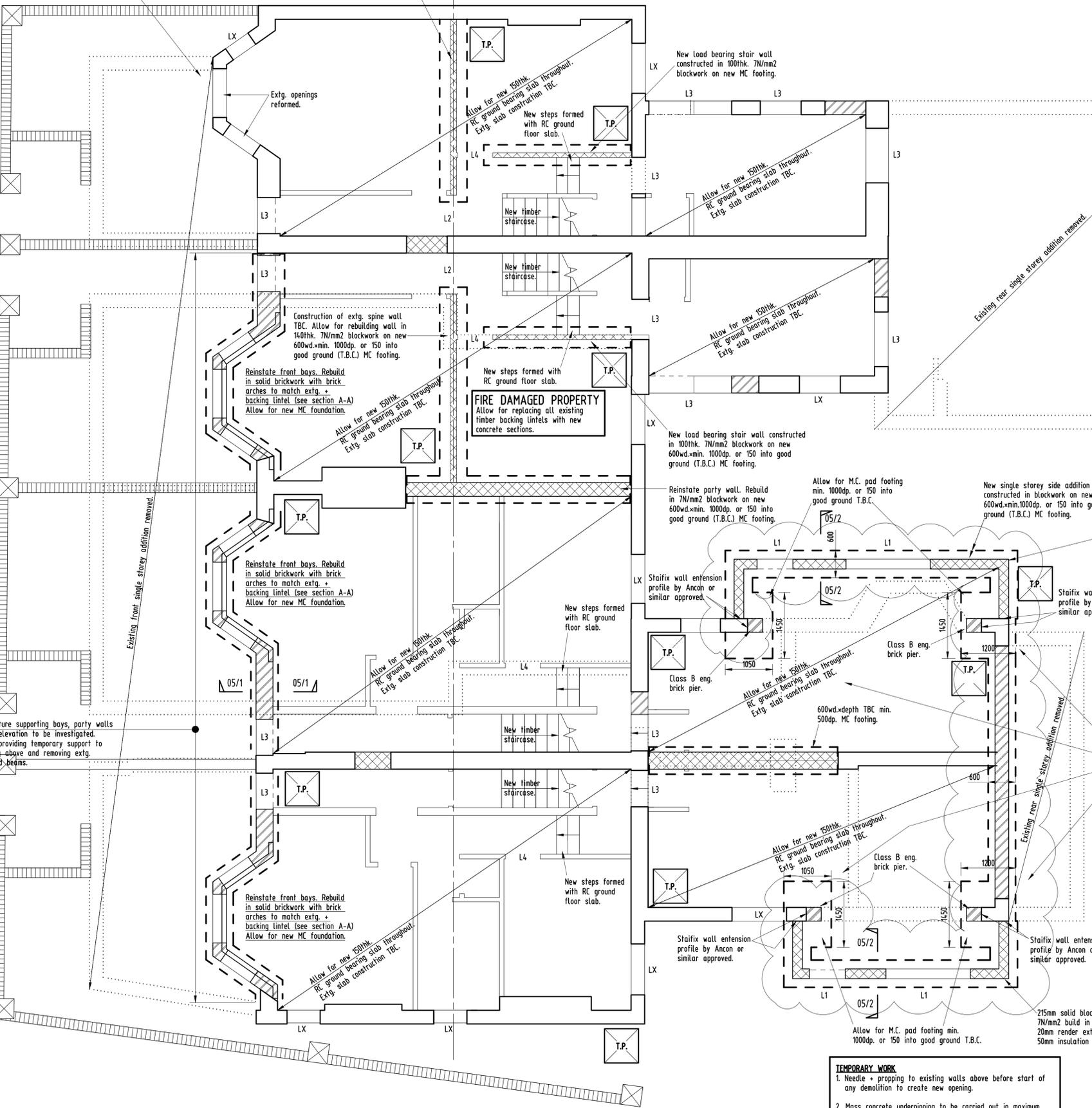
All plant, equipment and materials shall be installed in such a manner that it can be freely and easily maintained /replaced without causing major disruption to the tenant, infringing the Health and Safety at work requirements and causing disruption to the overall site. In general it shall not be necessary to enter one tenant's area in order to serve or maintain equipment relating to another tenant.

**APPENDIX "C"**

**STRUCTURAL ENGINEER'S DETAILS**

Allow for reinstating existing bay window openings to match existing. Allow for rebuilding in brickwork with brick arches to match existing.

Construction of new spine wall TBC. Allow for rebuilding wall in 140thk. 7N/mm2 blockwork on new 600wd.xmin. 1000dp. or 150 into good ground (T.B.C.) MC footing.



**EXISTING/NEW TIMBER FLOORS:**  
 ALLOW FOR REPAIRS TO THE EXISTING FLOORS BY BOLTING TO THE SIDE OF DEFECTIVE JOISTS WITH NEW TIMBER SECTIONS TO MATCH.  
 PROVIDE DOUBLED-UP JOISTS UNDER ALL PARTITIONS PARALLEL TO JOIST SPAN  
 PROVIDE SOLID STRUTTING UNDER ALL PARTITIONS RUNNING AT RIGHT ANGLES TO JOISTS UNDER.  
 ALL DOUBLED-UP JOISTS TO BE BOLTED TOGETHER USING 12mm DIA. BOLTS WITH WASHERS AT 400ctrs.

**TEMPORARY WORKS NOTE:**  
 THE CONTRACTOR IS TO TAKE ALL NECESSARY STEPS TO ENSURE THE STABILITY OF THE BUILDING DURING STOPPING OUT THE REMOVAL OF EXISTING STRUCTURE AND SUBSEQUENT CONSTRUCTING ACTIVITIES. ALL SUCH STEPS TO BE FULLY DOCUMENTED IN METHOD STATEMENTS AND SUBMITTED TO ENGINEER FOR COMMENT AT LEAST 10 WORKING DAYS PRIOR TO WORKS COMMENCING.

**EXISTING EMBEDDED TIMBERS**  
 THE CONTRACTOR IS TO ALLOW FOR OPENING UP THE FLOOR AND REMOVING PLASTER TO ALLOW FOR THE INSPECTION OF EMBEDDED TIMBERS, JOIST ENDS, LINTELS AND BEAMS BY THE ENGINEER AND AS REQUIRED BY THE TIMBER TREATMENT SPECIALIST.

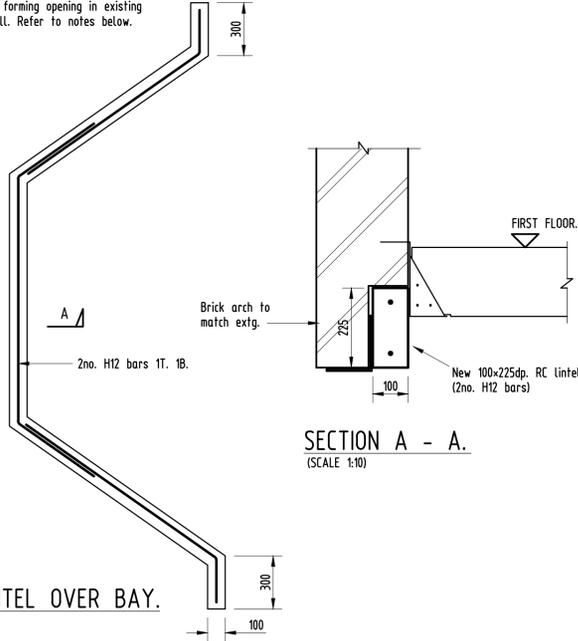
- LEGEND:**
- Proposed location of trial pit to expose the size and depth of the extg. footings.
  - Existing structure removed.
  - New 7.0 N/mm2 blockwork.
  - New brickwork.

**notes**  
 DO NOT SCALE FROM THIS DRAWING  
**GENERAL**  
 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND THE SPECIFICATION.  
 FIRE STOPPING AND SOUND INSULATION DETAILS TO BE IN ACCORDANCE WITH RELEVANT B.S. AND ARCHITECTS DRAWINGS AND SPECIFICATION.  
**CONCRETE**  
 ALL CONCRETE IS TO BE IN ACCORDANCE WITH BS 8100 WITH A MAXIMUM AGGREGATE SIZE OF 20mm.  
 CONCRETE GRADES TO BE:- Foundations Mass concrete FND2 Reinforced Concrete C28/35 Foundations C25/30  
 A 50mm LAYER OF CONCRETE BLINDING (R1 ALL IN MIX) IS TO BE PLACED BELOW ALL REINFORCED CONCRETE FOUNDATIONS, GROUND BEAMS AND SLABS. HARDWARE IS TO BE GRANULAR AND FREE FROM DEGRADABLE MATERIAL AND TO BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 200mm THICKNESS.  
**MASONRY WALLS**  
 BRICKS ARE TO HAVE THE FOLLOWING CHARACTERISTICS:  
 FROST RESISTANCE CLASS F TO BS 3921  
 SOLUBLE SALT CONTENT CLASS L TO BS 3921  
 BRICKWORK ABOVE DPC LEVEL IS TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 100N/mm2  
 BRICKWORK BELOW DPC LEVEL IS TO BE IN CLASS B ENGINEERING BRICKS.  
 BLOCKS ARE TO BE:- Min 7N/mm2 and density 1100kg/m3 UNO  
 PARTY WALLS BLOCK DENSITY TO BE SUFFICIENT TO ACHIEVE AN AS-BUILT MASS OF AT LEAST 45kg PER M2 OF ELEVATION  
 NON-LOADBEARING PARTITIONS BLOCKS TO HAVE A MAXIMUM DENSITY OF 750kg/m3  
 INNER LEAF OF EXTERNAL WALL DENSITY TO BE SPECIFIED BY ARCHITECT TO SUIT FLANKING SOUND REQUIREMENTS.  
 BRICKS AND BLOCKS ARE TO BE MANUFACTURED AT LEAST 28 DAYS PRIOR TO USE IN THE WORKS.  
 MORTAR IN MASONRY WALLS IS TO BE 1:1:6 CEMENT:LIME:SAND MIX ABOVE DPC, AND 1:3 CEMENT:SAND MIX BELOW DPC.  
 MORTAR FOR CAPPINGS, COPINGS AND CILLS IS TO BE A 1:1/4:3 CEMENT: LIME: SAND MIX.  
 MORTAR TESTS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE SPECIFICATION.  
 ALL CAVITY WALL TIES IN EXTERNAL WALLS ARE TO BE STAINLESS STEEL AND ARE TO CONFORM TO BS 5628-1:2005.  
 FOR BUILDINGS LESS THAN 15m. IN HEIGHT TYPE 2 TIES SHOULD BE USED.  
 FOR BUILDINGS GREATER THAN 15m. IN HEIGHT TYPE 1 TIES SHOULD BE USED.  
 SPACING IS TO BE 900mm CENTRES HORIZONTALLY AND 450mm VERTICALLY AND STAGGERED AT REVEALS AND EXPANSION JOINTS CAVITY WALL TIES ARE TO BE AT 225mm VERTICAL CENTRES AND 225mm AWAY FROM THE REVEAL OR JOINT.  
**TIMBER**  
 ALL TIMBER IS TO BE GRADE C16 (E3) TO BS 5268 UNLESS OTHERWISE NOTED AND TO BE DOUBLE VACUUM TREATED. SAWN ENDS ARE TO BE TREATED WITH A COMPATIBLE PRESERVATIVE.  
 ALL JOIST HANGERS ARE TO BE GALVANISED MILD STEEL WITH A MINIMUM THICKNESS OF 2.5mm.  
 JOISTS TO BE DOUBLED UP UNDER BATHS.  
 JOIST SPANS GREATER THAN 2.5m. SOLID BLOCKING IS TO BE INSTALLED IN ACCORDANCE WITH THE BUILDING REGULATIONS.  
 PROVIDE SOLID STRUTTING UNDER ALL PARTITIONS RUNNING AT RIGHT ANGLES TO ALL DOUBLED UP JOISTS TO BE BOLTED TOGETHER USING 12mm DIA. BOLTS WITH WASHERS AT 500 CENTRES.  
 SOLID BLOCKING IS ALSO TO BE INSTALLED WHERE JOISTS ARE NOTCHED INTO JOISTS UNDER.  
 STEEL BEAMS OR ARE SUPPORTED ON JOIST HANGERS.  
 NOTCHING AND DRILLING OF JOISTS TO BE IN ACCORDANCE WITH N.H.B.C. STANDARDS CLAUSES 6.4-59.

**STEELWORK**  
 BS EN 10210-1. ALL OTHER STRUCTURAL SECTIONS TO BE GRADE S275/J2 IN ACCORDANCE WITH BS EN 10025. FABRICATION IS TO COMPLY WITH BS 5950.  
 ALL INTERNAL STEELWORK IS TO BE BLAST CLEANED AND PAINTED WITH 2 COATS OF ZINC PHOSPHATE PRIMER PRIOR TO ERECTION UNLESS OTHERWISE NOTED.  
 ALL FIRE-PROOFING TO STEELWORK TO BE TO ARCHITECTS DETAILS.  
 LIFTING CHAINS AND CABLES USED DURING ERECTION ARE TO HAVE PROTECTING SHROUDS TO PREVENT DAMAGE TO THE PAINT.  
 STEELWORK TO BE CASED IN CONCRETE IS TO BE LEFT UNPAINTED.  
 SCRATCHED PAINTWORK AND ALL BOLTS ARE TO BE TOUCHED UP AFTER ERECTION.  
 THE STEELWORK SUB-CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE PRIOR TO FABRICATION OF STEELWORK.  
**INTERNAL STUDWORK WALLS**  
 NOT TO BE CONSTRUCTED UNTIL ROOF IS WEATHERPROOF

- L1 2 No. R6 (100x14dp) PC lintel by Naylor or similar approved.
- L2 1 No. R3 (140x100dp.) prestressed lintel by Naylor or similar approved.
- L3 3 No. R6 (100x140dp.) prestressed lintel by Naylor or similar approved. Number to suit thickness of wall above.
- L4 1 No. S4 (100x100dp.) prestressed lintel by Naylor or similar approved.
- LX Denotes locations to expose existing backing lintels by removing plaster finishes internally for inspection and allow for replacing with p.c. concrete lintels.

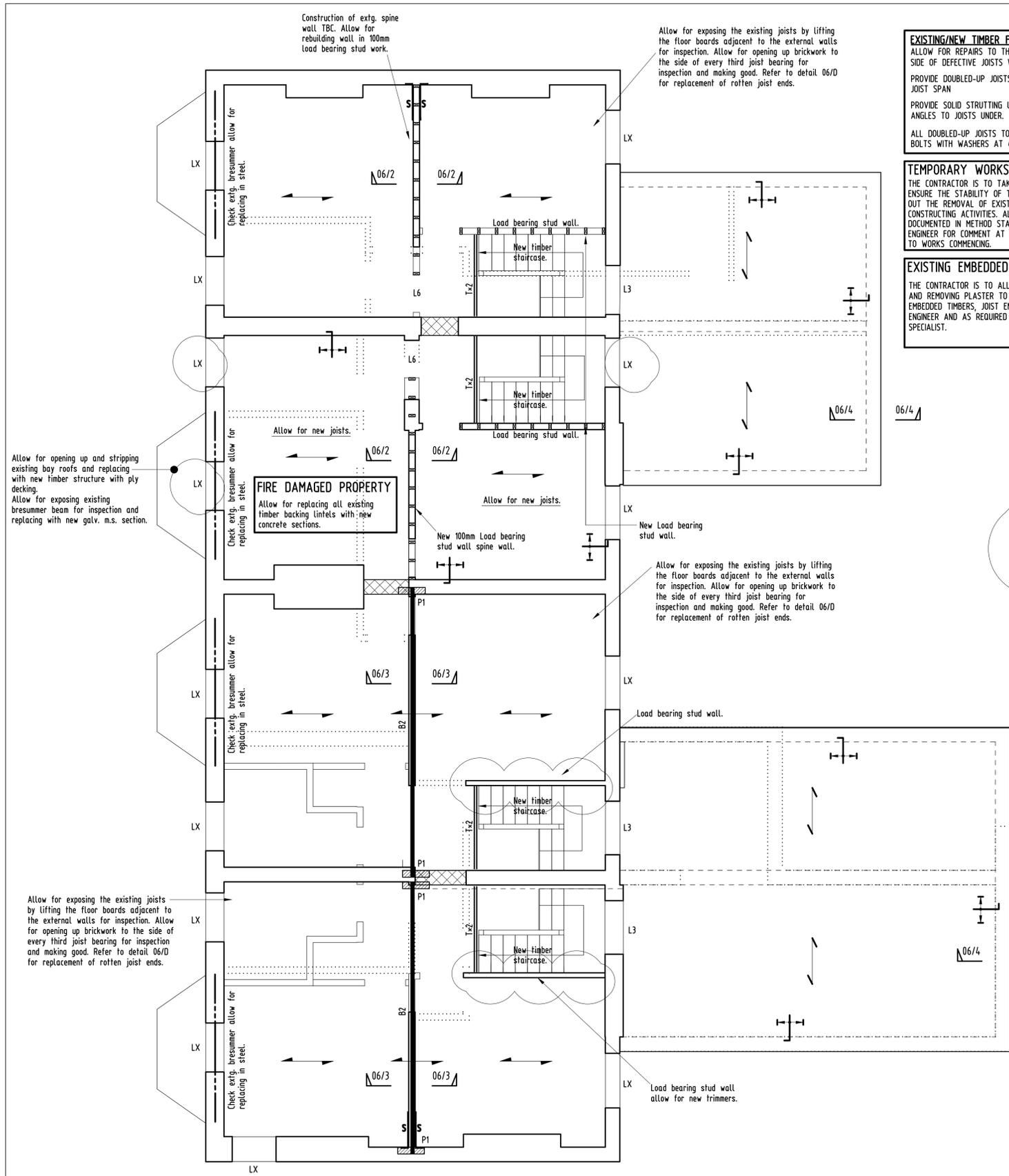
**Note:**  
 Underpin bases constructed prior to forming opening in existing wall. Refer to notes below.



**TEMPORARY WORK**  
 1. Needle + prapping to existing walls above before start of any demolition to create new opening.  
 2. Mass concrete underpinning to be carried out in maximum bay lengths of 1m.  
 3. The concrete is to be placed to within 75mm of the underside of the existing foundation. After 24 hours the gap is to be packed and well rammed with 1:3 sulphate resisting cement to sharp sand mixed with minimal water and left for 24 hours before commencing excavation on the next bay in the sequence. Refer to detail 05/D.

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Sovereign House, 1 Albert Place, Finchley, London N3 1QB. telephone 020 7281 4821 e-mail: first.name.last.name@ellisandmoore.com		
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drawing title <b>GROUND FLOOR          GENERAL ARRANGEMENT</b>		
drawing no.	revision	
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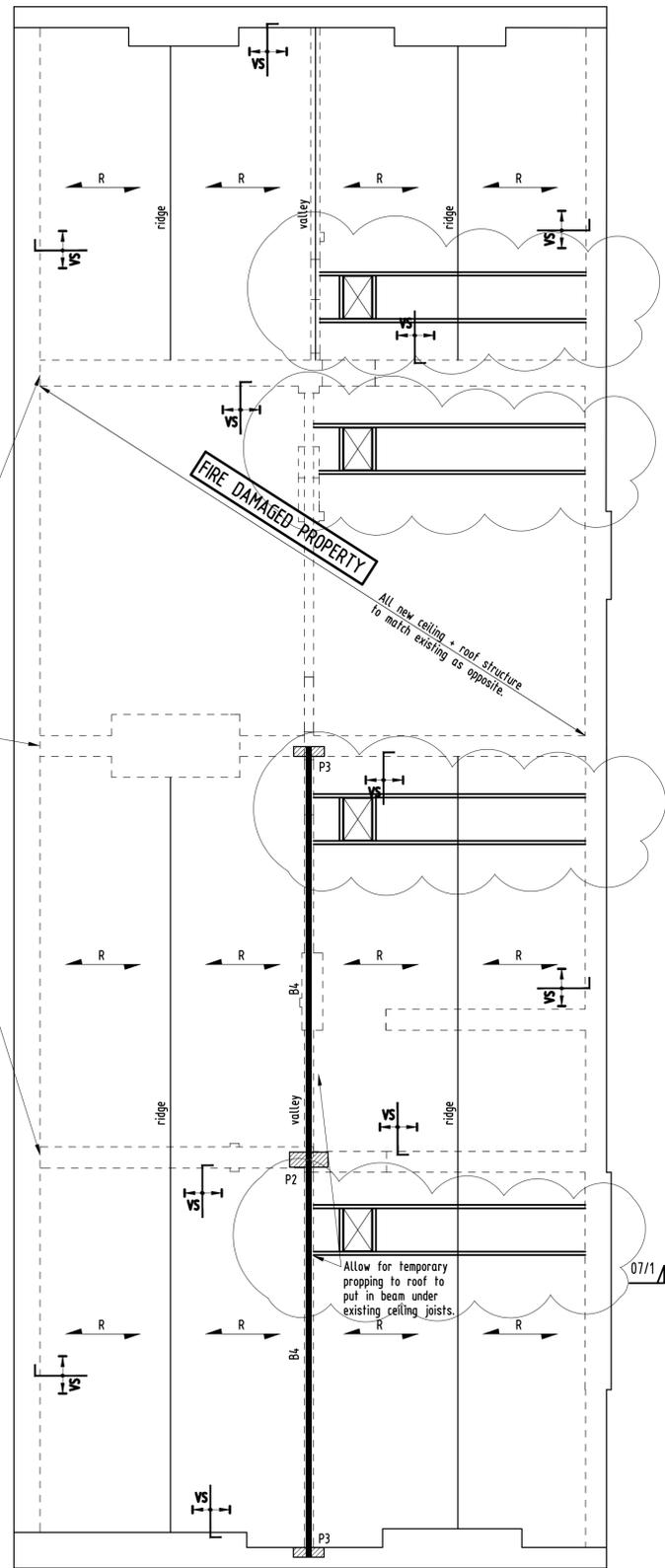


SECOND FLOOR PLAN

**EXISTING/NEW TIMBER FLOORS:**  
 ALLOW FOR REPAIRS TO THE EXISTING FLOORS BY BOLTING TO THE SIDE OF DEFECTIVE JOISTS WITH NEW TIMBER SECTIONS TO MATCH.  
 PROVIDE DOUBLED-UP JOISTS UNDER ALL PARTITIONS PARALLEL TO JOIST SPAN  
 PROVIDE SOLID STRUTTING UNDER ALL PARTITIONS RUNNING AT RIGHT ANGLES TO JOISTS UNDER.  
 ALL DOUBLED-UP JOISTS TO BE BOLTED TOGETHER USING 12mm DIA. BOLTS WITH WASHERS AT 400ctrs.

**TEMPORARY WORKS NOTE:**  
 THE CONTRACTOR IS TO TAKE ALL NECESSARY STEPS TO ENSURE THE STABILITY OF THE BUILDING DURING STRIPPING OUT THE REMOVAL OF EXISTING STRUCTURE AND SUBSEQUENT CONSTRUCTING ACTIVITIES. ALL SUCH STEPS TO BE FULLY DOCUMENTED IN METHOD STATEMENTS AND SUBMITTED TO ENGINEER FOR COMMENT AT LEAST 10 WORKING DAYS PRIOR TO WORKS COMMENCING.

**EXISTING EMBEDDED TIMBERS**  
 THE CONTRACTOR IS TO ALLOW FOR OPENING UP THE FLOOR AND REMOVING PLASTER TO ALLOW FOR THE INSPECTION OF EMBEDDED TIMBERS, JOIST ENDS, LINTELS AND BEAMS BY THE ENGINEER AND AS REQUIRED BY THE TIMBER TREATMENT SPECIALIST.



ROOF PLAN

notes

**DO NOT SCALE FROM THIS DRAWING**  
 FOR GENERAL NOTES REFER TO DRG. No. 15605-01

**LEGEND:**

- Existing structure removed.
- New 7.0 N/mm2 blockwork. All solid blockwork walls to be 7N/mm2 concrete blocks with a min. density of 1100kg/m3. Infill walls to the same thickness of the existing (215/330), block bonded at the sides and pinned with mortar at the top.
- Load bearing stud wall.
- LX** Denotes locations to expose existing backing lintels by removing plaster finishes internally for inspection and allow for replacing with p.c. concrete lintels.
- L3** 3No. R6 (100x140dp.) prestressed lintel by Taylor or similar approved. Number to suit thickness of wall above.
- L6** 2No. 50x100dp. lintel in C24 timber.
- B2** 203x203x71 UC.
- B4** 202x203x52 UC.
- P1** 550x140x215dp. M.C. padstone.
- P2** 550x215x215dp. M.C. padstone.
- P3** 440x140x215dp. M.C. padstone.
- Span direction of existing floor joists. Allow for replacement of defective floor joists and strengthening floor by bolting new joists to the side of every third joist in all rooms at first and second floor. Allow for extg. 50x220 @ 400c/c. TBC by opening up.
- Span direction of new 50x200 [C24] timber flat roof joists @ 400c/c.
- Allow for timber repairs and replacement of existing roof and ceiling timbers. Roofs to be opened up for inspection.
- Double up trimmers 2No. 50x220 [C24] bolted together with M12 bolts @ 500c/c.
- Double up trimmers around the hatch with 2No. 50x150 [C24] bolted together with M12 bolts @ 500c/c. Setting out T.B.C. by Arch.
- 30x5mm galv. m.s. straps. Refer to details 06/A and 06/B.
- Denotes 30x5mm galv. ms restraint strap refer to detail 06/C.
- Denotes 30x5mm galv. ms vertical wall plate restraint straps. Refer to detail 06/E.

rev.	description	date
A	REVISED AS CLOUDED	25.09.15

**ellis+moore**  
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 telephone 020 7281 4821  
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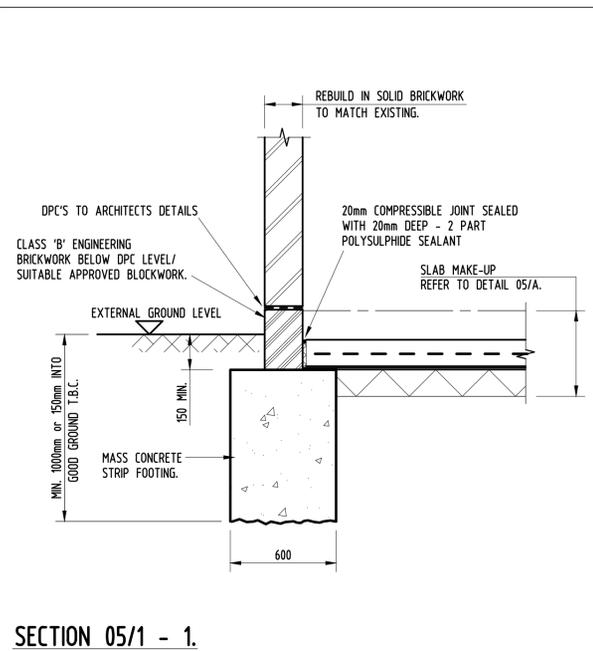
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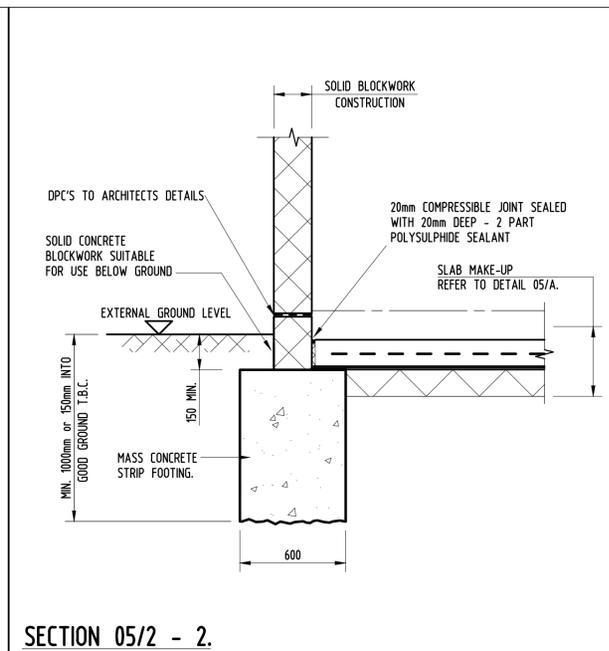
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**40 - 46 SWEYN ROAD  
 CLIFTONVILLE  
 KENT.**

drawing title  
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 GENERAL ARRANGEMENT**

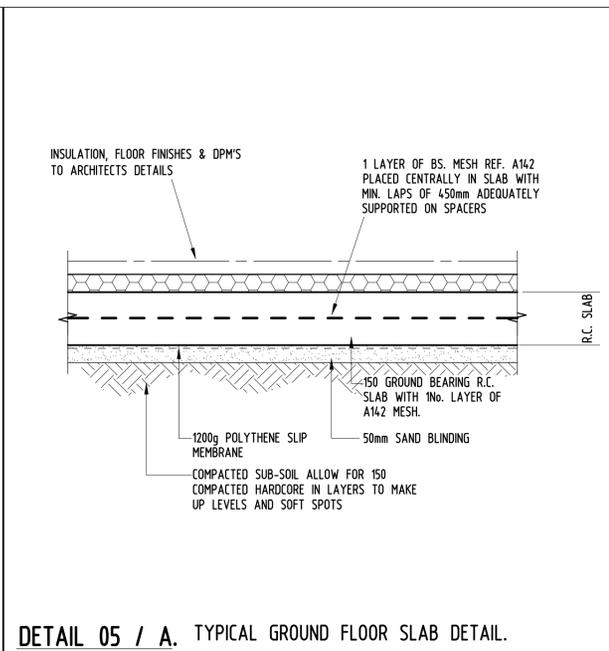
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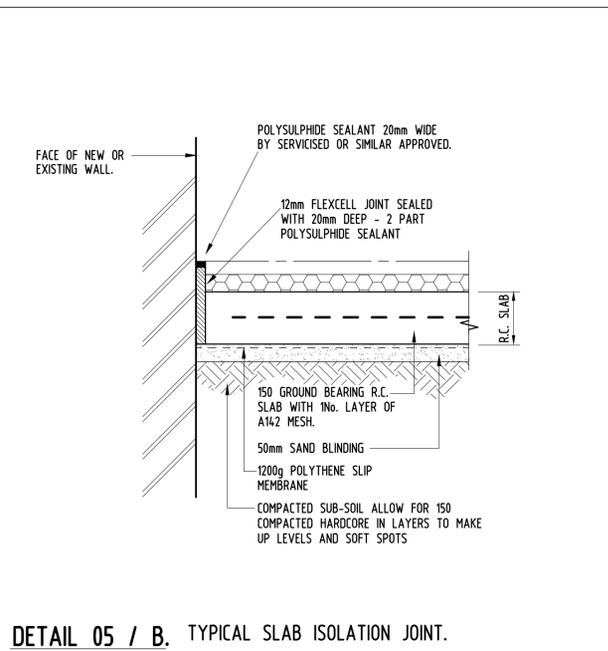
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SECTION 05/2 - 2.

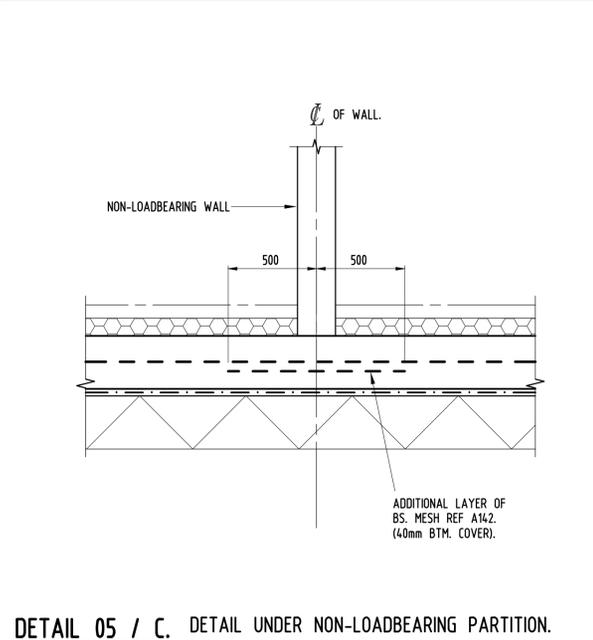


DETAIL 05 / A. TYPICAL GROUND FLOOR SLAB DETAIL.

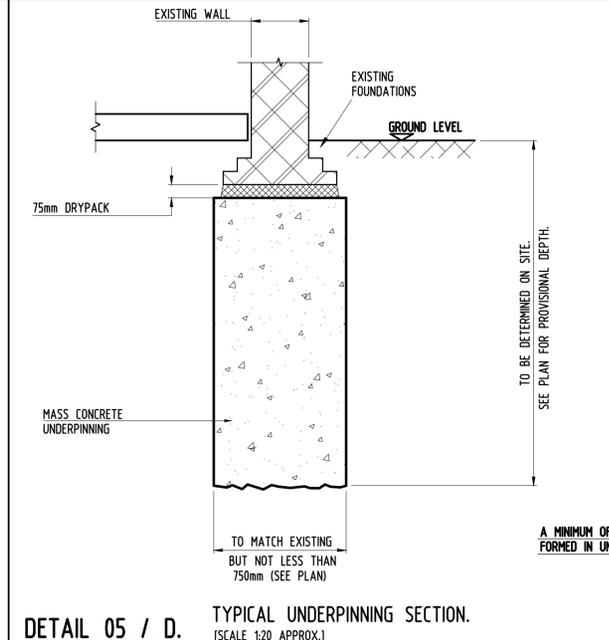


DETAIL 05 / B. TYPICAL SLAB ISOLATION JOINT.

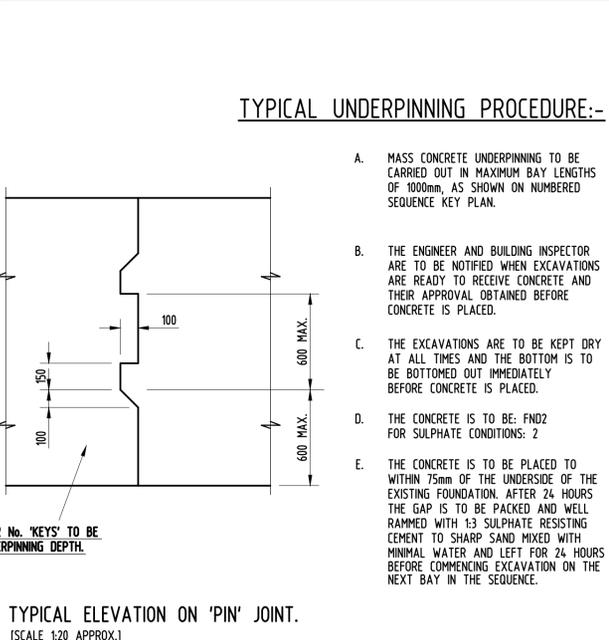
notes  
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FOR A FULL LIST OF GENERAL NOTES REFER TO DRG. 15605/01



DETAIL 05 / C. DETAIL UNDER NON-LOADBEARING PARTITION.



DETAIL 05 / D. TYPICAL UNDERPINNING SECTION. (SCALE 1:20 APPROX.)



TYPICAL ELEVATION ON 'PIN' JOINT. (SCALE 1:20 APPROX.)

TYPICAL UNDERPINNING PROCEDURE:-

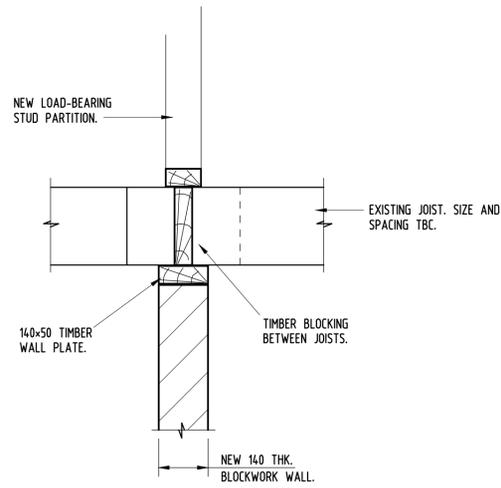
- A. MASS CONCRETE UNDERPINNING TO BE CARRIED OUT IN MAXIMUM BAY LENGTHS OF 1000mm, AS SHOWN ON NUMBERED SEQUENCE KEY PLAN.
- B. THE ENGINEER AND BUILDING INSPECTOR ARE TO BE NOTIFIED WHEN EXCAVATIONS ARE READY TO RECEIVE CONCRETE AND THEIR APPROVAL OBTAINED BEFORE CONCRETE IS PLACED.
- C. THE EXCAVATIONS ARE TO BE KEPT DRY AT ALL TIMES AND THE BOTTOM IS TO BE BOTTOMED OUT IMMEDIATELY BEFORE CONCRETE IS PLACED.
- D. THE CONCRETE IS TO BE: FND2 FOR SULPHATE CONDITIONS: 2
- E. THE CONCRETE IS TO BE PLACED TO WITHIN 75mm OF THE UNDERSIDE OF THE EXISTING FOUNDATION. AFTER 24 HOURS THE GAP IS TO BE PACKED AND WELL RAMMED WITH 1:3 SULPHATE RESISTING CEMENT TO SHARP SAND MIXED WITH MINIMAL WATER AND LEFT FOR 24 HOURS BEFORE COMMENCING EXCAVATION ON THE NEXT BAY IN THE SEQUENCE.

A	SECTION 05/2 - 2 REVISED	25.09.15
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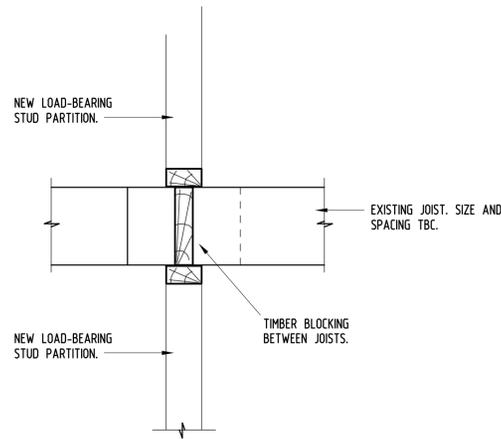
Ellis & Moore  
CONSULTING ENGINEERS  
9th Floor, Hill House,  
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Telephone 020 7281 4821  
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**TENDER**

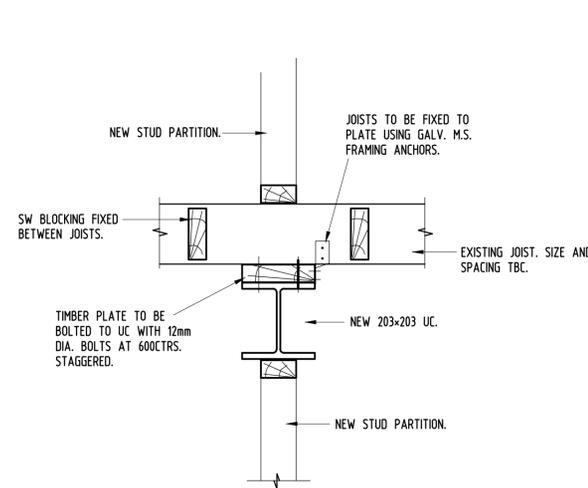
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SUB-STRUCTURE SECTIONS & DETAILS.	
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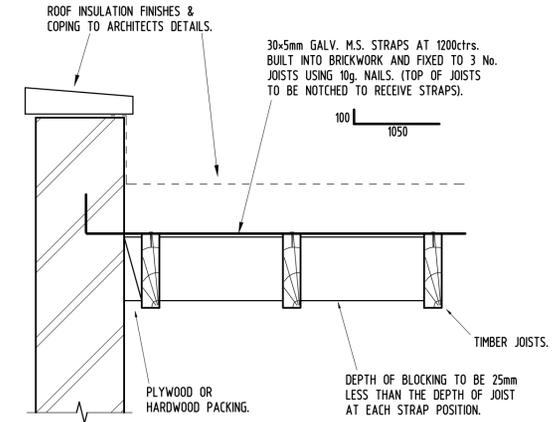
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SECTION 06/2 - 2.

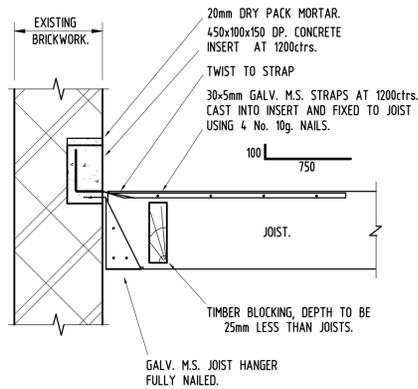


SECTION 06/3 - 3.



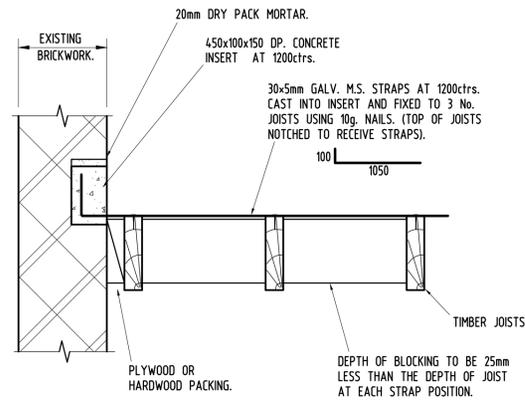
SECTION 06/4 - 4.

notes  
DO NOT SCALE FROM THIS DRAWING  
FOR A FULL LIST OF GENERAL NOTES REFER TO DRG. 15605/01



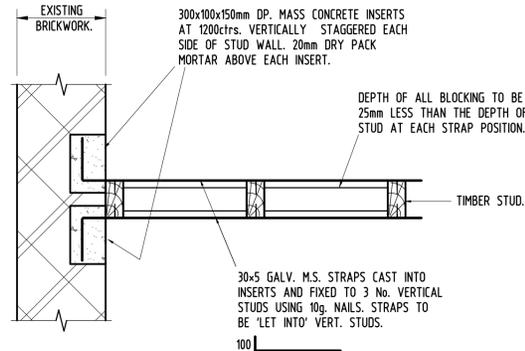
TYPICAL RESTRAINT STRAP DETAIL.

DETAIL 06 / A.



TYPICAL RESTRAINT STRAP DETAIL.

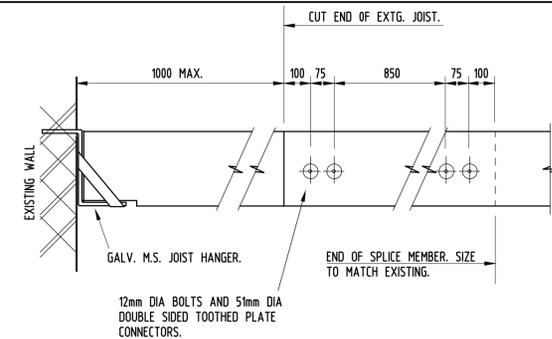
DETAIL 06 / B.



PLAN.

TYPICAL RESTRAINT STRAP DETAIL AT NEW PARTITION.

DETAIL 06 / C.

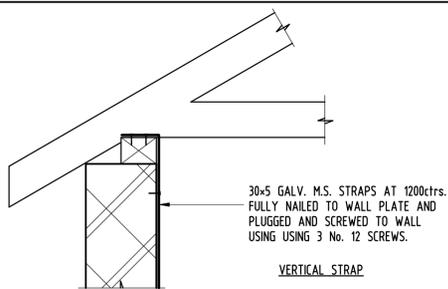


NOTE:  
THE ABOVE DETAIL IS ONLY APPLICABLE WHEN THE FOLLOWING CONDITIONS ARE SATISFIED:  
1. EXISTING JOIST NOT LARGER THAN 225 x 75mm.  
2. JOIST SPACING NOT GREATER THAN 400mm  
3. JOIST SPAN NOT EXCEEDING 5500mm.  
4. LOADING ON JOIST TO BE UNIFORMLY DISTRIBUTED AND COMPRISE ONLY OF FLOOR BOARDING PLASTER CEILING AND DOMESTIC IMPOSED LOADING.  
NOT APPLICABLE TO TRIMMER JOISTS OR JOISTS CARRYING PARTITION LOADING.

TYPICAL JOIST END REPAIR DETAIL - Allow rate.

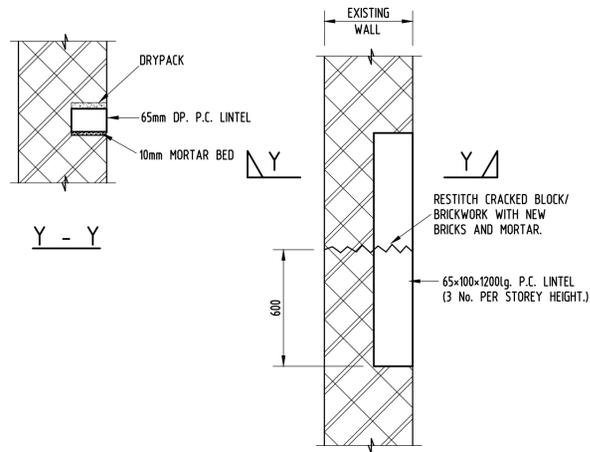
DETAIL 06 / D.

rev.	description	date



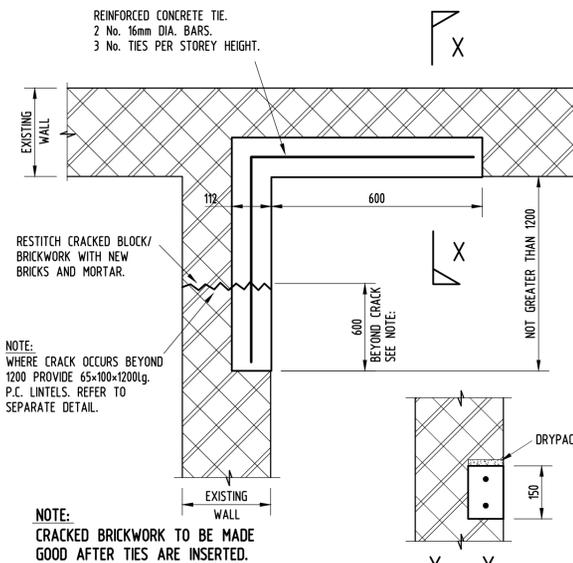
TYPICAL RESTRAINT STRAP DETAIL AT WALL PLATE.

DETAIL 06 / E.



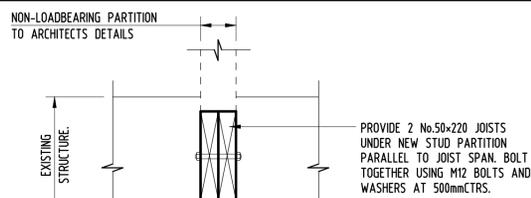
TYPICAL CRACK REPAIR DETAIL - Allow rate.

DETAIL 06 / G.



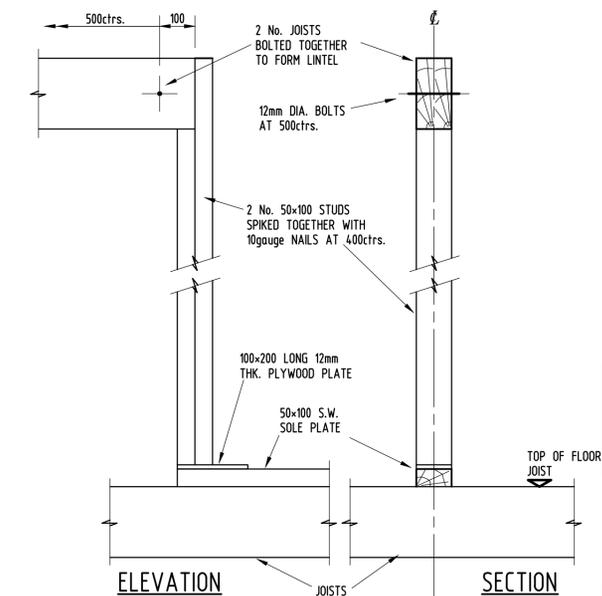
TYPICAL ANGLE BINDER REPAIR DETAIL - Allow rate.

DETAIL 06 / H.



TYPICAL DOUBLE-UP JOISTS UNDER NEW PARTITION.

DETAIL 06 / F.



TYPICAL TIMBER LINTEL SUPPORT DETAIL.

DETAIL 06 / J.

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*TENDER*

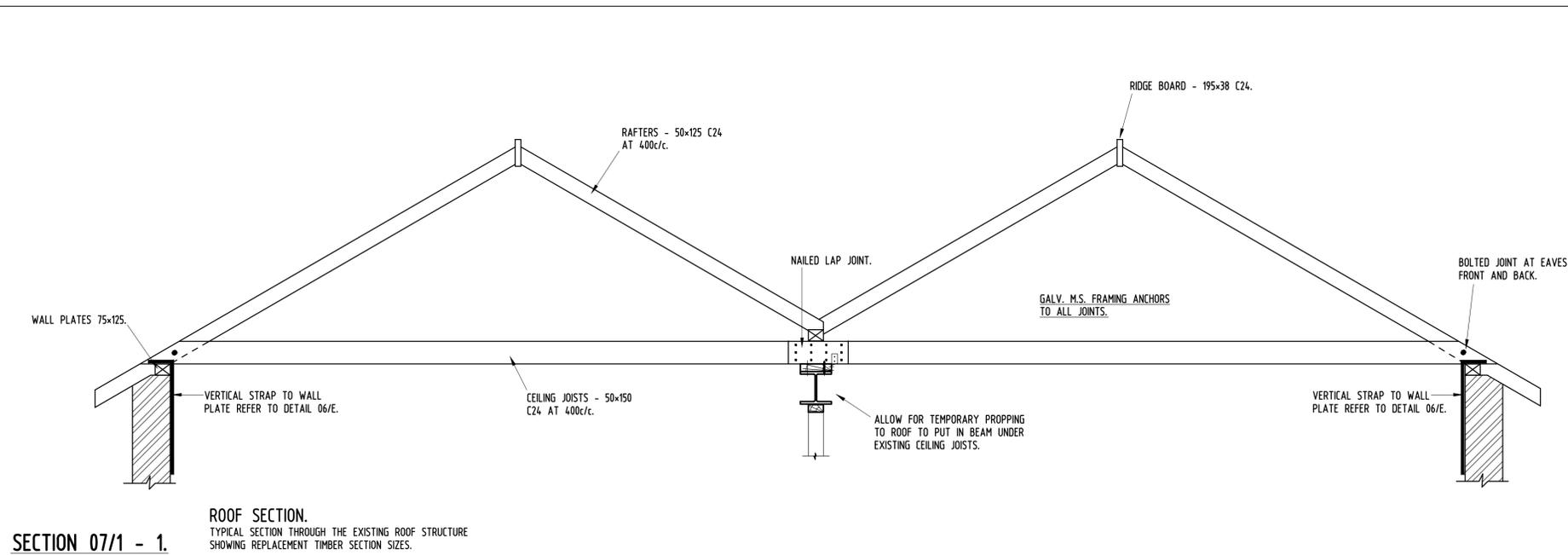
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drawn K.U. checked NL

project 40 - 46 SWEYN ROAD CLIFTONVILLE KENT.

drawing title SUPERSTRUCTURE SECTIONS & DETAILS.

drawing no. 15605 / 06 revision



**SECTION 07/1 - 1.**  
**ROOF SECTION.**  
 TYPICAL SECTION THROUGH THE EXISTING ROOF STRUCTURE SHOWING REPLACEMENT TIMBER SECTION SIZES.

notes  
 DO NOT SCALE FROM THIS DRAWING  
 FOR A FULL LIST OF GENERAL NOTES REFER TO DRG. 15605/01

rev.	description	date

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K.U.	NL

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 KENT.**

drawing title  
**SUPERSTRUCTURE  
 SECTIONS & DETAILS.**

drawing no.	revision
<b>15605 / 07</b>	