

MECHANICAL AND ELECTRICAL SERVICES PROPOSALS

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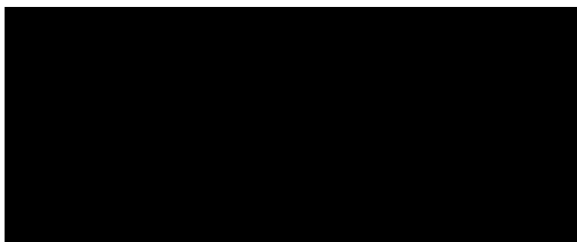
RIBA STAGE 2

FOR THE

BOOKER HALL, RUSTINGTON

Project N°: 4558
Revision: P1
Date: July 2021
Client: Studio Scott Taylor

Pope Consulting Ltd
Building Services Consulting Engineers
1 North Pallant
Chichester
West Sussex PO19 1TL



DOCUMENT REVISION SHEET**ORIGINAL**

Prepared by:	Neil Champion	Date	July 2021
Checked by:	Jack Alexander	Date	July 2021

REVISIONS

Rev.	Pages Revised & Re-Issued	Date	Checked
P1	Preliminary Issue	21/07/21	NC

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2.0 PROPOSALS

1.0 OUTLINE

It is proposed to build a new community hall and office space at Oakhurst gardens for Littlehampton & Rustington Housing Society.

The client has expressed a wish for the building to be energy and carbon efficient and to be simple to operate and maintain.

This report has been produced to set out the Mechanical and Electrical services strategy to ensure compliance with client needs and statutory requirements.

This document has been developed from the current architectural scheme and from the initial discussion between the Client, Architect and Pope Consulting Ltd.

2.0 PROPOSALS

2.1 Design Standards & Codes

The design of the building services installations will comply with the following industry codes and standards; these will be identified within the final M&E tender documents:

- ✓ British Standard Specification (BS) and European Standards (BS EN)
- ✓ British Standard Code of Practice
- ✓ CIBSE Guides to Current Practice and Technical Memorandum
- ✓ Institute of Engineering and Technology Regulations (IET) (BS 7671)
- ✓ Institute of Plumbing and Heating Design Guide
- ✓ Water Supply (Water Fittings) Regulations and Water Byelaws
- ✓ The Building Regulations
- ✓ Loss Prevention Council (LPC)
- ✓ Building Research Establishment (BRE) Digest Recommendations
- ✓ Building Services Research and Information Association (BSRIA) recommendations and guides
- ✓ Local Bye-Laws and/or Regulations
- ✓ Manufacturer's instructions and recommendations for installing/testing
- ✓ Health and Safety at Work Act
- ✓ CDM

2.2 Statutory Authorities Services

As this is a new building within an existing site complex it may be possible to provide the new electrical and water connections from existing supplies on site, however if sufficient capacity is not available new supplies would be obtained from the statutory authorities. The preferred route will be confirmed subject to design development.

2.3 Mains Power Distribution

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A new power supply will be brought into the building from below ground into the services areas and will feed distribution boards with RCBO protection located as required throughout the building.

2.4 Mains Water Distribution

A new mains water service will be provided which will directly serve the entire building to ensure water quality and pressure.

2.5 Heating

Heating will be provided by underfloor heating, comprising local Low Pressure Hot Water (LPHW) flow and return manifolds mounted in service cupboards distributing to a system of oxygen barriered plastic pipes buried in the floor screed. Rooms will be zoned and controlled with thermostats operating automatic valves in the manifold.

LPHW will be provided to the heating and hot water system, (see below) from a number of Air Source Heat Pumps, (ASHP) located to the rear of the building.



An ASHP can provide an efficient heating climate by converting solar energy stored in the air into energy, providing useful heat. ASHP's absorb heat from the outside air by passing refrigerant through a heating coil with a fan blowing across it. Heat from the air is absorbed at low temperature into the refrigerant, this passes through a compressor where its temperature is increased and transferred to LPHW to heat the building.

ASHPs are increasingly being used across the UK as they are recognized as a renewable low carbon technology. Additionally, as an electrically driven piece of technology, the ASHP's carbon reduction performance will increase as the UK electricity grid decarbonises in future years.

2.6 Hot Water

The hot water demands for the building are relatively low with only a few wash hand basins and a small kitchen, it is proposed therefore that the ASHP will be utilised to provide the hot water for one end of the building with direct local electrical water heaters used for the other end.

2.7 Ventilation

Ventilation will be generally natural, via openable windows, doors and skylights. Sanitary rooms and the kitchen will be provided with local occupancy-controlled extract fans either wall mounted or ducted through ceiling voids to external wall grilles.

2.8 Above Ground Drainage

Above ground drainage will be run in plastic from sanitary appliance at local stub stacks of soil vent pipes.

The last manhole on the run will be ventilated to atmosphere via a soil vent pipe to above roof level.

2.9 Solar Photovoltaics PV

At present solar PV's are being considered for the west facing roof slope of the building, however their inclusion will be confirmed further to detailed design and costings.

Solar PV systems use cells to convert daylight into electricity. PV cells consist of layers of a semi-conducting material, usually silicon. When light shines on the cell it creates an electric field across the layers causing electricity to flow. The greater the intensity of the light, the greater the flow of electricity. The PV Modules gather solar energy in the form of daylight and convert it into direct current (DC) electricity. The inverter converts DC power into alternating current (AC) power, which is the type of electricity used in your premises.



As Solar PV systems do not require direct sunlight to generate power, these systems can work well in UK installations with year-round generation. Although largely dependent on available roof space and orientation of building.

2.10 Lighting

To ensure energy efficiency, lighting within sanitary accommodation, corridors etc will be controlled by automatic occupancy detection.

In other areas local manual switching will be used.

Where door hold open devices are installed to general circulation doors, these holders will release in the event of an alert signal, to maintain fire integrity of the area.

At present we do not envisage that a refuge intercom system will be required. This may be required following development of the fire strategy and evacuation plan.

Wiring of the system will be carried out by the use of soft skin cable fitted with a red coloured sheath.

2.15 Telephone / Data

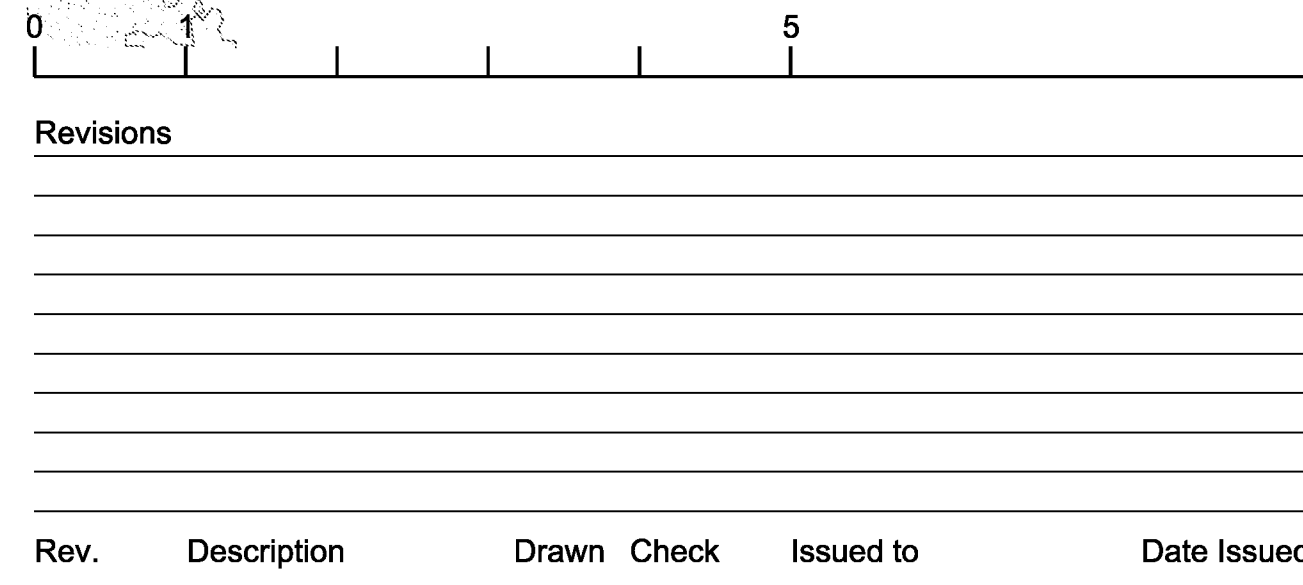
A Cat 5e or 6e UTP Ethernet cabled data network and telephone distribution network shall be installed into the facility to provide simple phone and data functionality.

There will be provision for WIFI or Ethernet access throughout the facility.

2.16 Distress Alarm

A distress alarm will be installed within the assessable toilet, with remote indication panel located within the entrance foyer.

Air Source Heat Pumps



Do not scale from drawings.

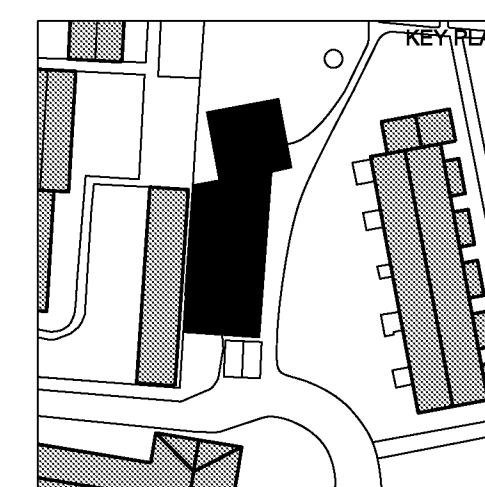
Errors to be reported immediately to the Architect.

To be read in conjunction with all relevant Architects', Services and Structural Engineers' drawings, schedules and specifications

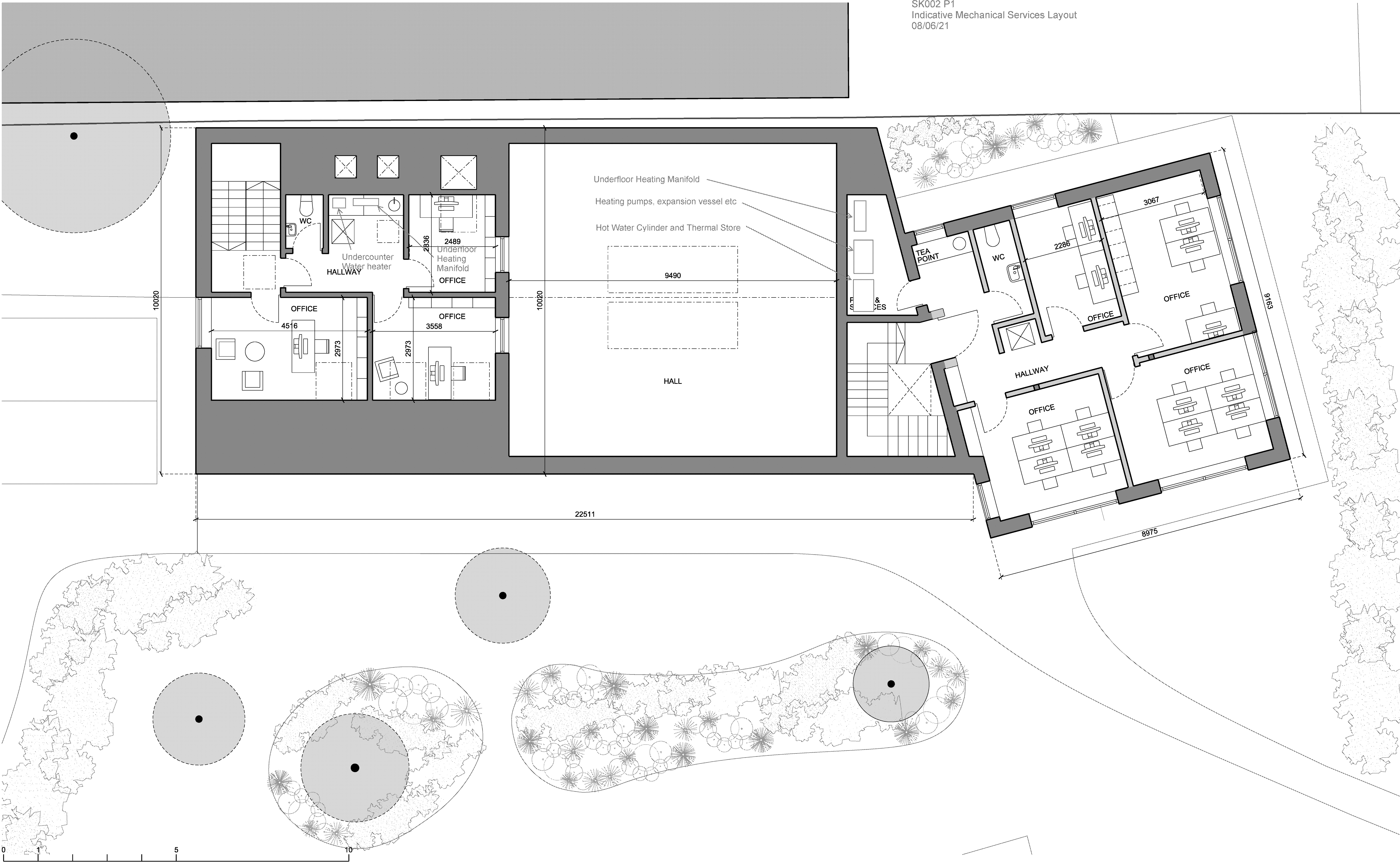
All existing site, tree and building information has been compiled from different sources.

All dimensions to be checked on site.

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Project	Oakhurst Hall Oakhurst Gardens Littlehampton & Rustington Housing Society			Project No.
				012
Client	Littlehampton & Rustington Housing Society			
Date:	25/ 03 / 2021	Drawn	ES	Issue
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CAD Reference:	Approved			
Drawing Name:	Proposed Ground floor plan	Drawing No.	012_P_20_00	

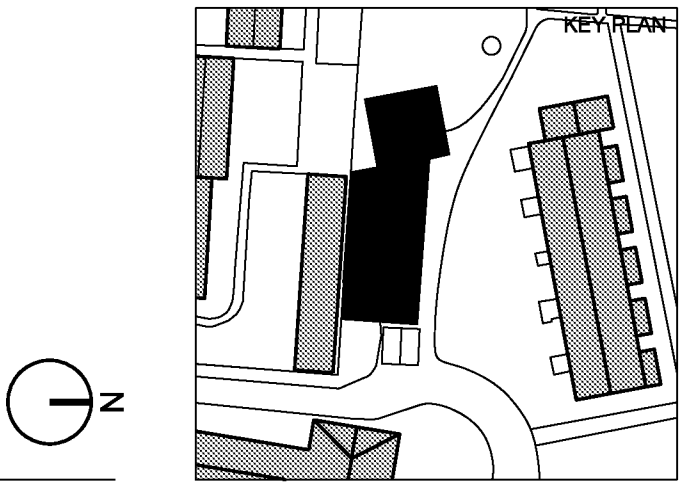


Revisions				
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				Date Issued

Notes

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STUDIO SCOTT TAYLOR



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Date:	25/ 03 / 2021	Drawn	ES
Scale / Format:	1:50 @ A1 1:100 @ A3	Checked	JT
CAD Reference:	Approved		
Drawing Name:	Proposed First floor plan	Drawing No.	012_P_20_01