33 Thomas Street
Energy Statement

Client	Back Room Architecture
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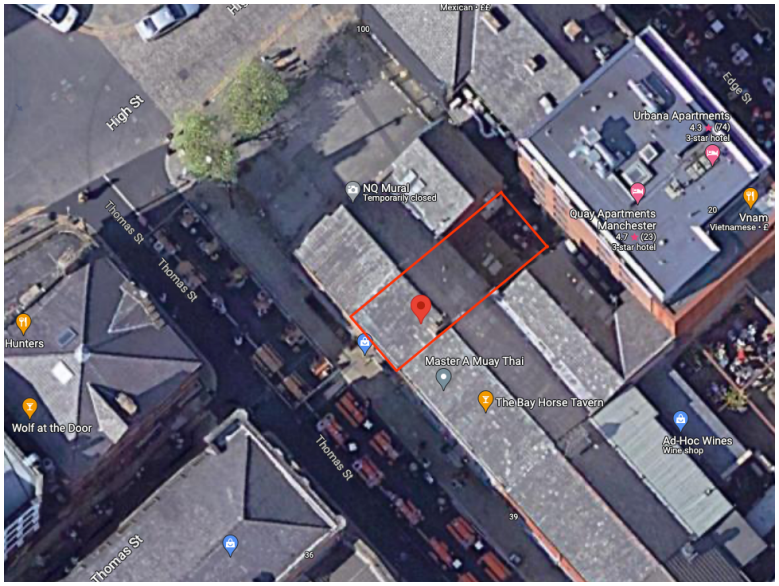
1.0 Introduction

This report details the proposed energy systems set out in the Stage 3 MEP Design. This document is to serve as a statement of the proposals for the MEP Systems only.

The building is located at 33 Thomas St, Northern Quarter, Manchester. The plot is a terraced property set over 4 No. floors comprising of basement, Ground, First & Second Floors. The building is listed and of special heritage interest.

The proposed scheme sees the plot altered to provide the below:

- Basement level storerooms and toilet facilities
- Ground floor Café and kitchen facilities
- First & Second floors utilised as a dwelling.

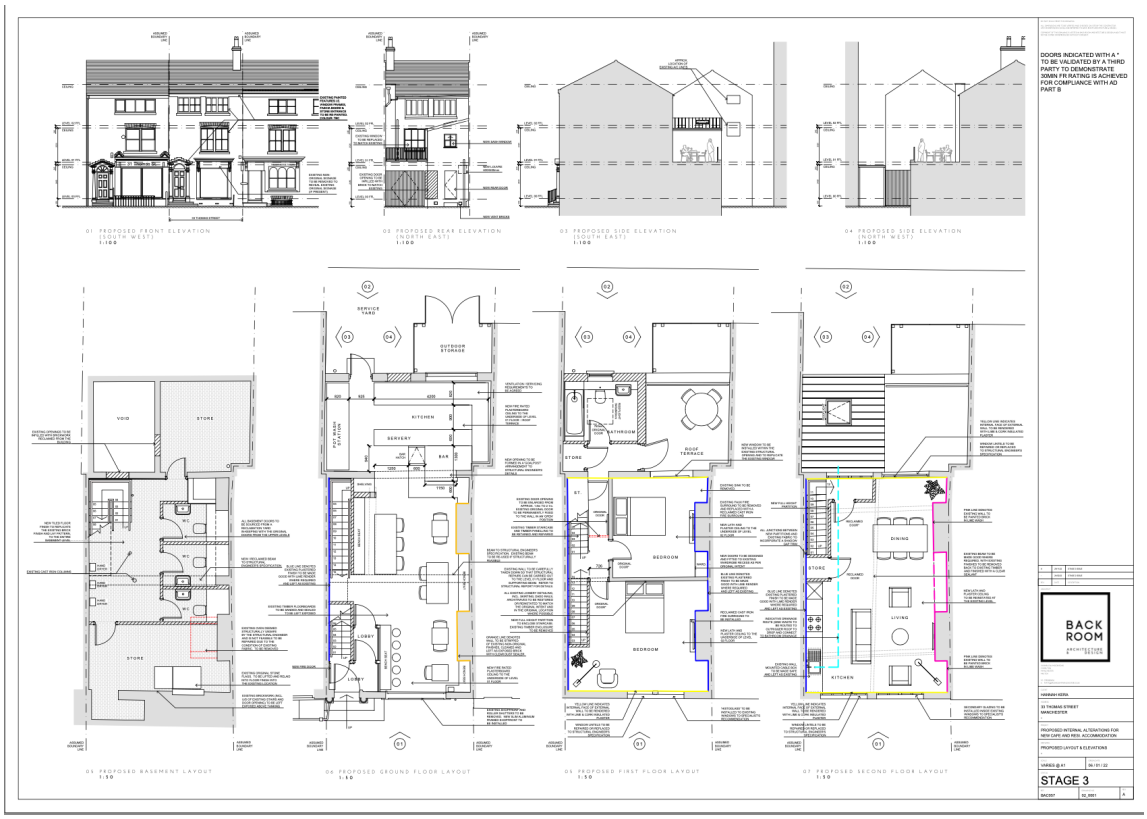


This Specification shall be read together with all other contract documentation and the following:

1. MEP Stage 3 Drawings
2. Architectural layout drawings

2.0 Proposed Building Layout

As outlined in the introduction the building is set to be developed to incorporate a café at the ground floor with toilet facilities provided at basement level. The First and second floors are to be once single dwelling as per the Architectural layouts below.



3.0 Proposed MEP Energy Systems

3.1 Mechanical Ventilation with Heat Recovery (MVHR)

Mechanical ventilation with heat recovery (MVHR) system will be specified in the dwelling to maintain a healthy living environment and further reduce the heat losses and the energy demand of the apartments. The proposed MVHR system can recover up to 93% of heat from the extracted stale air from the dwelling by using a counter flow heat exchanger which 'pre- heats' cool incoming, fresh air. The outgoing and incoming air pass next to each other, but do not mix.

Withing the Café area a HRU (Heat Recovery unit) is shown to provide supply & extract to the commercial space. The warm extracted air will recover heat via a counter flow heat exchanger which 'pre- heats' cool incoming, fresh air. The outgoing and incoming air pass next to each other, but do not mix.

3.2 Wastewater Heat Recovery (WWHR)

A wastewater heat recovery system is proposed to be utilised to the waste from the shower within the dwelling. This system uses a heat exchanger sleeve fixed around the wastewater pipe to pre heat the water provided to the shower mixer valve thus reducing the amount of hot water needed to reach the desired output temperature of the shower.

The preheated water from the shower waste can also be used to provide a supply to the domestic hot water (DHW) cylinder thus reducing the amount of energy required to reach the set point of the DHW cylinder.

3.3 Electric Heating

Electric heating is proposed for the dwelling and Café and is 100% efficient at the point of consumption. The UK government is committed to reducing the country's emissions and has legislated to do so within the Climate Change Act. As the UK's grid becomes less carbon intense over time the carbon dioxide emissions associated with full electric heating will reduce.

Electric Panel heaters are specified to provide space heating to the dwelling and electrically powered refrigerant Heat pump providing both heating & cooling within the café area.

3.4 LED Lighting

LED lighting is to be utilised throughout the development, these fittings feature low wattage, high lumen output thus achieving the required Lux levels in each location whilst reducing energy usage against traditional lamps.

3.5 A and A+ Rated White Goods

The provision of A and A+ rated white goods and appliances should be explored for this development both in the dwelling and the café.

3.6 Water Consumption

A water efficiency strategy will be determined for the site. This will include 'A' rated appliances (where provided);

Specification of water efficient fixtures throughout the scheme (low flow taps and showers, dual flush WCs and low volume baths); and, in order to reduce the demand the sanitary fixtures will be specified to achieve a calculated daily consumption of <125litres/person/day in accordance with the regulatory standard.

3.7 Café Heating & Cooling

The café is to be provided with refrigerant heat pump providing both heating and cooling to the space. This unit will feature a high COP (Coefficient of Performance) resulting in high levels of heating & Cooling output from reduced levels of electrical energy input.

3.8 Heating Programming & Controls

Controls are to be utilised to the building services systems to provide control and efficiency to the systems.

Electric Panel Heaters

All space heating provided by Electrical panel heaters are to be provided with local timer and temperature control including thermostatic control to turn the heating off once the set point is reached.

Domestic Hot Water

Domestic Hot Water (DHW) Cylinder is to be provided with timer and thermostatic controls to allow for automatic management of the Hot water system, by utilising these control methods the water is heated when required and to the required set point. All statutory documentation regarding legionnaires disease is to be followed for the DHW systems.

Café Heat Pump

The café heat pump system will be provided with wall mounted controller to allow control to the users to control the temperature within the space. A return air sensor is to be incorporated to automatically manage the temperate once the desired set point is reached.

3.0 Conclusion

In conclusion, the outline proposals reviewed within this energy statement for the development at 33 Thomas St, Northern Quarter, Manchester would provide sustainable approach to the MEP systems with the aim of reducing usage and ensuring efficiency of the proposed systems.