Environmental standards statement

House, New Islington, Phase 3
PA1465

Consulting Engineers

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Ref: PA1465
Revision: D
Date: March 2020

CONTROLLED DOCUMENT			
The Associates Document No:	PA1465		
Status:	Preliminary	*Copy No:*	
	Name	*Signature*	*Date*
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Client Approved:			

Revision Record					
Rev.	*Date*	*By*	*Summary of Changes*	*Chkd*	*Aprd*
A	7/03/20	NG	Initial issue	PN	NT
B	16.03.20	NG	Updated with u Values	NT	PN
C	23/03/20	NG	Updated US comments		
D	23/03/20	NG	Title changed		

Contents

1.0 Introduction 4
2.0 The Low Carbon Design Hierarchy 5
2.1 Lean – Building Passive Measures 5
2.2 'CLEAN' – Design Measures 6
2.3 GREEN' – Renewables / Low Carbon Technologies 6
3.0 conclusion 7
4.0 MVHR Panel Heaters 8

1.0 Introduction

TACE have been appointed to provide an environmental standards statement for planning purposes on a new residential development at House, New Islington, Phase 3.

The project consists of 21 residential houses built “off site”. The residential units will need to meet the standard as set out within Approved Document Part L1A 2013, with amendments of 2016.

Planning policy

The development will need to respond to the guidance set out in the Manchester local plan which includes a planning guidance document adopted in 2007 and the core policy document 2012.

It should also be noted that Manchester city council have issued guidance on future climate change with a view to meeting zero carbon by 2038.Whilst this is not set out in detail it provides guidance on climate change.

The scheme proposals are all electric and therefore have provided compliance with reference to the existing legislation and future proofed the scheme for the forthcoming changes.

This will be evident as the future homes act is brought into guidance documents..

In residential properties compliance is demonstrated using SAP calculations.

What is SAP?

The Standard Assessment Procedure (SAP) is the UK Government's recommended method system for measuring the energy rating of residential dwellings.

Building Regulations require that design stage SAP calculations and Energy Performance Certificate are produced prior to the development.

A SAP calculation indicates a score for the annual energy cost based on:

- The elements of structure
- The heating and hot water system
- The internal lighting
- The renewable technologies used in the home.

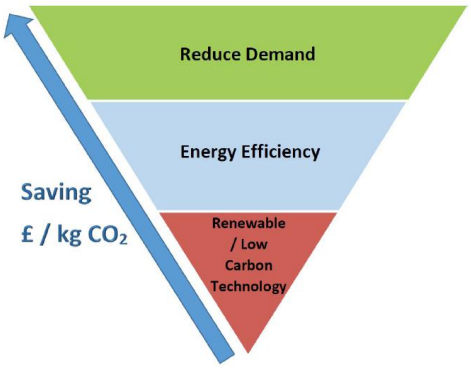
SAP calculations allow a comparison to be made of the energy running costs of dwellings anywhere in the UK. This is achieved because the calculations are predominantly location independent and are based upon a notional standard occupancy that overcomes variations associated with physical location and the differing ways in which people utilise their homes.

A SAP calculation for a new dwelling is a desktop exercise, the client or their designer submits drawings, plans and specifications of the development to the assessor. It is recommended that the SAP calculation is undertaken early in the design process, this will help to prevent any costly redesign of the dwelling.

2.0 The Low Carbon Design Hierarchy

The strategy for reducing carbon dioxide (CO2) emissions and energy consumption within the housing development will be to embrace a lean, mean and green approach as defined below.

- Lean – the use of advanced building modelling software and passive construction techniques.
- Mean – Incorporation of high-efficiency systems and effective controls throughout the design.
- Green – Incorporation of renewable energy sources where possible



2.1 Lean – Building Passive Measures

The passive measures are to be included within the design of the residential development are to reduce energy use and the associated CO2 emissions are;

- Improved building fabric parameters over those required by Building Regulations
- Windows with high thermal insulation
- Improved air permeability
- Maximisation of daylight
- Optimise glazing solar energy transmittance

Enhanced Insulation to The Building Envelope
Limiting heat losses across the entire building envelope will future proof the energy efficiency of the development over its whole life. To achieve this, the fabric thermal U-Value requirements as detailed within Approved Document L1A 2013 of the Building Regulations will be improved upon.

The table below shows the limiting U-values required to meet Building Regulations compared to the targeted values which exceed the Building Regulations requirements.

2 Fabric U-values

Element	Average	Highest
External wall	0.15 (max. 0.30)	0.15 (max. 0.70)
Party wall	0.00 (max. 0.20)	-
Floor	0.15 (max. 0.25)	0.15 (max. 0.70)
Roof	0.10 (max. 0.20)	0.10 (max. 0.35)
Openings	1.23 (max. 2.00)	1.72 (max. 3.30)

The targeted values as noted will be confirmed during the detailed design stage of the building in conjunction with finalisation of the energy efficiency measures included to meet the CO2 emission rates required by Building Regulations.

All the new dwellings will be highly energy efficient and be constructed to exceed current Building Regulations Standards.

It is our intent that all new schemes are to utilise low carbon energy where possible. This means the dwellings will not use gas combi boilers as might be typically expected. This is because the latest figures for the carbon 'content' of off-grid electricity are now lower than that for gas:

2.2 'CLEAN' – Design Measures

Ventilation

All areas shall be ventilated to ensure compliance with TM59 and mitigate overheating. Mechanical ventilation will be provided.

Daylighting and Lighting

Daylighting should be optimised to reduce reliance on artificial lighting and luminaires. 100% Energy efficient lamps and LED lighting will be used throughout the scheme.

2.3 GREEN' – Renewables / Low Carbon Technologies

At this stage, under Part L1a 2013 PV panels have not been proposed for the new development.

3.0 Conclusion

The energy strategy for this development is summarised as below and our recommendations include:

- Include high thermal performing fabrics beyond Part L 2013
- Increased airtightness of the building
- Utilise mechanical ventilation with heat recovery
- LED lighting with automatic controls

4.0 MVHR Panel Heaters

Electrical heating and hot water with central mechanical ventilation (MVHR).

System Description:

The proposal would be local electrical panel heaters with a central hot water cylinder for hot water. The House would be ventilated with an internally mounted whole house ventilation heat recovery unit.