

LANZA

Architects

SUSTAINABILITY STATEMENT FOR CORA MARIA, NEW BARN LANE, GL52 3LU



To be read in conjunction with the following documents;

610-01 Survey Site Plan
610-02 Survey Ground and First Floor Plans
610-04 Survey Elevations

2402 PL01 Site / Block Plan
2402 PL02 Proposed Floor Plans
2402 PL03 Proposed Elevations

Design and Access Statement

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1.0 Introduction

- 1.1 Cora Maria is located in the area of Prestbury under Cheltenham Borough Council. The property is a detached dwelling constructed in the late 1950's.
- 1.2 The dwelling is of brick cavity wall construction with plain clay tiled roof. The internal layout comprises a hall, sitting room, dining room, kitchen and WC. To the first floor, there are three bedrooms and two bathrooms. There is a single garage attached to the north elevation.
- 1.3 As the building is existing, there is limited opportunities to greatly impact the thermal efficiency of the building, however, the following key measures have been considered.

2.0 Key Measures

2.1 Site and Orientation:

The orientation of the existing building is due North-South. This document outlines the ways the applicant has sought to maximise the potential of the building in terms of sustainability.

The two storey extension positioned to the South, extends into the larger part of the site and maximises the south pitch by proposing solar panels on the roof of the extension.

Rooflights are proposed on the north pitch to provide additional light onto the landing and on the East pitch into the new ensuite bathroom.



2.2 Overheating:

The existing windows are single glazed metal frames with poor thermal qualities. The South elevation area of glazing has been reduced when compared to the existing, to reduce overheating. In line with Building Regulations Part K, protection from falling and to reduce overheating from excessive glazing, cills of the existing windows will be raised by 300mm which will reduce the amount of glazing.

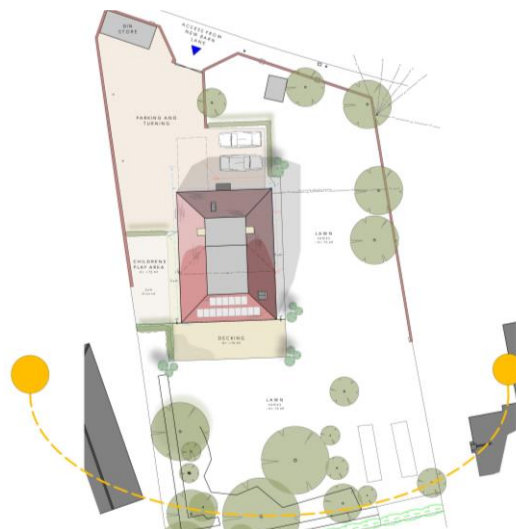
All new windows and rooflights are openable to ensure each room has constant ventilation. In the proposed open plan living and kitchen area, there are three openable windows at different areas of the room to ensure adjacent wall ventilation.



In addition to providing adequate ventilation, the new structure will be well-insulated to meet the new Part L Building Regulations for dwellings. This increased insulation will not only prevent the thermal mass of the extension from overheating but it will improve the thermal qualities of the house as a whole, particularly by enveloping the existing external walls to the south.

2.3 Efficient Building Form:

The proposed two storey extension to the south is a more efficient form of building, reducing the number of external walls and thus maximizing thermal efficiency.



Proposed Site Plan.

2.4 Building Fabric and Detailing:

Insulation is a key part of sustainability; it serves to conserve energy by minimising the escape of heat from the building. Due to the age of the building, heat loss is a principal issue in this dwelling. As part of these proposals, insulation will be introduced within the walls and roofs to create a thermally insulated building. All windows and doors will be replaced and these will meet current u-values.

The proposed construction method of the scheme is concrete block with insulated cavity and externally rendered. Concrete block has a high thermal mass and therefore helps to regulate the temperatures. All joints will be packed with insulation to minimise thermal bridging.

2.5 Airtightness:

Joints between insulation and finishes will be taped to prevent the loss of heat through air gaps. MVHR is not suitable for this project due to its retrofit status and the risk of air gaps within the existing structure.

2.6 Low Carbon Heat:

Communal heating is not an option in this scenario and due to the age and the nature of the existing building, a gas boiler will need to be retained. However, a new boiler will be installed to meet new regulations and which will be much more efficient to run thus using less carbon to heat the dwelling.

With the added thermal efficiency of the building, it is expected that less heat will need to be generated to provide the required warmth for the dwelling.

2.7 Renewable Energy:

The only viable renewable resource for this building is Solar Panels (PV) and these are proposed to be installed on the south pitch, subject to initial installation costs.

3.0 Water Efficiency

New taps will be fitted with flow rate limiters, to ensure maximum flow rates are in line with current building regulations. All pipework will be insulated to prevent heat loss and where possible pipe runs shortened to minimise pipe lengths and loss of heat.

A rainwater butt will be fitted to a downpipe on the east elevation to provide water to irrigate the garden.

4.0 Transport and Travel

An electric car charging point is not required for the applicant, however is a possibility for the future should the applicant wish to install one.

5.0 Ecology and Biodiversity

As part of the renovations, the client will plant the garden with bee-friendly flowers and encourage wild-life with bird baths and feeders.

6.0 Materials and Embodied Carbon

The main structural building material is masonry, not only due to its thermal mass properties but due to its strength. Masonry block has a design structure of 100% utilisation and spans are minimised in the scheme to avoid the excessive use of steel.

END OF STATEMENT

Date: 26th March 2024

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