



Number
075/001

Client
Mr and Mrs Franklin

Project
New Garden Room @
3 Overdale Grange
Skipton
BD23 6AG

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Revision

Sustainable Design and Construction Statement

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Introduction

This document has been provided to assess and explain the sustainable design and impact of the proposed extension.

The United Nation's definition of sustainability is, 'Sustainability calls for a decent standard of living for everyone today without compromising the needs of future generations'

(from <http://www.un.org/en/sustainablefuture/sustainability.shtml>)

The correct design and choice of construction materials will ensure that any construction project will not only have minimal impact during construction but throughout it's life and beyond.

During all stages, the triple bottom line (social, economic and environmental impact) has been fully considered by Michael Carr Building Design and Construction.

Design

The extension has several sustainable features included within the design.

The windows and rooflights to the South Elevation have been positioned to allow natural light and heat into the new extension minimising the needs for artificial lighting and extra heating. The rooflights are Velux style and the windows are standard allowing blinds to be fitted easily. If the sun is shining and the room becomes too hot, then the blinds can be drawn and reduce the solar gains. The rooflights, windows and doors can be opened to let excess heat escape meaning no mechanical cooling is required (such as air conditioning).

The doors from the existing living room to the new extension will remain in place to minimise any heat loss from the original house.

The windows, doors, roof glazing in the West and North Elevation will provide natural light for the extension minimising the needs for artificial light.

The amount of natural light in the extension has purposely been over designed to allow this natural light to filter through into the existing living room ensuring adequate natural light and reducing the need for artificial light.

Construction and materials

The extension will be constructed to current Building Regulation standards or better.

A SAP calc will be provided to Building Control (if requested) ensuring the Design and As Built extension meet all heat loss and energy reduction requirements.

All glazed elements will be to current standards or better with thermal bridging minimised through good detailing and competent contractors.

Heating will be provided by an extension of the existing heating system. The current boiler is relatively new and in good working order. A new system was considered but the embodied energy that went into making the current boiler would be lost if it is to be replaced. A new heat source would then be required with its own embodied energy along with the rucksack value encountered whilst obtaining the component parts, manufacture, and fitting. This would currently create a negative impact environmentally. Once the current boiler has reached the end of its natural life (or become so inefficient compared to the latest heat source) it can be replaced easily with the most energy efficient solution of the time.

Insulation will be provided into each element of the construction in the form of solid board insulation. Although this has a greater rucksack and embodied energy than some alternative insulation products the overall heat loss is less over its lifetime making it ultimately an environmentally positive product over its lifespan.

Materials and labour for the project will be sourced locally where possible reducing the transport mileage and actively engaging with the local economy.

Water butts will be introduced to down pipes for rainwater storage for use on the garden and a new tree is proposed to be planted. Water storage will reduce the amount of water going into the water course reducing the flood risk and the new tree will soak up excess water from the ground. The tree will also capture and store carbon from the atmosphere.

Sustainability

The development as a whole, is sustainable as it creates an extension to an existing building on an already developed site. The extension creates a link from the house to the garden and outdoor space. The internal spaces can be easily adapted for different purposes and for people in different stages of their life and can be classed as a 'forever home'. The proposed extension is a well-proportioned addition to the existing dwelling meaning there is adequate surrounding external amenity space left for the current occupier and future occupiers to enjoy. The garden (especially in this current pandemic) is crucial for fitness and mental health and will be for future generations to come. The extension is single story on the rear of the property and careful consideration was undertaken to ensure the impact on surrounding houses was reduced as much as possible.

Conclusion

As highlighted above the scheme fully considered the triple bottom line in terms of the environmental, economic and social impact and is deemed to balance the three criteria well.