

Design and Access Statement

E4905 105 Pound Lane, Sonning, RG4 6GG



March 2026
Rev A

Contents

Introduction	4
Site Analysis	5
Site Photos	6
Design.....	7
Concept	7
Use	7
Amount	8
Scale	9
Layout.....	10
Landscaping.....	11
Appearance	12
Access.....	13
Vehicular and transport links	13
Inclusive access	13
Sustainability.....	14
Passivhaus	15
Summary	16

By
Eco Design Consultants
South Pavilion, MK Art Centre,
Parklands, Great Linford,
Milton Keynes,
MK14 5DZ

Client	N & T	Project Number	E4905
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 Architects & Environmental Consultants			

Introduction

This application is for the thermal upgrade of a 4-bedroom family home at 105 Pound Lane Sonning. The house is a 1960s chalet bungalow that is currently very cold and draughty in the winter and prone to overheating in the summer months.

The property benefits from a large plot with mature trees, giving privacy and seclusion from the main road. Along the south boundary the main line between Reading and London runs, at times it can be loud especially during engineering works and freight trains, Installing triple glazed windows will improve sound levels within the home.

It is proposed to improve the thermal performance of the home by adding external wall insulation, roof insulation, installing an MVHR, reducing some windows sizes and removing the garden room to improve the homes form factor. This will makes a significant impact on the homes comfort, whilst reducing its carbon footprint.

The home has been modelled in the Passivhaus planning package and it is hoped that it will achieve either the AECB Carbonlite retrofit standard or ideally the Passivhaus retrofit standard of EnerPHit.

Pre-planning feedback

Character and Design

'In this case the maximum eaves height and ridge height of the main dwelling would only be increased by approximately 0.25m and the rhythm of buildings along the street frontages would not be interrupted as a result. The front porch would project approximately 1m forward of the building line and would be single storey. The width and height of the proposed front dormer extension would be in line with existing. Furthermore, the alterations to the garage will not increase the footprint and would be mainly screened from public view by the green vegetation on the front boundary. Specifications of the external appearance of the new insulation/cladding system should be provided for assessment with any subsequent planning application.'

Details of the proposed materials and detail of proposed EWI wall build up can be found on page 15 of this report.

Car Parking

'The submitted plans indicate that the site frontage and the proposed garage spaces have sufficient space to accommodate the required parking provision.'

Car parking details have been added to the site plan, confirming the plot complies with the parking standards.

Cycle Parking

'In line with WBC Parking Standards, a dwelling with 8 or more habitable rooms requires 3 cycle parking spaces. The applicant shall indicate garage of suitable dimensions (3m x 7m or 4m x 6m), the

location of secure and covered cycle storage of suitable size.'

The location of the allocated cycle parking has been added to the site plan (within the garage) to demonstrate compliance with the cycle parking standard.

Ecology

'The site is located within habitat that matches that where bat roosts have been found in the borough and in an area of moderate suitability for commuting and foraging bats.'

A preliminary roost assessment has been carried out and the report supplied with this planning application. No evidence was found for the presence of bats on site.

Trees

'The Proposed Site Plan indicates removal of some vegetation on the southern boundary adjacent to railway land to facilitate a new retaining wall and associated infill behind the wall. If an application is submitted, we will need details of the extent of vegetation removal, retaining wall and replacement planting along the southern boundary in accordance with Local Plan policy CC03. It would be helpful for several cross-sections to also be included in association with plans.'

Tree survey and landscape plans have been submitted with this application and several cross sections.

Site Analysis

Site Photos

The house is a 1960's chalet bungalow with a brick base, white UPVC cladded dormers and plain clay tile roof. The windows and doors are double glazed with white UPVC frames.



Figure 1 front of house



Figure 2 Back of house



Figure 6- current set back living room wall

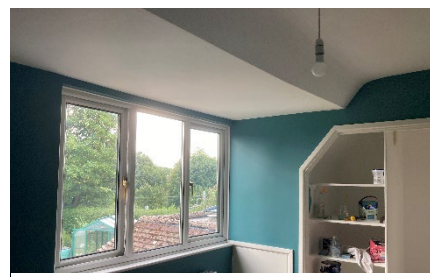


Figure 5- dormer window, no space to add curtain above window



Figure 4- dark living room space

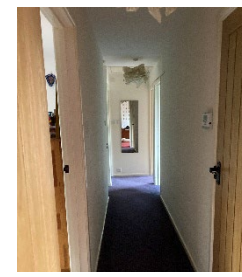


Figure 3- narrow, dark landing upstairs

Design

Concept

The design concept is to update the house whilst providing a traditional vernacular more balanced appearance. The improved thermal comfort, from the insulation and other improvements to the home future proof it against increasing energy costs. The garden room has been removed to the rear to improve the heat loss of the home and increase the light levels in the living room. The flat roofs on the dormers are all being replaced with pitched roofs to reduce maintenance and improve aesthetics.



Figure 8- AI created impression of proposed front elevation



Figure 7- AI created impression of proposed rear elevation

Use

The property is a residential dwelling; this application doesn't seek to change this.

Amount

The house currently has an internal floor area of 214m²
The proposed floor area is 196m² by removing the garden room, and small increases to the front. These floor areas exclude any outbuildings.

Scale

The house will be insulated externally with 250mm of insulation to all the main external walls. The dormers and roof will be insulated with an additional 120mm of insulation. This additional insulation will add approximately 350mm to the thickness of the walls allowing for finishes and raise the ridge line by approximately 250mm.

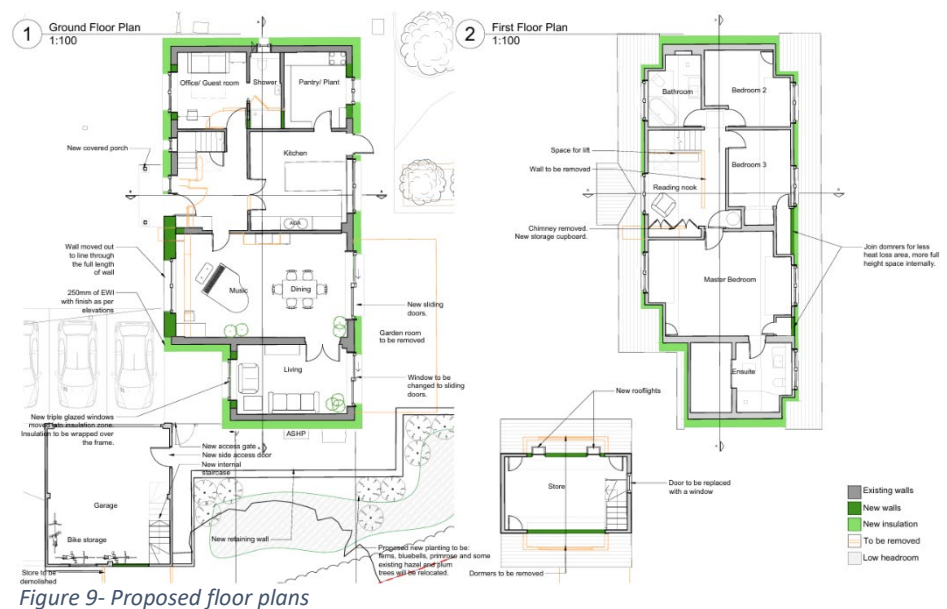
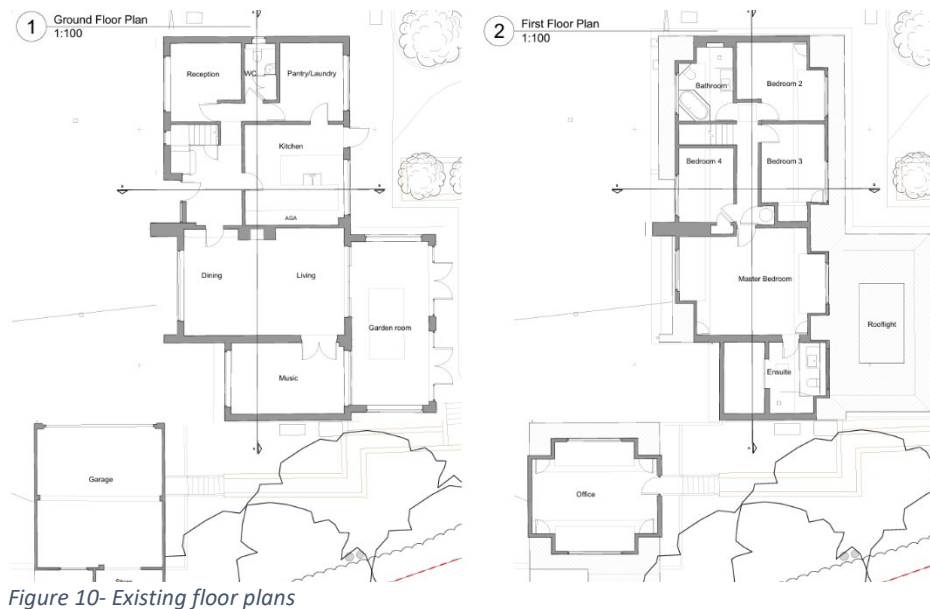
All the windows on the ground floor front elevation are being reduced in width to reduce heat losses and improve the proportions of glazing on the façade.

Layout

The layout is changing slightly within the home to update the rooms uses to the family's current needs. The home office is to be moved from above the garage into the family home.

The garden room is being removed as the space is no longer required by the family, it makes the living spaces attached dark with no views out to the garden and makes the homes heat loss area more significant.

The small hallway spaces between the entrance and pantry are being better utilised, creating a downstairs shower room, future proofing the home for the family. Bedroom 4 is being opened to the landing, create a generous and light filled space to enjoy, rather than the current narrow and dark space.



Landscaping

The landscaping is mainly staying the same as existing. However, around the south side of the home, it is hoped to relandscape the area to create new side access around the property and into the garage. Currently the existing music room is built into a banked area of earth, it is hoped to lower the ground locally, reducing potential damp issues and maintenance requirements.

Two of the T.1 Ash trees along the boundary in this area, have been surveyed and are showing signs of Ash die back, these have recently been removed and it is proposed to replace the tree with an English native tree such as copper beech, silver birch or field maple.

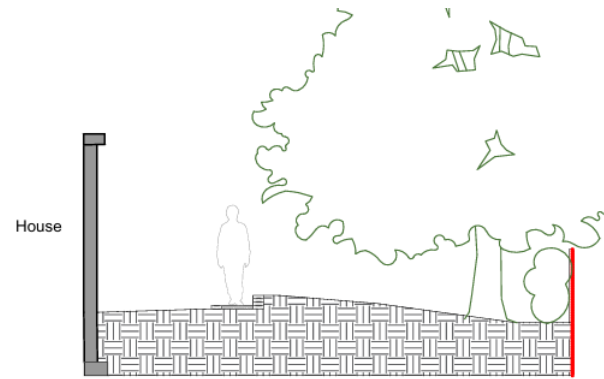
Where the land levels are changing some of the existing planting classed as G.1 Mixed species (C/L) and large deadwood will be removed and replanted. Existing species include:

- Holly
- Hazel
- Plum trees

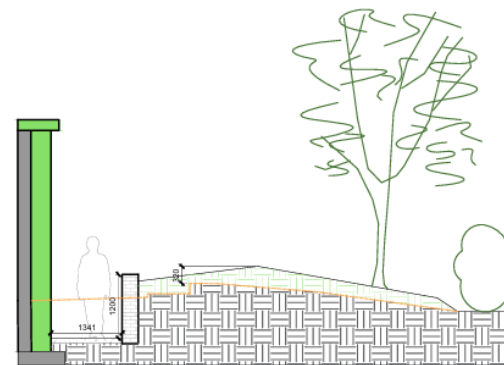
To enhance the area the new planting, proposed includes:

- Ferns
- Bluebells
- Primroses
- And other native woodland species.

These native species will thrive under the canopy of established trees have been chosen to ensure a successful planting scheme.



1 Existing Mound Section C-C
1:100



1 Proposed Mound Section C-C
1:100

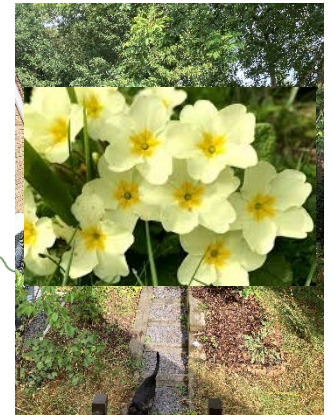


Figure 11- photo of existing side area



Appearance

The current materials on the property are brick and white UPVC sliding and plain red roof tiles. It is proposed to replace these with stone and black timber effect cladding creating a more traditional and natural aesthetic. The windows will be replaced with timber triple glazed units.



Figure 13- Example of stone and black timber home used as a precedent



Figure 15- Example of black timber porch



Figure 14- Example of timber triple glazed window



Figure 18- Stone to be weathered Cotswold blend stone slips.



Figure 17- Hardie Plank Fibre cement cladding- midnight black.



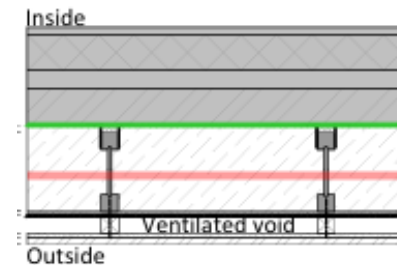
Figure 16- Example of plain red roof tiles

Existing External Wall - Stone slip (11ud)

Inside

- Reskim and repair existing plaster
- Existing masonry cavity wall
- SIGA Majvest 500 SA airtight membrane; all joints lapped and taped with SIGA Wigluv. Adhesion test required to confirm if primer is required.
- Nominal 20mm tolerance gap to allow for uneven surfaces and brick coursing; SEng to confirm spec of standoff brackets. Gap to be filled with mineral fibre (0.037 W/mK).
- 220m JJI studs @ max. 600mm c/c fixed to SEng details. All voids fully filled with Warmcell cellulose insulation (0.038W/mK)
- If extra packing is required to achieve brick coursing then fully glue (D4 wood glue) and screw @ 150mm c/c (tbc with SEng) full length timber packers to the outside of the studs, width to match stud.
- 12mm Magply fire board fixed to studs, all gaps/holes through board that are not then blocked by studs or noggins to be fire stopped with appropriate mastic
- SIGA Majcoat 350 breather membrane; all joints lapped and taped with SIGA Wigluv
- 50x47mm treated vertical battens @ max. 600mm c/c to SEng. details
- 12mm fibre cement profiled sheathing board fixed back to studs to SEng.
- 20mm stone slips (Vandersanden 215 x 20 x 65mm) colour tbc with client

Outside



Outside



Figure 19 Example of EWI system proposed

Access

Vehicular and transport links

There will be no changes to the vehicle access or parking arrangements.

Inclusive access

Where possible level thresholds will be installed, the new downstairs shower room will be designed to Part M regulations.

Sustainability

Energy Efficiency

To achieve an energy efficient building the heat loss must be reduced. This can be achieved through high levels of insulation in the walls, roof and floor. It is also important to install highly efficient triple glazed windows.

A large area of heat loss is through draughts, ensuring the building is as draught free as possible will help to reduce the building's energy demand, and improve comfort.

Natural Day lighting

The changes made to the home will help increase the levels of natural light within the living spaces, this will help with well-being as well as reduce the reliance on artificial lighting. This in turn will reduce the energy demand for the building.

Renewable Technologies

The building already has Photovoltaic panels integrated into the roof, and an ASHP these will be retained as part of the design.

Water Efficiency

Where new water fittings are being specified, they will be water efficient, low flush toilets and water butts will be kept and upgraded where possible to reduce the water demand for the property.

Materials

Where possible local, natural materials will be sourced to reduce the carbon footprint of the dwelling.

Full recycling facilities will be provided for the dwelling.



Passivhaus

A Passivhaus is designed to deliver a **comfortable, healthy, quality building** with **low running costs**. Most of our time is spent indoors, therefore it is important that our buildings are healthy and happy places to be. A Passivhaus is an energy-efficient building with all **year-round comfort** with minimal use of space heating or cooling systems.

The primary focus whilst designing and building to the Passivhaus Standard is directed towards creating a **thermally efficient envelope** which **optimises free heat gains** (such as solar and heat from cooking and showering). A draught free, carefully detailed building, with a **good form factor** is essential.

To ventilate a Passivhaus a mechanical ventilation system with heat recovery (MVHR) is used, providing fresh, filtered air to the whole house. The idea is incoming fresh air is pre-conditioned via a heat exchanger, by outgoing warm stale air.

In order to maintain high comfort levels in any building, heat losses must be replaced by heat gains. **Heat losses occur through poorly insulated walls, floors, ceilings, as well as through leaky construction and poorly fitted windows and doors.** Ensuring all these issues are carefully considered will result in a smaller space heating system being required.

The energy requirements of a house built to the Passivhaus retrofit Standard (EnerPHit) are:

- Annual space heating requirement of 25 kWh/(m²a).
- • The frequency of excessive internal temperature (> 25 °C) should be limited to ≤ 10 % but a level of ≤ 5 % is recommended.
- • The air-leakage test results must not exceed 1.0 air changes per hour (ac/hr) using 50 Pascal over pressurisation and under-pressurisation testing.

The EnerPHit standard

High comfort levels

(≤ 4.2°C surface temperature difference)

Minimal Heating

(Specific Space Heating Demand ≤ 25 kWh/m²/yr)

Low total energy

(Total energy ≤ 12 kWh/m²/yr)

1. Super insulation

(U-values ≤ 0.15 W/m²K)

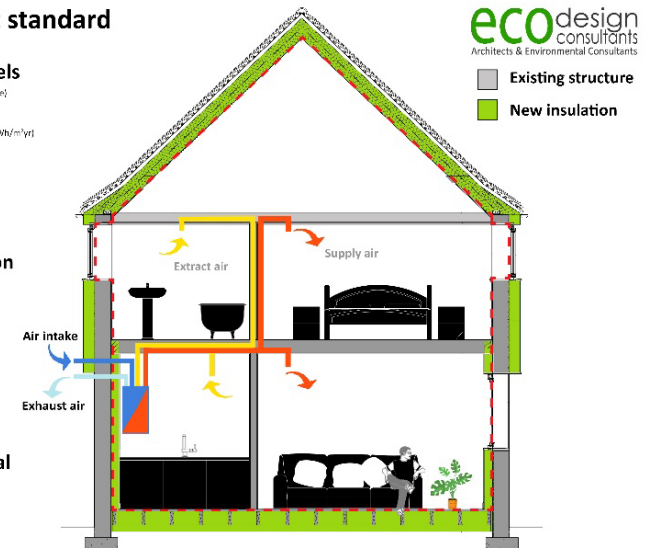
2. Triple glazed windows

3. Airtight

(≤ n50 of 1h-1 @ 50 Pa)

4. MVHR

5. Reduce thermal bridges



Summary

In conclusion this proposal is for a thermal upgrade of an existing 4-bedroom detached home, whilst simplifying and improving the appearance of the home. Along with the internal changes, this will make a comfortable, healthy, eco-friendly and more accessible home fit for the future.

The proposed works including:

- New external wall insulation and cladding finish
- New roof insulation
- New pitched roofs on dormers
- New triple glazed windows
- New open porch to front elevation
- Demolition of existing garden room
- Demolition of external staircase on garage
- Demolition of dormers on garage roof- new rooflights installed
- Relandscaping south side of property to create level side access
- Minor internal layout changes