Design and Access Statement

90 Vine Lane, Uxbridge

E3743 90 Vine Lane, Uxbridge
21st March 2023
Rev 0

Contents

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

Client	Jonathan & Rachel Dilworth	Project Number	E3743
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Revision/ Date	Rev 0 – 21/03/2023	Reason for Revision	First issue

eco Design Consultants
Architects & Environmental Consultants

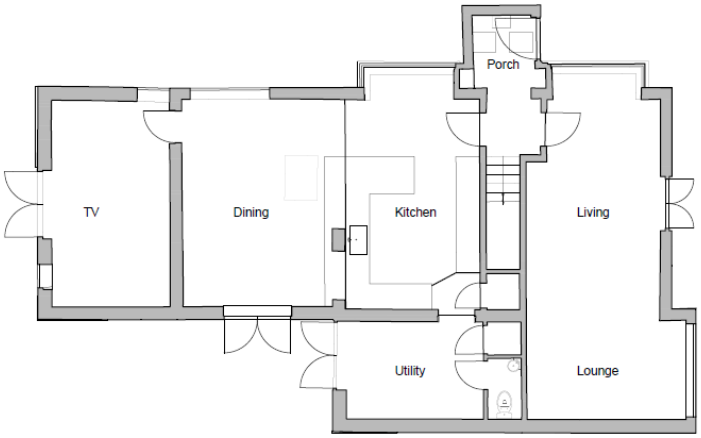
Introduction

This planning application seeks approval from Hillingdon Borough Council for the proposed thermal upgrade, additional single storey rear extension and first floor extension to the property at 90 Vine Lane Uxbridge.

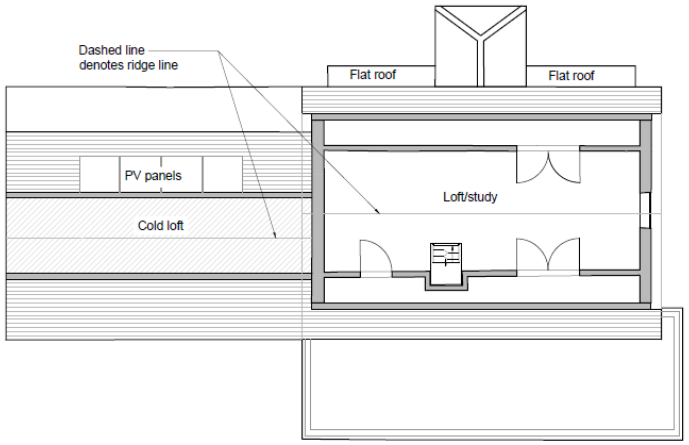
The existing property is a 1930's 4-bedroom detached house, set in the former grounds of Hillingdon Manor, set behind a locally listed wall. The original layout was a "two-up, two-down". A flat roof single-storey extension was built to the north up to the boundary around the 1970s. A porch was also added to the south side of the property with a front west entrance, which is now the main access to the house. The previous owners added a combined single and two-storey rear west extension subservient to the main roof for which planning permission was granted in 2007. Solar PV panels have been installed to both roofs around 2014 and around this time the roof has been retiled. The loft space of the main roof has also been boarded and insulated to house a study space.

Site Analysis

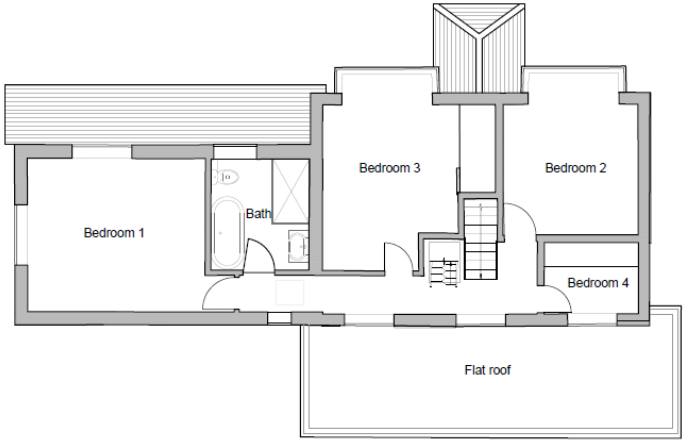
Existing Plans



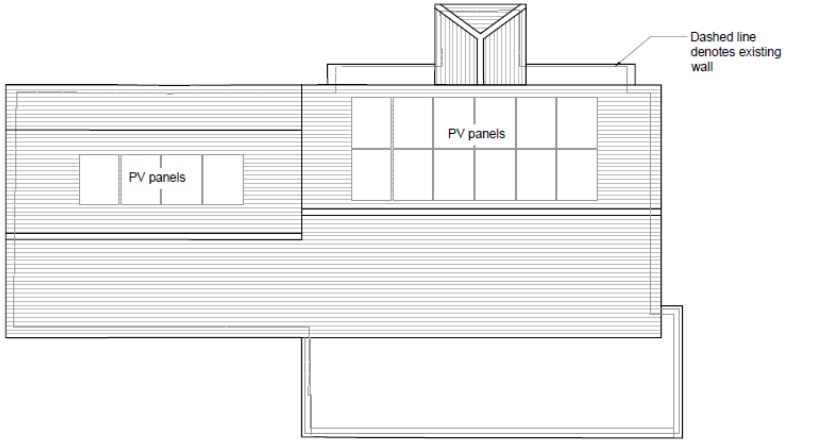
1 Ground Floor Plan



3 Loft plan



2 First floor plan



4 Roof plan

Existing walls

Existing Elevations

1 Existing South Elevation

2 Existing North Elevation

3 Existing West Elevation

4 Existing East Elevation

Render
Tiles

Site Photos



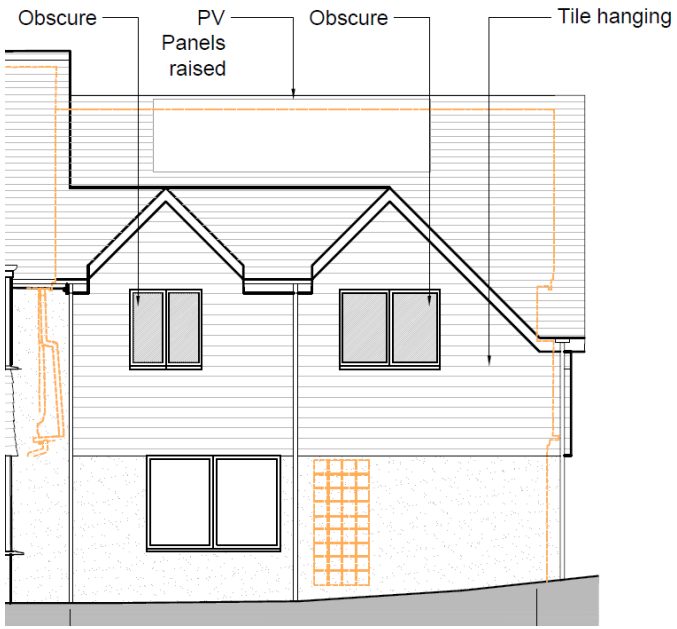




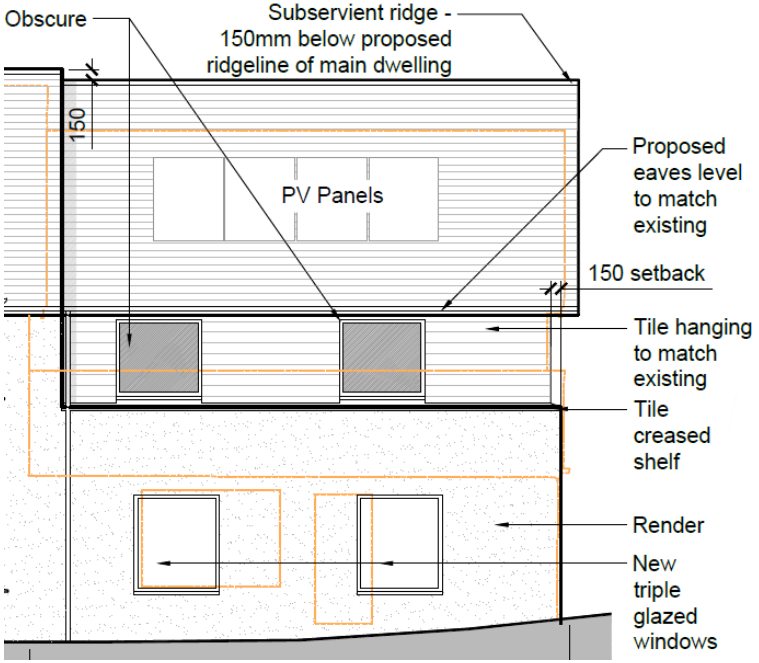
Planning History

The applicants sought pre-application advice from the Hillingdon Borough Council planning department in July 2022, for a previous iteration of the proposed scheme (ref 33944/PRC/2022/159). This proposed to maintain the height difference of the ridges of the original dwellinghouse roof with its existing subservient two storey extension, and create extra head height in the master bathroom area using a double-gabled dormer with crown roof.

The council accepted, in principle, a retrofit to the home but did not support the crown roof proposal as this was not deemed subordinate to the existing. This planning application therefore addresses such by rebuilding and raising the roof pitch to the existing two storey extension to create ample head height underneath. It maintains subservience to the existing by a 150mm difference in ridge height and a 150mm setback to the eaves, allowing proposed eaves run across at the same level as existing. Refer to appendix for the elevations which were included in the pre-application submission.



Preapplication scheme

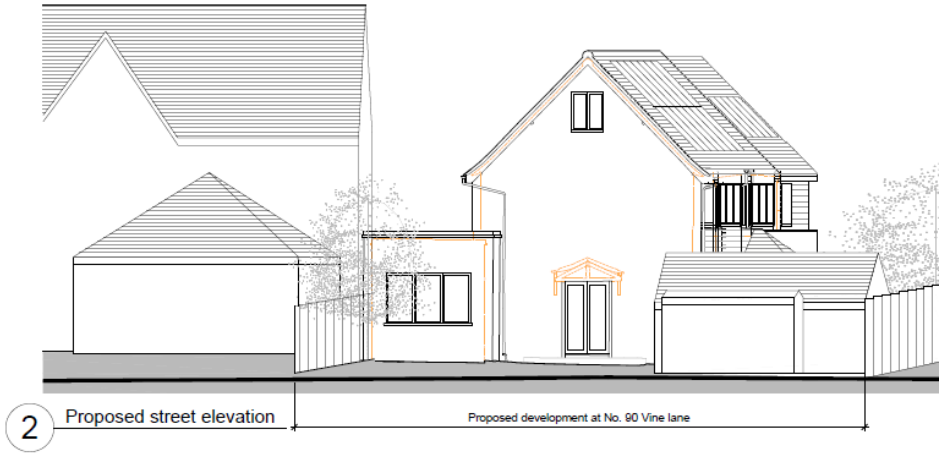


Current planning scheme

The schemes for both the preapplication and the current application involve raising the ridge height of existing.

This raised ridge height is due to insulating between and over the roof rafters rather than underneath, which is more effective from an insulation and airtightness perspective, and much safer regarding condensation risk. We therefore believe that raising the ridge height is necessary to allow the applicant to retrofit their home to a high energy standard such as Passivhaus.

The street is on a slope meaning that the neighbouring ridge is much higher than 90 Vine Lane. If the proposed scheme is built, the neighbouring property ridgeline will still remain much higher. We therefore believe that the proposed scheme will not have an adverse impact on the street scene. Refer to appendix for street elevations.



Design

Concept

The proposal is primarily a thermal upgrade which seeks to drastically reduce space heating demand, thus carbon emissions. This is in line with Hillingdon Borough Council's commitment to become carbon neutral by 2030.

The thermal upgrade involves external wall and roof insulation, replacement of all windows with triple-glazing, insulating the ground floor, installation of an airtight envelope, and a mechanical ventilation and heat recovery system. The proposed single storey extension and first floor extension improve the form factor of the existing home, reducing the surface area-to-volume ratio, thereby reducing heat loss per unit area. This is arguably also an aesthetic improvement, unifying the form of the house which is currently heterogenous from successive previous extensions.

Openings are proposed to be altered, notably a wide set of sliding doors to the ground floor and Juliette French doors to the first floor of the east façade. This provides favourable views of the garden, allowing the occupants closer connection to it.

Use

The current building is private residential use. The proposal does not seek to change this.

Amount

The proposal seeks to increase the gross internal floor area (GIA) from 175sqm to 206sqm, or by 18%. The footprint is proposed to increase from 121sqm to 152sqm, or 26%.

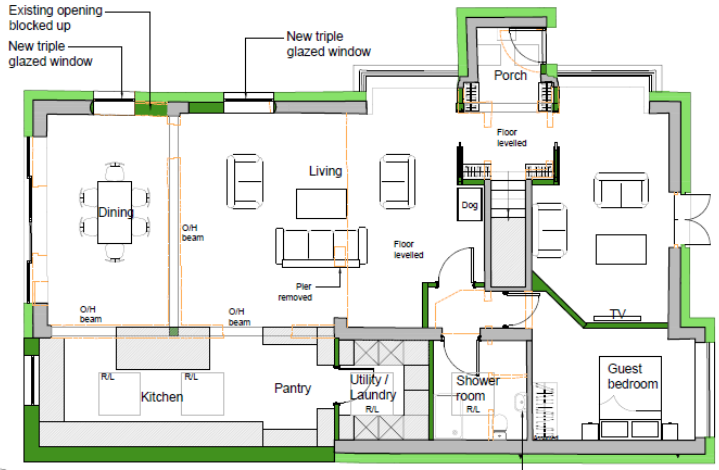
Scale

External wall insulation proposed around the existing property will increase the breadth of the home slightly, as can be seen on the elevations. Above-rafter insulation of the roof pitch throughout will also raise the ridge height slightly as shown. The proposed extensions should only minimally increase the scale of the property as observed from the public realm.

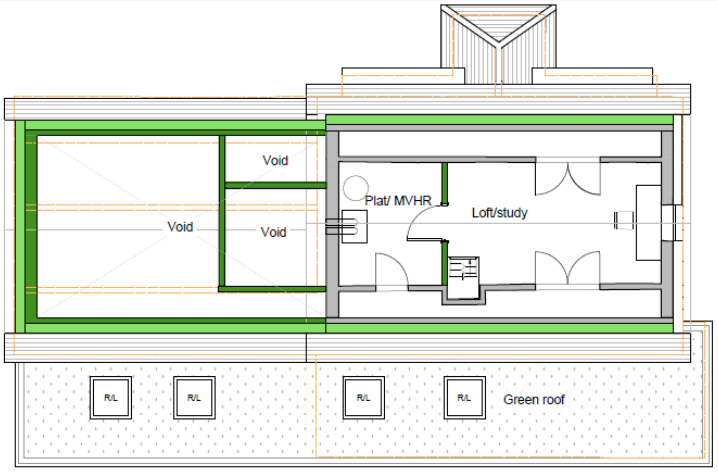
Layout

The extensions improve the flow of spaces within the home, making it better suited to the applicants' current and future needs. The extension to the northerly single-storey utility allows for the kitchen to be relocated with adjoining pantry and laundry room. The space of the existing kitchen can be opened into a living dining area. Part of the front lounge on the north boundary side can be converted into an accessible double bedroom and shower room for elderly relatives. The proposed first floor extension allows for an ensuite bathroom and walk-in-wardrobe to the master bedroom. The family bathroom can thus replace the existing redundant box room.

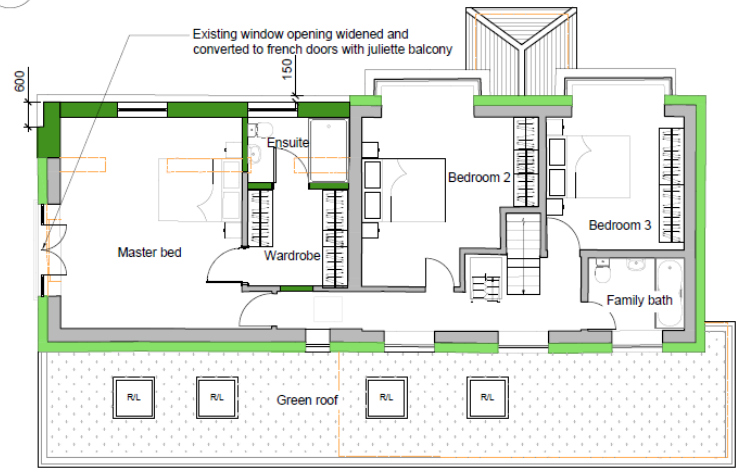
Proposed Plans



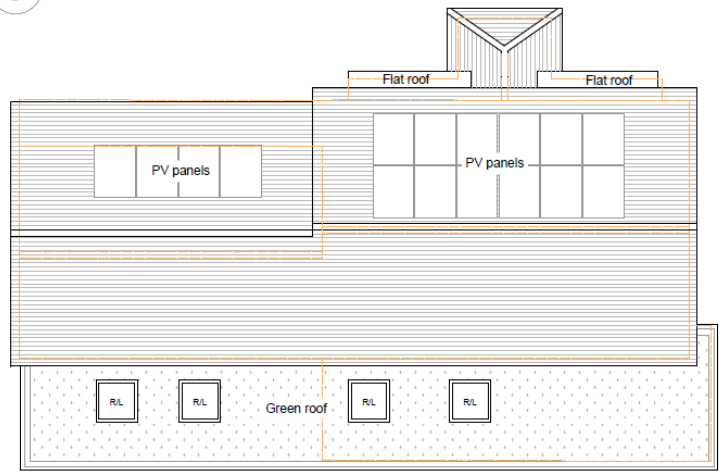
1 Ground Floor Plan



3 Loft plan



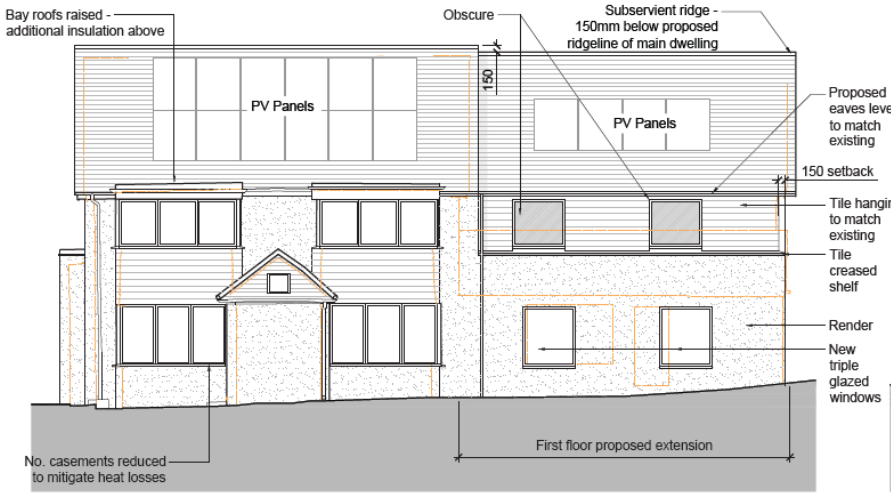
2 First floor plan



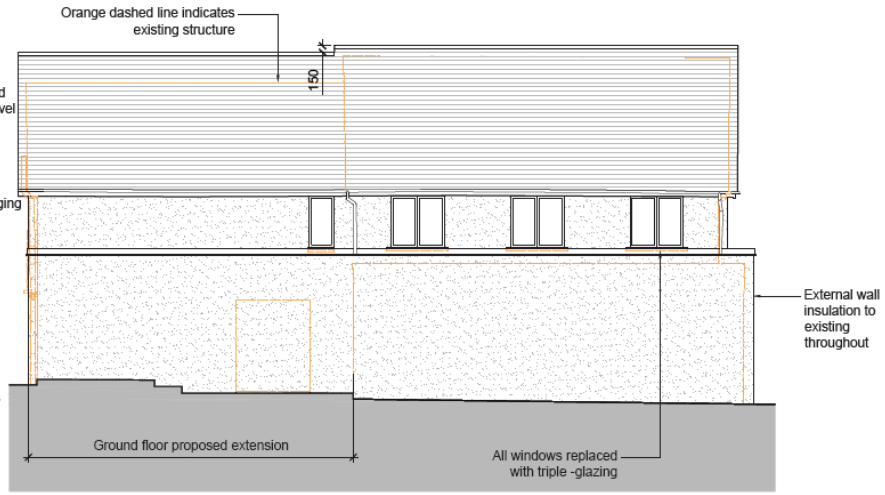
4 Roof plan

Existing walls
New walls
New insulation
To be removed/ extent of existing
Low headroom

Proposed Elevations

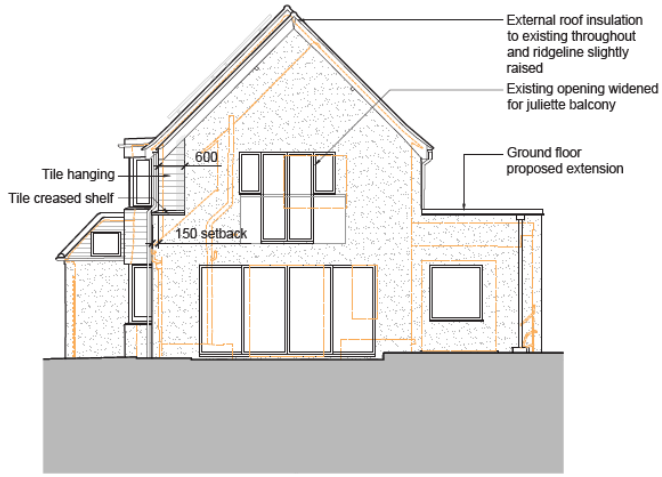


1 Proposed South Elevation



2 Proposed North Elevation

3 Proposed West Elevation



4 Proposed East Elevation

Existing walls
New walls
New insulation
To be removed/ extent of existing
Low headroom

Materials and Appearance

The proposed external wall insulation will be finished with render with colour and style to match existing i.e. roughcast, off-white. Tiling to the existing roof will be carefully removed and replaced back once externally insulated. Any new tiles will be carefully selected to match existing – i.e. red plain tile. All windows are to be replaced with high-performance triple glazing. Frames will be white to match existing. Proposed doors to be high-performance timber, closely matched in colour to existing. Numbers of casements are to be reduced overall to minimise frame-to-glass perimeter, thus heat loss.

The proposed rear extension will be designed as a continuation of the existing, with brick-on-edge parapet and rendered walls. The flat roof is proposed to be converted into a green roof. This will not necessarily be visible over the parapet from the public access but serves to aid biodiversity and mitigate rainwater runoff. Four rooflights are proposed to bring natural light into respective rooms.

The proposed first floor extension is finished with tile hanging matching the existing and has a 150mm setback with tile creased shelf. The extension has a pitched roof proposed to match the existing eaves level and a subservient ridge of 150mm below the proposed ridgeline of main dwelling. These are proposed to be clad in plain tile hanging to match the bands of such between ground and first floor bays.

Existing PV panels are proposed to be carefully removed and replaced on the roofs once externally insulated.

Rainwater goods are proposed to be galvanised steel coloured black, an improvement over the existing black PVCu gutters and downpipes.

Bargeboards and soffits will be white to match existing.

Access

Vehicular and transport links

Access to the site will remain as existing and be unaffected. The layout of the proposal reinforces the use of the southerly porch which is currently the main access.

Inclusive access

The ground floor is to be made much more access-friendly – the lower kitchen is to be brought to the same level as the rest of the ground floor. The addition of a ground floor bedroom and a spacious shower room makes this home more amenable to elderly occupants.

Privacy

The first-floor extension sets forward by around 1.5m the two existing windows to the south face of the master bedroom. We believe this will not unduly affect existing aspect toward neighbouring No. 88. Both the windows are proposed to be obscured to maintain the privacy.

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.

Another area where heat is lost is through draughts, ensuring the building is a draught free as possible will help to reduce the building's energy demand.

Natural Day lighting

The building will be designed with plenty of natural light, 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.

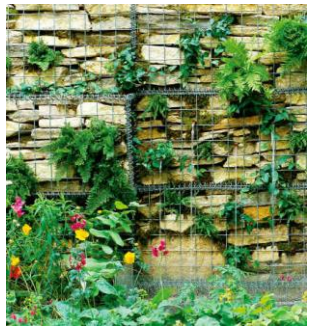
Water Efficiency

Efficient water fittings, low flush toilets and water butts will be installed 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 design

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.

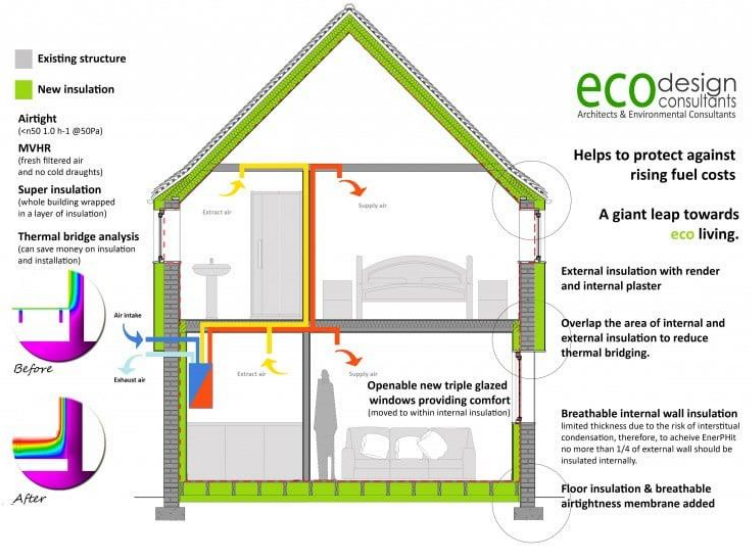
The primary focus whilst designing and building to the Passivhaus Standard is directed towards creating a **thermally efficient envelope** which **optimises free heat gains** (such as solar and heat from cooking and showering). A draught free, carefully detailed building, with a **good form factor**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

It is difficult to meet the requirements of Passivhaus when retrofitting an existing property. This is even more difficult as the orientation and many fabric components have already been provided, with many areas being difficult to retrospectively make cold bridge free. Although this proposal is a retrofit to the existing property, we believe it is possible to meet the Passivhaus requirements due to a good form factor achieved with the proposed extensions.

The energy requirements of the Passivhaus Standard are:

- Annual space heating requirement of 15 kWh/(m^2a);
- The total primary energy demand (for space and water heating, ventilation, household appliances, and lighting) ≤ 135 kWh/(m^2a);
- The frequency of excessive internal temperature (> 25 °C) should be limited to ≤ 10 % but a level of ≤ 5 % is recommended; (Note: we design to 3% to account for overheating)
- The air-leakage test results must not exceed 1 air changes per hour (ac/hr) using 50 Pascal over-pressurisation and under-pressurisation testing.



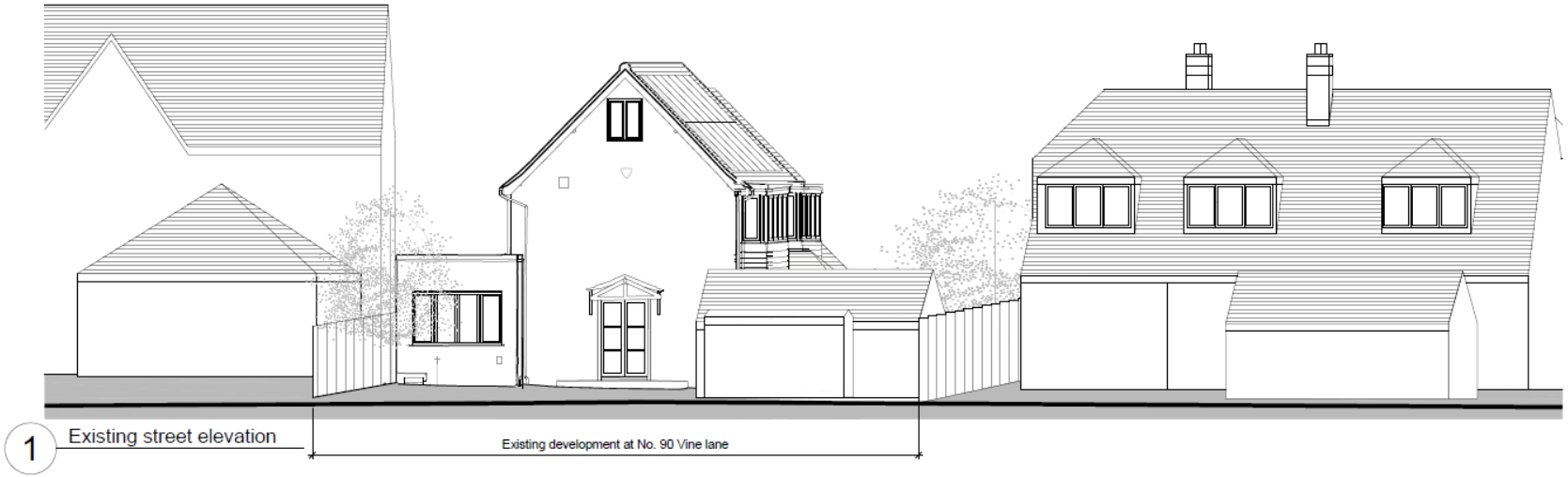
Summary

The proposal presented in this planning application drastically improves of the home's thermal performance, thus reducing operational carbon use for years to come, in line with Hillingdon Borough Council's commitment to carbon neutrality by 2030. This proposal also improves the layout of the home to suit both current and future needs and makes it more accessible. The extensions we believe will be an aesthetic improvement to the existing, unifying the architecture of the home.

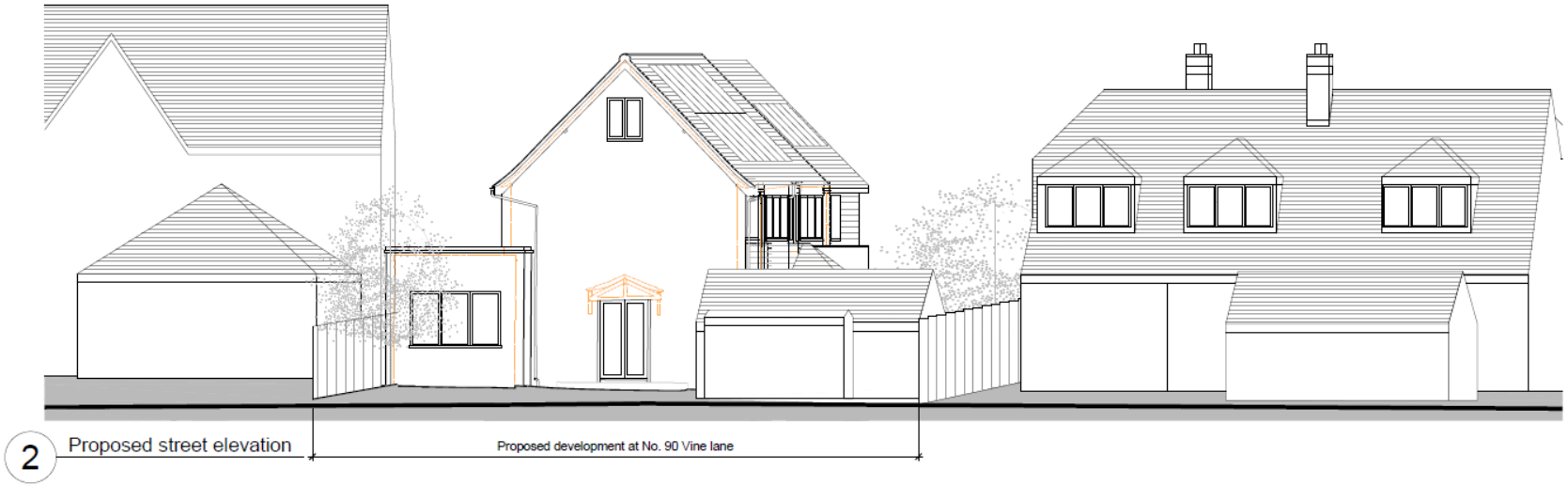
We put this application forward for the consideration of Hillingdon Borough Council, and we hope that the planning department shares the above views.

Appendix

Existing and proposed street elevations



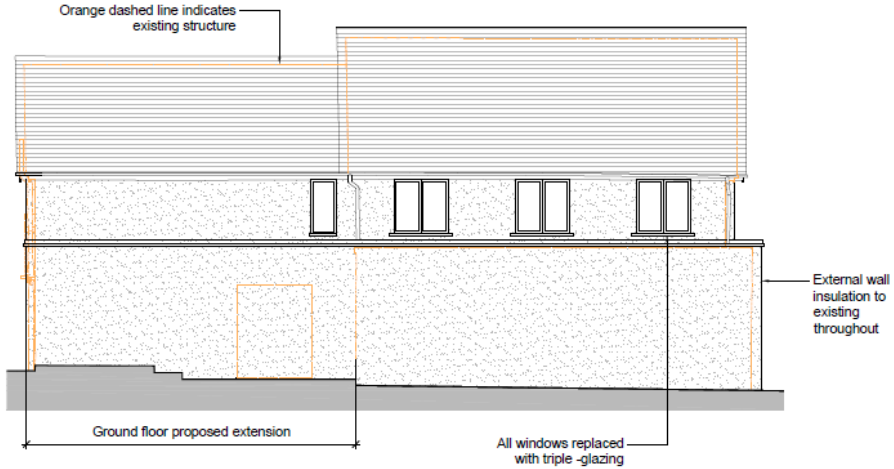
1 Existing street elevation



2 Proposed street elevation

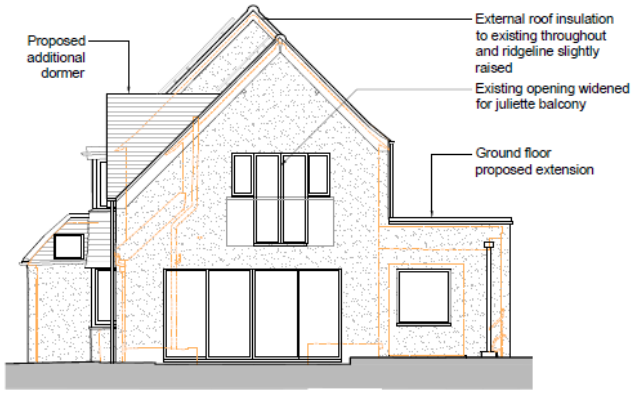
Pre-planning Elevations

1 Proposed South Elevation



2 Proposed North Elevation

3 Proposed West Elevation



4 Proposed East Elevation

Existing walls
New walls
New insulation
To be removed
Low headroom