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Architecture and Energy

Byways, Penrhos, Monmouthshire NP15 2DF

Design and Access Statement
10th August 2022

Introduction

Byways, is a dormer bungalow built in the late 20th Century. It is located in a rural part of Monmouthshire, adjacent to Ysgubor Lan with which it shares an access lane.

It has been extended at least once since the original core bungalow was built and whilst having quite a large floor area, the spaces are not all useful and there is little or no insulation. The house has an EPC of G which is unacceptably low for the present day situation particularly in relation to fuel prices and climate change. The first floor bathroom can only be accessed through the bedroom and sitting area. The existing stairs are non compliant and head height on the first floor is restricted in many places.

The intention is to replace the roof of the house with a new structure that will allow adequate head height throughout whilst adding excellent levels of insulation as both these are lacking at present. The EPC will be brought up to acceptable levels. The existing walls on the ground floor and gables will be overclad with a new masonry or timber skin protecting a new insulated cavity. The overall appearance of the house will be improved through unifying the roofscape and introducing natural materials i.e. timber and stone. A small extension will be built to provide a new entrance hall off the driveway, replacing the existing entrance which is to the rear of the house and difficult to locate for visitors and deliveries.

Photographs
Byways at present


House from garden – East façade – untidy roofscape


South façade – unwelcoming at present


House from the North


West façade – 'front' entrance difficult to find.


House from the North West showing conservatory and aga flue to be removed

1 Design

1.1 Visual Impact

1.1.1 The proposals have been designed to improve the visual appearance of the house whilst maintaining a similar scale. The overall increase in volume is modest and the calculations are set out below.

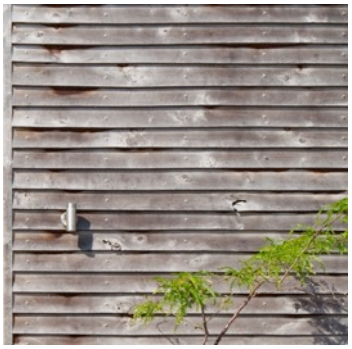
1.1.2 The entrance extension will be an enhancement both practically and visually, and is subordinate to the house as a whole.

1.1.3 The ridge line will be raised but will still be in keeping with the rural context. It is necessary to do this to provide super insulation and a usable head height throughout the first floor.

1.1.4 The roof dormers will be unified to give an improved appearance.

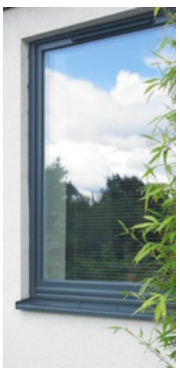
1.1.5 The materials used will include timber and stone both of which will improve the appearance of the house. Red sandstone will be used on the new entrance extension to give a robust finish from the driveway. This stone is typical of many good quality buildings in Monmouthshire. Timber cladding will be introduced to the ground floor and dormers. It will be 'bookended' by rendered walls, and being a natural material, will enhance the appearance of the house. Oak or larch will be used, left to weather naturally, and requiring no paints or stains.


Red sandstone


Weathered oak cladding


Lime render

1.1.6 Glazing. The new windows will provide a higher level of energy efficiency and will be bespoke high performance triple glazed windows from a specialist manufacturer. The frames will be timber or aluminium / timber replacing the existing upvc windows.



1.1.7 The existing garage currently houses the oil tank but will be used for storage once the oil tank is removed. The existing garage will be reroofed with slate.

Existing garage

1.2 Residential Amenity

1.2.1 After improvements, the house will still be of an appropriate size and this will continue to have no impact on the neighbouring properties.

1.2.2 The proposed materials will enhance the rural setting. The stone and timber in particular will weather naturally which is more suitable in the context.

1.2.3 The new dormer windows facing the neighbouring house Ysgybor Lan will be additional to the window of the existing first floor shower room, but are a considerable distance away. In other directions there is no issue of overlooking.

1.3 Volume Calculations

Existing	
Main house with 2no. gables	643m^3
Front lean to	18m^3
Conservatory	24m^3
Dormers	16m^3
Total Existing Volume	**701m^3**
Proposed	
Main house	877m^3
New entrance hall	64m^3
Dormers	88m^3
Total Proposed Volume	**1029m^3**

The increased volume is 328m^3 which is **47%**

This increase is less than 50% and is also justifiable in this context as the house has a large proportion of roof at the moment that is uninsulated, leading to the unacceptable EPC rating of G. The intention is to vastly improve this by super insulating the whole house, building a new cavity to all the external walls that will be fully filled with insulation. The upstairs head height is presently too low to insulate so the roof requires raising, further increasing volume. The increase in floor area is modest, with one additional bedroom on the first floor and much more functional spaces. The house has such poor energy performance at present that it requires drastic increases in insulation resulting in the house increase in volume. With

climate targets in mind house extensions should be accompanied by a retrofit of the existing fabric as part of the improvements.

1.4 Highways

There will be no change to the existing entrance / exit on to the lane. The existing parking arrangements will be maintained. There is space to park on the driveway adjacent to the house and inside or outside the large workshop at the end of the garden.

1.5 Biodiversity

1.5.1 Following advice from the planning officer at pre-app stage owners commissioned KG Ecology to prepare an Ecological Impact Assessment report.

1.5.2 Bats were found to be using the house, and the recommendations set out in the report have been included in the proposals. These are both mitigation and enhancement measures for bats and birds.

1.5.3 No trees or hedges will be removed in the construction, although biodiversity enhancements include replacing the 'red robin' hedge incrementally with a new native hedge planted along the boundary to the West. A new hedge of native species will be planted to the North of the garage. A new productive garden is being created which will include a vegetable garden and fruit trees. These will provide an enhancement to the biodiversity.

Hedge to be replaced incrementally with native species

1.6 Sustainabililty

1.6.1 Building Fabric. The proposed alterations are designed to increase the energy efficiency of the existing house. New elements will be built to a level of insulation beyond the building regulations with excellent levels of airtightness. Walls will be overclad with mineral wool insulation within a cavity between the existing wall and a new skin of timber cladding or lime rendered masonry. The existing roof will be replaced with a new roof structure allowing for super insulation. The existing materials will be reused where possible, but the new roof will be clad with natural slate.

1.6.2 All new windows will be bespoke high performance triple glazed windows from a specialist manufacturer.

1.6.3 The existing oil aga together with its flue will be removed, eliminating the requirement for an oil tank (presently located in the garage).

1.6.4 Renewables. Solar panels will be added to the roof of the workshop.

1.7 Flooding

The house is not located in a flood risk area.

1.8 Foul Drainage

New drainage will connect into the existing system which is a septic tank in the garden. There will be no increase in the number of bathrooms / shower rooms in the house (4no. bedrooms and 3no bath / shower rooms). There will be a separate utility room but this will house the same number of appliances that exist at present so the existing system will be maintained, with no additional waste.

1.9 Rainwater

The existing drainage arrangement will be maintained as it is at present. Rainwater from the house will be taken to a soakaway in the garden.

2 Accessibility

Level access to the ground floor will be provided via the new front door. This will be designed with a level threshold, and will be more easily accessible from the parking than the present arrangement where the 'front' door is to the rear. Level access will also be provided from the living room through the large sliding / folding doors to the terrace.

The proposals include keeping the shower room and a bedroom on the ground floor thus allowing single level living. New door openings will be wide enough for wheelchair access.