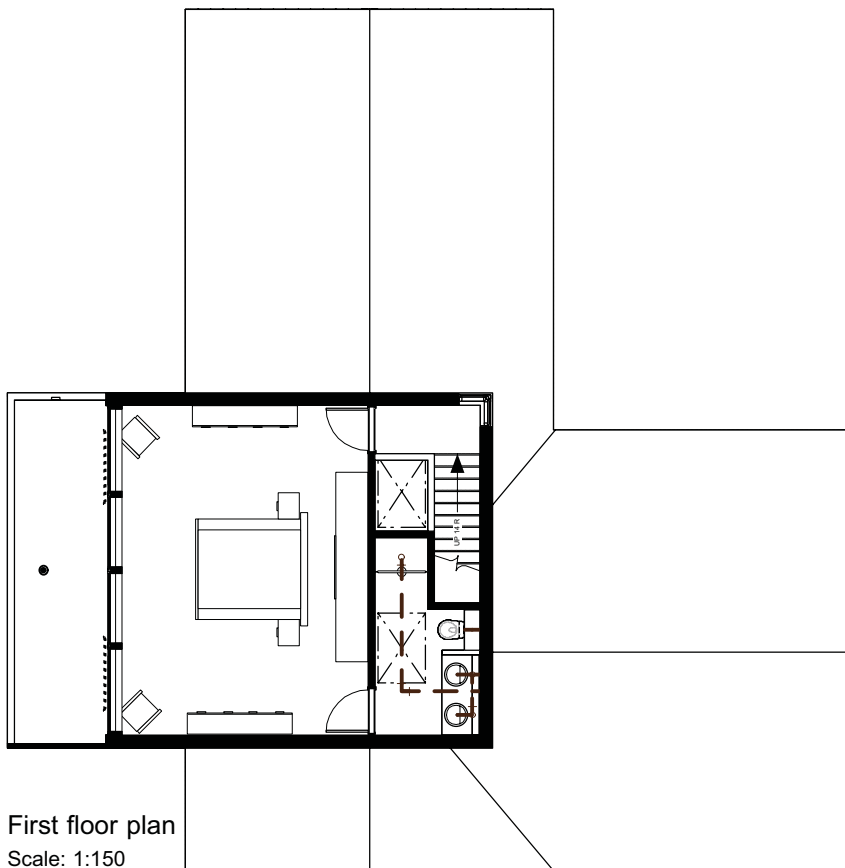


Extension to Dwelling

This remodelled bungalow on a hill overlooking Cardigan Bay comprises a two storey steel-framed extension with cantilevered roof and balcony and completely glazed west façade.

Designed to eliminate any down-standing beams in the ground floor ceiling or visible supporting columns, the structure re-uses the existing trusses from the demolished portion of the original roof as girders to support the new 1st floor walls and roof.

A steel portal frame, with columns enclosed on the ground floor by the external wall sheathing, provides lateral stability and is clad in zinc where it emerges through the 1st floor balcony.



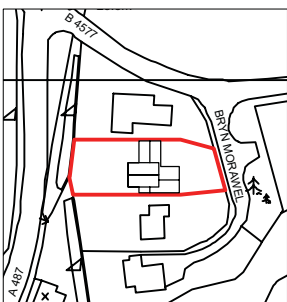
First floor plan
Scale: 1:150



The first floor spans 6.6m across a new opening in the original external wall. Most ground floor partition walls were demolished and the ground floor re-built with a steel frame providing an open plan living/ kitchen/ dining area of approximately 90m².

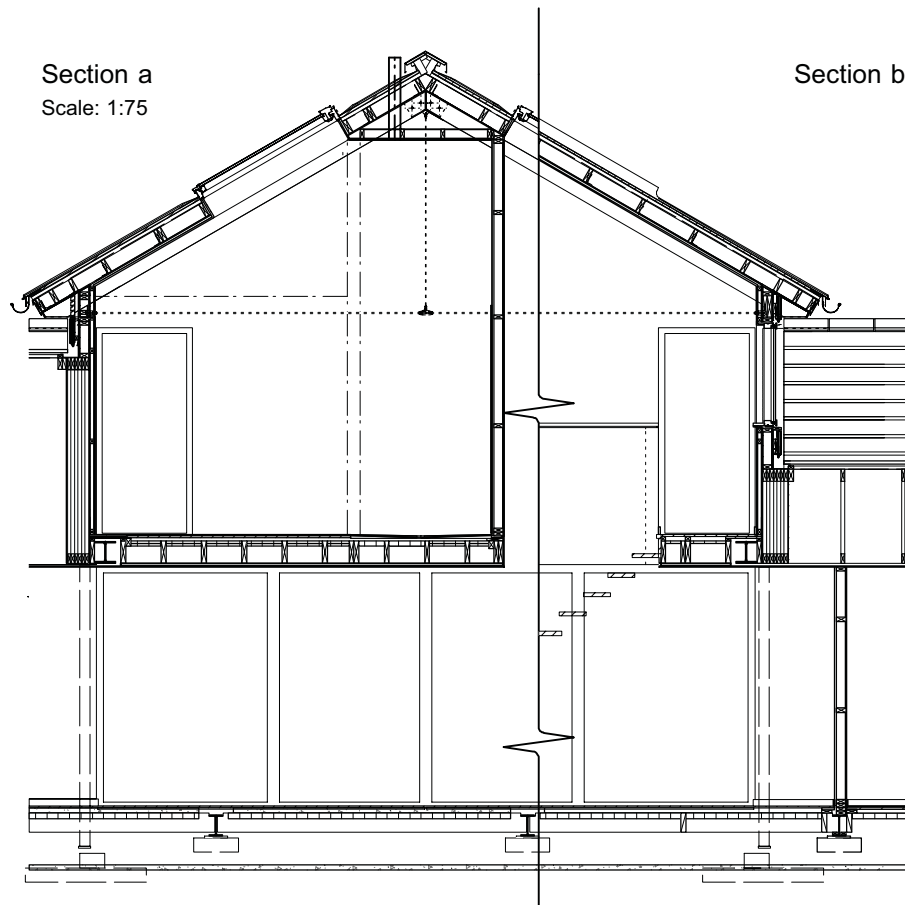
Materials, locally sourced Western Red Cedar, galvanized steel, pre-patinated zinc, and anodised aluminium, were chosen for durability and minimal maintenance in the coastal environment .

Location Plan
Scale: 1:2500



Section a
Scale: 1:75

Section b





New roof to 1st floor extension

1. Standing seam zinc roof
2. 25 x 150mm SW boarding on counterbattens
3. 140mm EPD insulation with integral foil bubble breathable layer
4. 140 x 38mm SW Purlins at 600mm centres
5. Built-up trusses at 2m centres - 2 Nr 170 x 72mm Oak rafters with SS tension rod and bolted galvanised steel plate connections

First floor

1. 21mm T&G Ply/ hardwood composite flooring
2. Steel floor beams
3. 220 x 47mm C16 Joists at 400mm centres
4. 25mm Rigid foil faced polyurethane insulation board supported on 25 x 25mm SW battens between joists.

Timber framed external walls above DPC

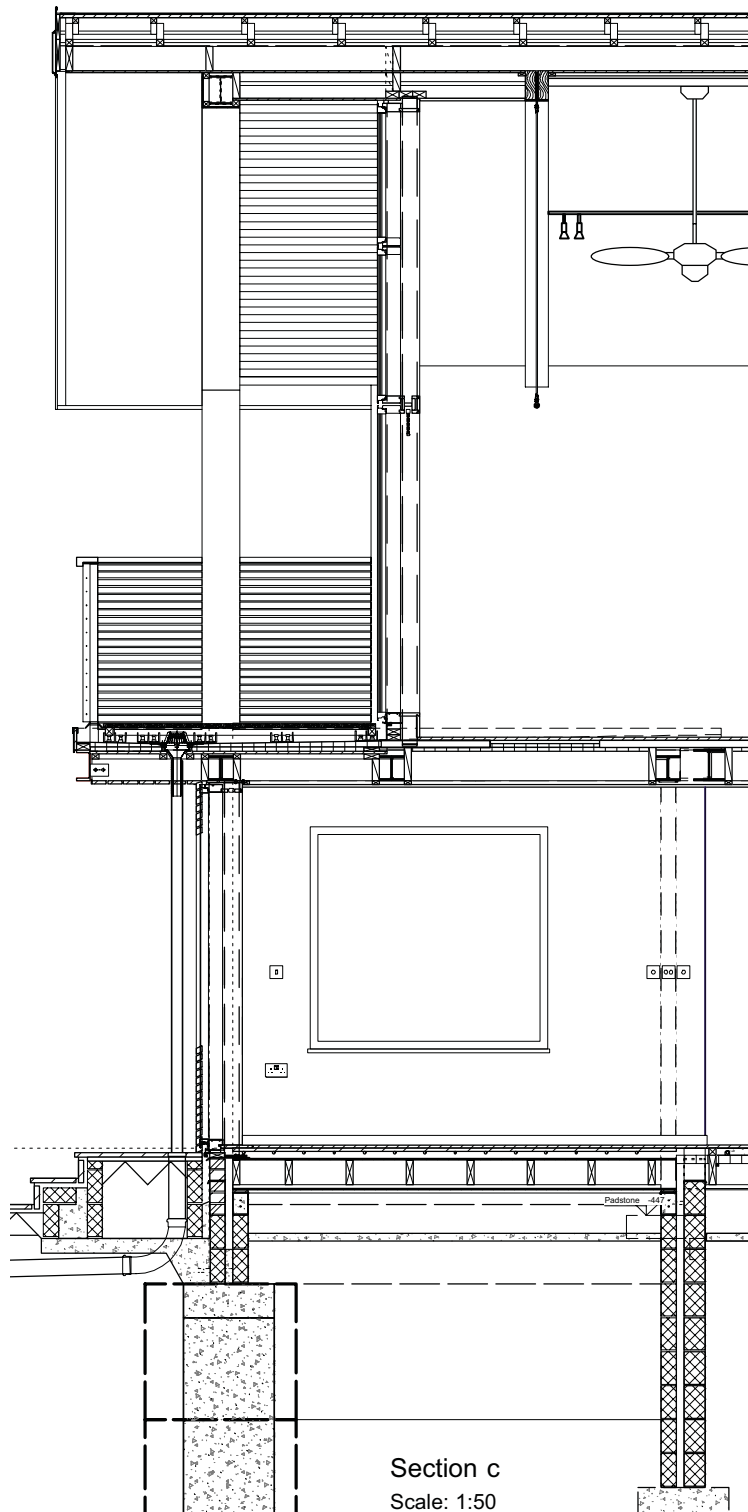
1. 40 x 55mm Western Red Cedar rainscreen cladding strips - untreated, at 50mm vertical centres
2. 38 x 38mm Vertical Batten/ ventilated cavity
3. Breather-Foil membrane
4. Zinc secret gutter lining to junction with concrete tile roof
5. 9mm OSB outer sheathing
6. 89 x 38mm CLS Studs @ 600mm centres
7. 90mm Glassfibre insulation
8. 12mm OSB inner sheathing
9. Polythene vapour barrier
10. 47 x 47mm Horizontal Batten/ services layer
11. 12.5mm Plasterboard & skim plaster finish

Ground floor

1. 21mm T&G Ply/ hardwood composite flooring
2. 50mm Lytag over underfloor heating pipes
3. 60mm Rigid foil faced polyurethane insulation board between joists

Masonry walls below DPC

1. Cavity wall:-
Below external ground level: 100mm Dense concrete blockwork both leaves in 1:1:6 Cement: Lime: Sand mortar
50mm cavity filled with concrete to 225mm below ground level
2. Above external ground level to 150mm above DPC: Outer leaf 102.5mm Reclaimed facing brickwork in 1:1:6 Cement: Lime: Sand mortar; 50mm cavity; 100mm Dense concrete blockwork in 1:1:6 Cement: Lime: Sand mortar
3. Airbricks in external walling
Mass concrete foundations



Section c
Scale: 1:50

