Deepstone, Portling

The house is located on a spectacular site overlooking the Solway Firth. The site is a steeply sloping, former quarry in a National Scenic Area which slopes in two directions from the quarry base which forms the only level ground access.

The house is conceived as a stone plinth housing the bedrooms with a garage & entrance under at the level of the quarry base. The principal living accommodation is expressed as a lightweight glazed 'pavilion' sitting on the solid plinth. It is set back to form an external terrace facing the sea and to reduce the apparent mass of the house.

The glazed pavilion is constructed with a steel frame and highly insulated timber infill panels clad in cedar and triple glazed windows. The roof, although thick internally to provide very high levels of insulation, is cantilevered on all sides with projecting expressed douglas fir rafters to give a thin, elegant leading edge. The roof is finished in standing seam pre-fabricated grey zinc. The roof pitch follows the slope of the site to reduce the mass of the house, secondly to keep the solar gain to manageable levels (the site faces due east) and thirdly to provide rooms with an outward sea view and an upward view of the slope behind the house. The masonry base is finished in stone from re-cycled quarry waste.

The design uses energy efficient construction & technology:

- external walls, floor & roof are insulated to a high standard and air infiltration is minimised.

- triple glazed windows with warm edge spacer bars, thermally broken frames and inert gas filled to achieve a whole window u-value of 0.7W/m2K.

- heat pump using a borehole as the ground source for the underfloor heating and hot water system with a closed combustion wood burning stove as back up.

- micro generation of renewable electricity using roof mounted Photovoltaic Panels.

- whole house heat recovery ventilation system.