

Case Study - Affordable Home, Scottish Highlands

Energy Performance Certificate (EPC)

THE MOORINGS, ACHINTORE ROAD, FORT WILLIAM, PH33 6RW

Dwelling type: Detached house Reference number: 9327-1948-8330-0324-4920
 Date of assessment: 15 October 2014 Type of assessment: SAP, new dwelling
 Date of certificate: 15 October 2014 Primary Energy Indicator: 102 kWh/m²/year
 Total floor area: 100 m² Main heating and fuel: Air source heat pump, underfloor, electric

You can use this document to:

- Compare current ratings of properties to see which are more energy efficient and environmentally friendly
- Find out how to save energy and money and also reduce CO₂ emissions by improving your home

Estimated energy costs for your home for 3 years* £1,539

* based upon the cost of energy for heating, hot water, lighting and ventilation, calculated using standard assumptions

Energy Efficiency Rating

This graph shows the current efficiency of your home, taking into account both energy efficiency and fuel costs. The higher this rating, the lower your fuel bills are likely to be.

Your current rating is **band B (B3)**. The average rating for a home in Scotland is **band D (D1)**.

The potential rating shows the effect of undertaking all of the improvement measures listed within your recommendations report.

Environmental Impact (CO₂) Rating

This graph shows the effect of your home on the environment in terms of carbon dioxide (CO₂) emissions. The higher the rating, the less impact it has on the environment.

Your current rating is **band B (B4)**. The average rating for a home in Scotland is **band D (D9)**.

The potential rating shows the effect of undertaking all of the improvement measures listed within your recommendations report.

Actions you can take to save money and make your home more efficient

Recommended measures	Indicative cost	Typical savings over 3 years
1 Solar water heating	£4,000 - £6,000	£183
2 Solar photovoltaic (PV) panels	£9,000 - £14,000	£753

A full list of recommended improvement measures for your home, together with more information on potential cost and savings and advice to help you carry out improvements can be found in your recommendations report.

THIS PAGE IS THE ENERGY PERFORMANCE CERTIFICATE WHICH MUST BE AFFIXED TO THE DWELLING AND NOT BE REMOVED UNLESS IT IS REPLACED WITH AN UPDATED CERTIFICATE



Project Brief

Design and construction of a low energy retirement home on a restricted site in north-west Scotland. The client, with construction experience, project managed the works.

Project Description

The architect, Nigel Johnston of Arisaig, received a brief from the client to design a relatively small retirement home on a site constrained by a public road on one side and rock escarpment on the other, with utility services running through it. The dwelling was required to have low running and maintenance costs and, most importantly, maximise the potential views over the sea loch on the opposite side of the road.

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Method

Having resolved the problem of re-routing utility services, the design was developed to use the rock face to shelter the rear of the building from prevailing winds and provide balconies at the front to obscure the presence of the road from view. Siting the building close to the rock face resulted in releasing sufficient extra area on the plot to build a source of retirement income – a small cottage for holiday letting.

The Wallform 313 system was specified for construction of the new home, achieving a U-value of 0.19 W/m²K when finished externally with a thin coat render system. The Wallform construction, as well as being practical and quick to build, also provides excellent levels of air tightness without cold bridging, both being factors which reduce comfort levels and increase energy bills. Heating is provided by an air source heat pump supplemented by solar heat gain from the south facing sun room.

Affordability

Excluding the costs of forming the road access and re-routing utility services, the cost for construction of the new house and the holiday cottage was less than £750/m². The key reasons for achieving such good value for money rest with the architect for the compact, attractive design on a difficult site and the client, who self-managed the project, assisted with the building works and proved to be very astute in his purchasing decisions for materials and equipment.

Architect: Nigel Johnston of Arisaig
(nigeldesign@gmail.com)

