

PLOT 12: The Gem

TREVOR BLACK ARCHITECTS WITH O'BRIEN HOMES LTD

The Gem is one of the striking and iconic houses that are going to be on display and open to the public for viewing at Scotland's first housing Expo, which will take place at Milton of Leys, Inverness, in August.

Designed and built by both a Highland architect and a Highland developer, The Gem, showcases local talent on a national stage. The house was named The Gem as a result of its distinctive diamond shaped gable profile, with its roof trusses projecting dramatically to support the balconies to the first floor rooms. With its striking appearance the Gem will make an interesting contribution to the townscape looking down North Street, and framing the wonderful view over Inverness from the heart of the Expo site.

Trevor Black Architects and O'Brien Homes Ltd have worked closely to develop this two storey, three bedroom, family home which has been designed to ensure that it is practicable and affordable while achieving exemplary standards of architectural design.

The simple building profile and layout allows all the space to be maximised and used efficiently to create a house with rooms that feel spacious, bright and airy. It has been sensitively designed as a passive solar house which means light bright airy internal spaces, enhancing the quality of the internal living space.

A key aim of the Expo is to create a community with a low carbon footprint through various carbon reducing initiatives. By providing a home office area, The Gem hopes to encourage and enable people to work from home and reduce daily commutes to the workplace. The ground floor area, as you enter the property, is designed to accommodate the home office. Being situated on the ground floor of the main house allows the home office to be closely integrated within the house, making it more energy efficient and allowing flexibility so that the office can be used as a fourth bedroom, if preferred. To accommodate the home office into the house, the living, dining and kitchen areas are located on the first floor, which allows them to benefit from the spectacular views over Inverness to the Beaulieu Firth and the mountains beyond. The first floor rooms have a ceiling open to the rafter line with lots of south facing roof lights, making the rooms feel very spacious and bright.

The house is highly energy efficient, with both roof walls and floors insulated to a standard approximately 60% higher than the current onerous requirements of the Building Regulations. Windows and doors have been triple glazed to achieve similar standards. Considerable care was taken in the detail design to ensure that the house is well draught proofed, which together with well controlled ventilation allows the house to achieve further energy efficiency improvements.

Designed to have as little impact on the environment as possible and to embrace sound sustainable building principles, the house has as low a carbon footprint as possible, both in its construction and throughout its lifetime.

A Terra Air Source heat pump system, designed by Invisible Heating Systems, provides the main heating. This heat pump produces around 4 times as much energy as it uses to heat the house and is supplemented with a wood burning stove which can use renewable local energy supplies. The house also has generous sized solar panels and a large hot water buffer storage tank, so that for much of the year the solar heating will provide the majority of the hot water and space heating requirements.

All the energy saving features will ensure the house is easy and economical to heat. The solar heating measures and the high insulation should considerably reduce the number of months in the year when heating is needed. Even in the winter months very little heating will be required, so the heating bills and carbon emissions will be minimised throughout the life of the house. The house has already received a preliminary eco home assessment, which indicated that the house would achieve an excellent rating.

Designed on passive solar heating principles, all the main rooms face south to a secluded garden area and a landscaped park area beyond, with generous sized glazed doors or windows to benefit from free heat gain from the sun. The internal partitions and floors are masonry to help store any heat gains and spread the benefit over 24 hours.

Each of the first floor rooms have small balconies to allow the rooms to be opened up to the landscape when the weather permits. These balconies are supported on projecting roof trusses which together give the house its distinctive appearance. The garden is being designed with input from landscape designers on an edible theme with several decorative and productive fruit trees and bushes and herb beds.

The house has a timber frame structure, which is commonly used in the Highlands, however the incorporation of an innovative double stud and rafter arrangement allows much higher insulation standards to be achieved. The building makes extensive use of timber both for its structure and finishes. As far as possible these timbers have been sourced using local Forest Stewardship Council certified sources. Natural, home produced slates will provide a long low maintenance, and reusable roof finish.

The house will be open to the public for viewing at Scotland's Housing Expo which will take place at Milton of Leys, Inverness, throughout August. The Expo will provide a vision for the next generation of Scottish housing and is based on an established model found in Finland and mainland Europe. It is set to put Scotland firmly on the map as an exemplar of sustainable living.

The Expo houses and their contents will form a platform for showcasing the wealth of Highland and Scottish design talent, including interior and product design. The initiative also provides a 'test bed' for

construction and technological innovation, which will inform Scottish house building in the future. The houses will inspire developers to learn new skills and source fresh ideas to incorporate into future designs, while demonstrating how new building standards can be met on energy efficiency and carbon reduction.

For tickets and further information visit www.scotlandshousingexpo.com