

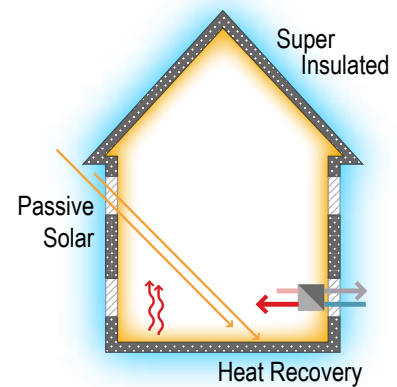
## Residential Development to Passivhaus Standard - Dwyran, Anglesey

*Client:* Cymdeithas Tai Eryri

*Role:* Employer's Agent, CDM Coordinators



### Passivhaus Principles



### *Description:*

Wakemans were employed as Employer's Agent and CDM Co-ordinators by Welsh Housing Association - Cymdeithas Tai Eryri on this project to develop five new homes located in Dwyran on the Isle of Anglesey.

Unusually the homes are constructed to the Passivhaus principles, a demanding, energy efficiency building standard, which results in ultra-low energy buildings that require little energy for space heating or cooling. The building is designed to be virtually airtight and utilizes a mechanical heat recovery ventilation system with winter heating element to capture heat sources generated by sunlight, people and electrical appliances. Further energy economies are also achieved by the provision of thermal solar water tanks. The completed properties achieved 'Quality Approved Passive House' status January 2015.

The contractor Sustainable Homes UK specializes in building sustainable houses that can potentially cut the energy costs by up to 85% less than a standard conventional home.



# Certificate

● WARM: Low Energy Building Practice hereby certifies the following building as a

## Quality Approved Passive House

Plots 1-5, Stad Pen Y Bryn, Dwyran, LL61 6YD, UK

Client: **Grwp Cynefin**  
Ty Silyn, Penygroes, Caernarfon, LL54 6LY, UK

Architect: **Dawn Minshall**  
The Cottage, Alport Road, Whitchurch, SY13 1NR, UK

Building **AllergyPlus**  
Services: Unit 2, Churchlands Business Park, Ufton Road, Learnington Spa,  
CV33 9GX, UK

This building was designed to meet Passive House criteria as defined by the Passive House Institute.  
With appropriate on-site implementation, this building will have the following characteristics:

- Excellent thermal insulation and optimised connection details with respect to building physics. High thermal comfort during the summer has been considered and the heating demand or heating load will be limited to

**15 kWh per m<sup>2</sup> of living area and year or 10 W/m<sup>2</sup>, respectively**

- A highly airtight building envelope, which eliminates draughts and reduces the heating energy demand: The air change rate through the envelope at a 50 Pascal pressure difference, as verified in accordance with ISO 9972, is less than

**0.6 air changes per hour with respect to the building's volume**

- A controlled ventilation system with high quality filters, highly efficient heat recovery and low electricity consumption, ensuring excellent indoor air quality with low energy consumption
- A total primary energy demand for heating, domestic hot water, ventilation and all other electric appliances during normal use of less than

**120 kWh per m<sup>2</sup> of living area and year**

This certificate is to be used only in combination with the associated certification documents, which describe the exact characteristics of the building.

Passive Houses offer high comfort throughout the year and can be heated with little effort, for example, by heating the supply air. The building envelope of a Passive House is evenly warm on the inside and the internal surface temperatures hardly differ from indoor air temperatures. Due to the highly airtight envelope, draughts are eliminated during normal use. The ventilation system constantly provides fresh air of excellent quality. Heating costs in a Passive House are very low. Thanks to their low energy consumption, Passive Houses offer security against energy scarcity and future rises in energy prices. Moreover, the climate impact of Passive Houses is low as they reduce energy use, thereby resulting in the emission of comparatively low levels of carbon dioxide (CO<sub>2</sub>) and other pollutants.

issued:  
PLYMOUTH JANUARY 2015

*Peter Warm*

Certificate-ID: 10366\_WARM\_PH\_20150107\_PW