



WALLTITE[®]

The airtight insulation solution

Renovation of stone buildings, North Wales

Best Practice Case Study

Advantages at a glance

- Achieved target U-value 0.1W/m²K for the pitched slate roof with breather membrane underlay and target U-value 0.25 W/m²K for the solid random stone walls
- Insulation installed to a high standard at minimal thickness
- Built-in airtightness to an existing leaky building whilst retaining the character of the original building elements
- WALLTITE provides resistance and durability in an exposed location
- Speed and ease of use as WALLTITE could be installed in half the time of other, more traditional, methods.

 **BASF**

We create chemistry

Renovation of stone buildings, North Wales

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Project data

Project: Tyn Y Ddol, Ruthin

Client: Private

Scope of Project: 400m²

Main Contractor: James Carroll Builders

Spray Foam Contractor: Total Insulations

Year Completed: 2010

Products Used: WALLTITE spray foam insulation

Project Description

Tyn Y Ddol in Ruthin, North Wales sits in an area of outstanding natural beauty overlooking the Clywdian Hills. The house consists of two stone buildings connected together by a structure of mainly glass walls with the interior split over six levels combined to take advantage of the panoramic view. The owners wanted the refurbishment to extend the glazing so that they could take advantage of these fantastic views whilst reducing thermal emissions.

Challenges

Contractor James Carroll Builders knew that in order to achieve the target emission rate they would need to increase the insulation standard of the rest of the building fabric. 400m² of WALLTITE spray foam insulation from BASF plc has been used in the refurbishment, restoration and construction of a hillside dwelling in order to achieve a U-value of 0.1W/m²K which was required to offset the large amount of glazing used on the project.

The pitched roof still contained some original oak beams and trusses which the client not only wanted to retain, but remain on view and provide a feature to the rooms. This was achieved by insulating with WALLTITE spray foam insulation between 200mm deep rafters then fixing composite insulated plasterboard to the faces. This combination kept the depth of the insulation to a minimum thickness of 190mm whilst accommodating more head room, keeping the timberwork exposed and meeting the target U-value 0.1W/m²K.

Solution

The contractor saw an advertisement for WALLTITE in a trade magazine and so contacted BASF plc for more information.

Following a site survey, the product was installed by BASF plc approved spray foam contractor, Total Insulations. For the solid stone walls, WALLTITE was sprayed between timber studwork, fixed slightly off the wall in order to eliminate any potential for cold bridging.

Very little preparation was required, not even a primer, the stonework was simply dusted off prior to application of the foam. A seamless finish was achieved resulting in an airtight envelope of low permeability without the need for supplementary material.

A target U-value of 0.25 W/m²K was achieved - significantly lower U-values than conventional insulation systems.

Customer satisfaction

James Carroll Builders were very impressed by the efficiencies that WALLTITE brought to the construction programme. Over 400m² of spray foam was installed in just three days, and they felt that the job would have taken around eight days to complete if they had used more conventional insulation materials. Less labour was required as well and the site was left clean and tidy with no waste materials to remove.

