

External Timber Cladding in Maritime Conditions

The northwest of Scotland, the Scottish islands, western Norway, and the Faroe Islands form a distinct climatic zone, which is very different to the drier, more continental climates of most of Scandinavia or southern Britain. Consequently wind-driven rain is much more severe than in adjacent areas and this has important consequences for the design and performance of buildings. Timber is already the most popular external cladding material in western Norway and the Faroes, and it is beginning to become popular in northwest Scotland and the islands. However, the design and construction of timber cladding in this maritime zone poses specific challenges not shared by other areas within the Northern Periphery. In order to address this issue, the External Timber Cladding project will develop new knowledge and share best practice in the design, construction and maintenance of external timber cladding. In peripheral areas, the maritime climate is characterised by severe exposure to wind-driven rain, which can cause water penetration into the external walls of buildings leading to building failures. Special techniques are needed to prevent these problems and these detailing techniques are not always properly understood. By working together to solve common challenges, the project partners will improve building performance, create opportunities for business development, and increase the value addition from sustainable supplies of timber grown in the NPP area.

Objectives

- Developing and sharing best practice in the design and construction of external timber cladding to withstand exposed maritime conditions
- Maximising the potential for adding value to local timber
- Assisting the development of businesses based on the unique harsh climate know-how of the exposed maritime fringe of northwest Europe
- The dissemination of new knowledge about effective solutions to the effects of wind driven rain on external timber cladding
- Establishing mechanisms where research collaboration can be continued after the project is completed

Project activities

- Promoting the use of Scottish and Norwegian timber for use as external cladding
- Testing the performance of timber cladding in exposed maritime conditions
- Assessing the risks of transferring cladding technologies between Scotland, Norway and the Faroes
- Surveying the performance of historical timber clad buildings in each country
- Project dissemination

Expected results

The project adds value to the NPP area in the following ways:

- Greater use of local timber – by improving local timber markets in western Norway and the Scottish Highlands the project will contribute to both rural development and the improved management of natural resources in these areas.
- Improved housing design – the increased use of light-weight timber cladding can reduce construction costs for housing in rural areas, the savings can be spent on improved insulation. Compared to masonry cladding a thinner timber façade also allows more of the wall thickness to be used for insulation. These benefits are particularly important in rural Scotland.
- Increased awareness of durable detailing and construction methods – an increased awareness of building details that provide for long-term durability will benefit private householders, and public sector landlords.
- Reductions in carbon consumption – increased local sourcing of timber will reduce the energy used in transportation in western Norway and the Scottish Highlands. The benefits are even greater in Scotland due to the current reliance on masonry cladding. If some of this was replaced by timber cladding, rural houses could be better insulated and the energy used in transporting heavy masonry block-work could be reduced.



Partners

Nord-Trøndelag Council, Nord Trøndelag County - Norway
Tórshavn Technical College - Faroe Islands
Norwegian Building Research Institute, Trondheim, Sør Trøndelag - Norway
Forestry Commission - Scotland
BSW Timber plc - Scotland
James Jones and Sons Ltd. Aboyne, Aberdeenshire - Scotland
Aavatsmark Sag, Nørde Trøndelag - Norway
Icelandic Building Research Institute, Reykjavik - Iceland

Project website

<http://www.forestry.gov.uk/forestry/infid-6a3kkz>

Measure

1.2

Total Budget

981 840

NPP Award

571 423

Project Period

01/01/2003 – 31/12/2005

Countries Involved

Scotland, Faroe Islands,
Norway, Iceland

Lead Partner

Organisation

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