



National
Trust

Building Design Guide

- conversion of listed buildings
- use of traditional materials
- renewal of slipway
- supporting and helping to sustain a local industry



Cwrt Farm,
Gwynedd

Cwrt Farm

Farm building conversion to provide facilities and workshops
May 2008

Project brief

- Convert a former agricultural outbuilding into wardens' offices.
- Convert redundant cowsheds into workshops for local fishermen to process crab and lobster meat.
- Renew the old slipway, and renovate the fishermen's storage hut at Porthmeudwy.

In detail, the project works had to:

- demonstrate an effective conversion and adaptive re-use of redundant Grade II listed farm buildings
- recycle on-site materials in line with the Trust's environmental principles, including the re-use of existing roof slates and the crushed material of the old slipway as a base for the new one
- use sea gravel to dash the new lime pointing of external walls to achieve a traditional finish
- match estate joinery to retain the external vernacular appearance of the buildings
- incorporate modern materials internally or conceal where possible e.g. highly insulated flooring and roofing
- ensure that modern fittings used could be removed should there ever be a wish to revert to the original farm buildings
- provide office facilities for the wardens, including a welfare area and a central meeting room with hot desk facilities for Trust and external group use
- construct fishermen's workshops including chilled and cold rooms, crab and lobster boiling facilities, a food-processing area, ice production and storage, a packaging area, and walk-in cold storage for bait
- use modern internal linings and surfaces to ensure compliance with food hygiene regulations



The old cowsheds

- restore the appearance of the original farm setting through the re-introduction of the old duck pond and landscaping, eg to hide a modern mini sewage treatment plant and around condensers mounted externally for the cold storage equipment
- support a sustainable livelihood for eight local fishermen through improved landing and production facilities, as well as providing ways to develop their business e.g. to sell extra ice produced within the unit to other local fishermen
- rebuild the slipway to facilitate ease of use and the landing of craft
- construct a new access road into the complex

Key factors

- Sympathetic conversion of redundant listed buildings
- Traditional buildings with modern facilities
- Better facilities for local fishermen and local wardens
- Opportunities for business development for local fishermen
- Improved access
- Re-use of existing materials
- Environmental sustainability
- Light footprint
- Reversibility

Background

This cove fishery was the last of a type once widespread around Llŷn. Having fishermen with fixed equipment (pots) gives the valuable biogenic reefs off Llŷn better protection from the scallop dredgers, which do not trawl as intensively in areas containing pots.

Stakeholders

- Adjacent tenant farmer
- Cadw
- Countryside Commission for Wales (CCW)
- Crown Estate
- Gwynedd County Council
- Local fishermen's co-operative
- Welsh Assembly Government
- Welsh European Funding Office (Objective 1)

Designations

- Grade II listed buildings
- The area of the beach and the track to the slipway is part of a Site of Special Scientific Interest (SSSI)
- Special Protection Area
- Area of Outstanding Natural Beauty
- Heritage Coast
- Special Area of Conservation

The slipway under construction



The fishermen's hut at Porthmeudwy before renovation



Site issues

- The site required a new three-phase electrical supply.
- Access to the slipway at Porthmeudwy is narrow and has a low axle load safe working limit.
- Tidal conditions had to be considered when planning the slipway's construction.
- The SSSI had to be considered in the access improvements and construction of the slipway, as well as in the removal of sea gravel for repointing the walls. CCW consents were obtained.

Archaeology

The 'judging stone' in the yard had to be protected (see picture on page 5). 'Cwrt' translates into English as 'Court', and it is believed that the judge stood on this stone to pass judgement. Sinisterly, there is also a field named 'Cae Crogi' or 'hanging field', adjacent to Cwrt Farm.

Engagement

As part of the Objective 1 grant conditions, interpretation boards were created and placed on the site and at the location of the slipway in Porthmeudwy Harbour.

Nature conservation

Little owls were already occupying the buildings before the restoration, so owl access and housing had to be built into the roof-space of the wardens' offices.

A little owl in residence

Project team

Project Manager
Property Manager
Building Design
Project Administration
Curator

Main Contractors Daron Builders and WEJ Contracting
Sub-contractors Clwyd Refrigeration and Zieggra Ice Machines
Civil and Structural Engineer James and Nicholas
Food Hygiene Consultant Brennan Green



Design approach

- A 'whole farm plan' approach was taken to the project, ie the design was considered as part of the wider setting and its ability to sustain a viable business in the long-term.
- The buildings are of significant historic interest; therefore a sensitive approach was required. A key aim was for the external elevations of the buildings and farmyard to retain the appearance of a traditional farm. For the wardens' offices, care was also taken to retain as much of the internal fabric and character of the building as possible.
- Originally the complex had a shared access with Cwrt Farm, so a new secondary access was formed to the development for bio-security and safety reasons, e.g. to separate site visitors from heavy farm traffic. An artist's impression of the proposed access was obtained to assist with securing curator, planning and listed building consent.
- A former (filled-in) duck pond was re-opened to recover the character of the original farmyard.

Wardens' offices

A redundant building was restored to provide the Trust wardens with offices, a mess-room and a meeting room. The meeting room is also used by community groups. The former cart shed houses low-key interpretation about the buildings, the locality and its relation to Bardsey Island, Ynys Enlli.

Fishermen's workshops

Because of the highly specialised nature of the fishermen's workshops, a specialist food hygiene consultant was appointed. He advised on the building lay-out, materials that needed to be used for compliance, and gave legislative guidance to the Trust and the fishermen. The consultant also obtained the necessary legal consents required by the fishermen to operate at the premises.

The former cowsheds each had a self-contained 'room within a room' inserted to give the sterile conditions required for fish processing. This is a totally reversible solution as these 'pods' can be dismantled and removed.

Slipway

The construction would receive heavy wear in a hostile environment so needed to be as sustainable as possible. The civil engineer specified the crushing of the old slipway as fill for the new slipway. This was a good solution in terms of both re-using material and minimising vehicle movements to the site.



New slipway under construction



The 'Judging Stone' with completed fishermen's workshops in the background



Fishermen's hut at Porthmeudwy during renovation work

Fishermen's workshops
after completion



Construction

- All roof slopes were stripped off and re-slatted. External joinery was replaced and internal and external walls re-pointed. Existing roof trusses and purlins were cleaned and retained in the wardens' offices. Pointed stonework on internal walls were simply lime washed to retain the agricultural character of the buildings. New services were incorporated into each building including comfort heating.
- Where possible a high degree of insulation was added into the structure, in particular to the floor and roof structures. In conjunction with the curator, several glass lights were introduced into the roof structure to maximise available natural light for the workshops and offices.
- Care and consideration had to be given when designing the cold storage for the fishermen's facilities. All cold stores are demountable, for reversibility. A small screened compound was constructed within an adjoining field to hide the condensers and plant required for the cold storage and air purification units. Similarly, a stone walled compound was created around the sewage treatment plant which serves the property for safety and aesthetic purposes.

Products and services

Structural/civil engineers

James and Nicholas, Grove House, Grove Place, Port Talbot SA13 1XA, Tel: 01639 891687

Main contractor

Daron Builders, Graig, Llangwnadl, Pwllheli LL53 8NU, Tel: 01758 770453

Civil engineers on the slipway

WEJ Contracting (Llyn), Cae Hen, Aberdaron, Pwllheli LL53 8BY, Tel: 01758 760424

Cold storage

Clwyd Refrigeration, Conwy Morfa Enterprise Park, Parc Seion, Conwy LL32 8FA, Tel: 01492 572323

Ice machines

Ziegra Ice Machines, Unit 2, Pheonix Court, Hammond Avenue, Stockport SK4 1PQ, Tel: 0161 429 0525

Food hygiene consultant

Brennan Green, The Glebe House, North Piddle, Worcester WR7 4PS, Tel: 01905 381781

The interior of the cold store
and chilled store



Conservation building work

- Although the buildings were in need of renovation, some of the original external joinery remained. The joinery contractor was therefore able to take these away to achieve an authentic match.
- When analysed, it was found that sea gravel had been incorporated in to the external lime mortar mix. This was then specified and re-used during re-pointing work to match the previous finish.
- Much of the original slate work was re-used to ensure that all prominent and main elevations retained their former appearance, and that as much reclaimed and sustainable materials were used as possible.
- A cobbled floor existed in the main meeting room (wardens' office), which was in good condition and needed to be retained, however, it was not the level floor required; therefore a 'floating' timber floor was installed over the cobbles.
- The internal stonework walls of the wardens' offices were re-pointed with lime mortar and lime-washed.

Associated repairs

Generally, the buildings were in a poor condition, having been disused for several years for agricultural purposes. Therefore the work required to renovate the buildings was extensive. Repairs to the stonework were carried out using local stone; including the partial re-construction of the fishermen's hut at Porthmeudwy.

Work in progress on the workshops;
note window replicating existing style



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Pre-renovation view of cow sheds

External cobbled yard
to old cowsheds

Funding

The fishermen's workshops and the slipway renewal works, including repairs to the fishermen's hut at Porthmeudwy were 100% grant-funded by Objective 1/Welsh Assembly Government grants. The works to the wardens' offices were funded by the National Trust.

Procurement

Competitive tendering

In-house design, using specialist suppliers/craftsmen.
Form of contract: JCT Minor Works for building work/ICE Minor Works for slipway. Both chosen due to simplicity and value of the work.

Project duration

| | |
|--------------------------------|------------|
| Completion of tender documents | March 2007 |
| Tenders invited | April 2007 |
| Tenders received | April 2007 |
| Contractors selected | April 2007 |

Construction phases

| | |
|-----------------------|----------------------------|
| Fishermen's workshops | May 2007 – May 2008 |
| Wardens' offices | June 2007 – April 2008 |
| Slipway | February 2008 – April 2008 |



Meeting room



Trust staff in fishermen's building



Exterior of meeting room

Post project review

- The project brief has achieved its objectives, although changes were made to the specification/layout of the fishermen's workshops to meet food hygiene regulations and to try and future-proof it against further changes in legislation.
- The wardens' meeting room is now well equipped with IT facilities. It is available to outside groups and partners in the Llŷn area for meetings and contains hot desk facilities. The building will also be used by the wardens for talks on local properties, and as a starting point for guided walks.
- Articles have been written for various sustainability journals in Wales, including 'Natur Cymru'.
- The Project Manager has been asked to present on the project at The Smithsonian Festival in Washington DC.
- The fishermen (Aberdaron Seafoods) plan to launch a website in the future.

Best practices

- The employment of a specialist food hygiene consultant worked well. Therefore the obtaining of the relevant licences from the local authority went smoothly. Without such a consultant on board, there was significant scope for getting many things wrong.
- Although the fishermen's workshops are very modern in appearance internally, externally they look like a range of farm buildings that are in good repair. An extremely good outcome which meets the adaptive re-use criteria well.
- The crushing of the old slipway and its re-use as fill for the new slipway worked well. This was an innovative idea suggested by the consultant civil engineer which saved on the amount of new concrete needed and transported to the site.



Lessons learnt

Ideally, more consideration would have been given to energy use at the site. The main commercial fridges and ice-making plants produce a lot of waste heat which could have been used to preheat the water for the boilers. Heat recovery from the 100°C boiler water could also have been investigated. A consultant is now looking at this aspect, along with a heat pump on a local stream.

Fishermen

With the change of emphasis towards greener solutions over the past couple of years, we would have made more use of technology, such as heat recovery, although this may not have been possible to implement because of the listing of the building.



Ice-making machine



Crab and lobster processor and boiler

Example of interpretation panel



Awards

The building has not been submitted for any awards, although the fishermen have obtained a National Trust Fine Farm Produce Award for their produce processed at Cwrt.

End user feedback

Fishermen

Overall, we are very happy with the scheme, in particular the design, construction and landscaping are excellent.

Visitors

Generally a good, sensitive re-use of derelict buildings.

Possibly more interpretation/project information could be made available.

Further information

If you require this information in alternative formats, please telephone 01793 817791 or email buildingdesignguide@nationaltrust.org.uk

Contact the property at: Cwrt Farm, Uwchmynydd Aberdaron, Gwynedd LL53 8DA

The Building Design Guide concept was devised by Rory Cullen and developed by Jonathan Howard, with acknowledgements to Jacky Ferneyhough, Ingrid Cheshier and Angela Collins.

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Tour of completed project during North-West Wales training day 2008

Acknowledgements

Content: Hannah King, Emyr Hall, Jacky Ferneyhough, Ingrid Wellard, Keith Jones, Liz Green, Angela Collins
Design: Inkcapp Design

Artists impression

