

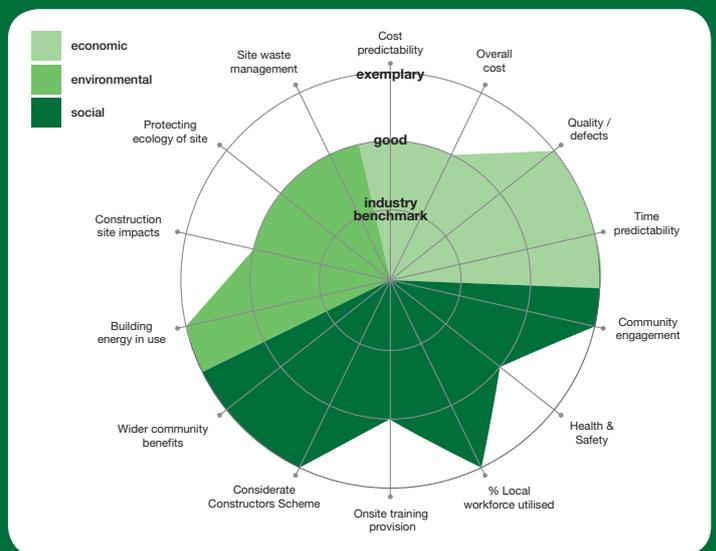
St Athan housing development



A development of 16 affordable housing units was planned by Wales and West Housing Association (WWHA) on the site of an old church in St Athan, Vale of Glamorgan. The scheme was to help meet strong demand for affordable homes for local people. The contractor employed a variety of approaches to engage the community and ensure local support for the development, which included use of local labour and suppliers where possible.

The project piloted modern methods of construction (MMC) and was expected to meet demanding quality and sustainability targets while ensuring a reasonable build cost. The new homes were required to achieve the Code for Sustainable Homes (CSH) level 4, which involved a 44% improvement in performance above and beyond the 2006 Building Regulations Part L.

Following completion, WWHA adapted its handover process to ensure housing managers and tenants were comfortable with the systems and technologies used in the homes. This process is likely to be rolled out to future schemes.



project details

client:	Wales and West Housing Association
architect:	Powell Dobson Architects, Welsh School of Architecture
contractor:	Lovell
value:	£2.25 million
project size:	1,831m ²
contract method:	D&B, negotiated contract (rather than competitive tender)

what is an exemplar project?

An Exemplar is defined as 'something worthy of being copied'. The purpose of the Exemplar programme is to identify what actions have taken place at key stages of a project that have led to a successful outcome, so that this learning can be adopted on other projects. The Exemplar programme has been developed to help identify the reasons why certain projects are successful in a standardised, quantifiable way, and to share with the industry what enabled these successes. An Exemplar considers all aspects of sustainability, including economic, social and environmental factors. Projects must demonstrate that they have been innovative in one or more of these aspects in a way that exceeds normal industry practices, while achieving at least minimum standards in all other areas of the project. This is to demonstrate that the scheme is well rounded and has not sacrificed one aspect to be successful in another, while also incorporating best practice measures that can advance the state of the industry. An Exemplar project therefore reflects the ideal industry goal of achieving a scheme's primary aims in a sustainable way, at acceptable costs.

what made the project successful

- Sustainability was built into the design philosophy from the very start of the project
- A 'fabric first' approach to the design of the dwellings helped achieve the energy efficiency requirements of the Code for Sustainable Homes in an affordable way
- Use of an offsite manufactured construction system helped to ensure quality detailing, increase predictability of delivery times, and reduce site waste
- The project team adopted a collaborative approach towards major issues, with everyone working together to find feasible solutions and the best way forward
- Housing managers and tenants were trained in the use of 'new' systems within the homes, reducing problems when occupants moved in

notable achievements

- The build cost was £1,228/m²
- A high level of quality was achieved with limited defects, which helped to realise an airtightness of 3 m³/m².h @ q50
- The project was delivered on time despite a relatively late request from the local authority to incorporate a special needs unit
- CO₂ emissions across the site were reduced by 49-54% beyond the requirements of the 2006 Building Regulations Part L
- 90% local labour was employed
- Most tenants were satisfied and there were few follow-up call-outs or complaints, attributed in part to the handover process
- There was a high level of community interaction and positive support from locals for the scheme
- The project has provided affordable housing specifically for people with ties to the local area



economic considerations

The build cost was £1228/m²

The scheme was one of the first Code pilot projects in Wales, so the Welsh Assembly Government (WAG) used a predicted cost uplift to demonstrate value for money while it identified what the true costs should be. A budget figure of 128% ACG (acceptable cost guidelines) was derived, 8% over WAG's 'acceptable' target of 120% at the time. Subsequently, the acceptable costs for a Code level 3 and 4 house were adjusted to £1250/m² and £1350/m² respectively. The overall cost achieved is therefore very reasonable

A high level of quality was achieved with limited defects, which helped to realise an airtightness of 3 m³/m².h @ q50

High quality of construction was delivered, as measured by the National House-Building Council (NHBC) Reportable Incidents Index: the project achieved 0.14%, compared to a national average of 0.5%. This also piloted the use of MMC, using a closed panel timber frame system to investigate the benefits of offsite manufacture. Offsite prefabrication helped to ensure that quality and detailing was sufficient to achieve the required target airtightness. It also helped make the delivery time predictable and allowed site waste to be reduced, as factory procedures eliminated the need for some site tasks.

Sample works such as walls were set up to show site workers how the end result should look, and onsite training was also given. The contractor's quality inspectors and a clerk of works visited to ensure high standards on site, and there were also regular NHBC inspections. In retrospect, the project team indicated that they would consider the use of additional offsite fabrication, particularly an offsite rendering solution, as this would reduce the risk of delays from site applied finishes often caused by poor weather.

The project was delivered on time despite a relatively late request from the local authority to incorporate a special needs unit

Due to a history of working together under a framework contract, the contractor and client have built up a level of trust. On this project, they worked collaboratively to find

solutions and resolve issues, even though it was a Design & Build rather than collaborative contract. Knowledge of each other's procedures and processes helped them to reduce or eliminate delays and surprises.

As soon as WWHA found out that a special needs unit was required, it raised the matter with the contractor and the proposed unit was taken off the critical path so that work on the other units could progress. Although WAG covered the cost of the special needs unit, constant communication between the contractor and the client was required to plan for it and reprogramme it in around other works.

environmental considerations

CO₂ emissions across the site were reduced by 49-54% beyond the requirements of the 2006 Building Regulations Part L

Achieving a good airtightness/low air infiltration rate helped to reduce the homes' overall energy demand. The design team used a 'fabric first' approach to make the building as thermally efficient as possible, while the project team liaised closely with the SAP assessor to find the most cost-effective heating solution. Eventually they opted for air source heat pumps with underfloor heating. The design team also worked together to gain CSH credits and ensure that the quality of construction delivered the target airtightness. After completion it was found that installing satellite dishes could potentially compromise the airtightness and thermal performance of the building. WWHA therefore had to appoint a specialist installer to fit dishes on behalf of tenants – something that would not normally be required, but became essential for the long-term integrity of the new homes.

Tenants will be provided with energy meters to help them understand their energy costs. When the homes have been occupied for a year, WWHA will monitor the energy usage to check it is as expected and that the homes are affordable to run. This will verify whether the design aspirations have been met, which will be helpful when planning future schemes.

social considerations

90% local labour was employed

The contractor favoured local workers and suppliers where possible (living within 15 miles of the site), subject to cost and quality requirements. It is the contractor's practice to source local subcontractors from client lists; these subcontractors can expect to be used on subsequent projects if their performance is satisfactory.

Most tenants were satisfied and there were few follow-up call-outs or complaints, attributed in part to the handover process

WWHA wanted to ensure that users understood how everything in the house worked prior to moving in. The usual WWHA handover process is to give residents a demonstration of systems two weeks before moving in. However, on this project there was an additional two-day demonstration event where specialist contractors, such as M&E engineers and plumbers, showed how the air source heat pumps and mechanical ventilation with heat recovery systems worked, as these are quite different to normal systems. This training was given first to WWHA housing managers, so they could provide immediate support to tenants, then to the tenants themselves.

To further assist tenants in getting to grips with the new systems, the contractor developed a quick guide in addition to the detailed manuals also provided. People seemed to understand the systems well, with few initial complaints or call-outs. WWHA is likely to roll out this handover approach to other schemes in the future.

A heating engineer will pay a subsequent visit to the homes to ensure everything is working correctly and that tenants have no problems. Residents will be surveyed after six months, one year, two years and three years to get longer-term feedback on the performance of their homes.

There was a high level of community interaction and positive support from locals for the scheme

The client and contractor both employed representatives who worked with the local community to find opportunities for engagement and support. The development was on the site of a derelict church. The sale of this land allowed the church to be relocated and rebuilt with an additional community facility within the heart of St Athan.

A consultation 'drop in' day was held in the local community centre, which was advertised in the local paper and through fliers. Newsletters were delivered to individual households. The consultation day featured a 3D rendered model of the proposed scheme to allow people to visualise the completed homes and how the development would sit within its surroundings. Overall there was a positive response from the community, which seemed to welcome the new development.

The contractor encouraged community ownership of the scheme by sponsoring the local fete, providing talks in the local school on safety, and offering teachers and pupils the opportunity to visit the site. It sponsored a 'house of the future' competition in the local school, with donated prizes of gym equipment, and there was also a competition for locals to 'name the street'.

The project has provided affordable housing specifically for people with ties to the local area

The WWHA lettings team worked with Vale of Glamorgan Homes 4U, a local letting scheme, to ensure the houses were offered to people from within the St Athan area. Over 100 people applied for the 16 houses, demonstrating the strength of local demand for the scheme.