



Awards 2014 Case Study

Award Winner

Sustainability Award - Our Legacy

Sustainable Housing Development: Great House Farm, St Fagan's

Architect Alan Gillard's belief in the benefits of sustainable building convinced developers Mulcare Ball to adopt his vision for their development at Great House Farm in St Fagan's.



The impressive results are proof to the construction industry that desirable, yet sustainable homes can be built on a small scale and still represent commercially viable prospects for developers.

Gillard Associates Ltd, is a firm of architects specialising in sustainable housing and design who worked alongside client Daniel Ball of Mulcare Ball Ltd, to convert the listed farmhouse and grounds into a mixed development of apartments and houses. By building voluntarily to a minimum of Code 4, the stakeholders have addressed – and, they maintain, solved – sustainability issues currently affecting the housing industry.

A driving force behind the design process was winning over the local planning authority which was nervous about a housing development on this sensitive site on the urban fringe. But, as a speculative project using private funding, it was equally important to find a method of construction that was fast, generated minimum waste and therefore had the potential to make the developer a reasonable profit.

The key concept was the fabric first approach, using renewable materials where possible, and creating future-proofed buildings that were inherently efficient throughout their lifetime without the need for complicated, bolt-on renewable technology.

The fabric first approach adapts established building components and methods to create an extremely efficient, virtually airtight envelope. This, combined with heat recovery, mechanical ventilation and a highly efficient heat pump for heating and DHW, resulted in an excellent SAP rating and allowed high scores under ENE1 and 2. The houses have extremely low resource usage, and scope for installing pv cells to provide occupants with the option of making their homes low or near zero carbon by supplying energy to the grid.

No-one is claiming the project is particularly innovative, as all of the technologies used are standard or have precedents. However, the holistic approach taken at design stage is ground-breaking, as this is the stage when key decisions having the most impact on the sustainability of the project, are made. One of these decisions was to use BIM technology for the lifetime of the project to manage and co-ordinate the design. It enabled the architect total control of information flow and assisted component procurement which, for example, enabled features such as

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Alan Gillard

Architect

modular bathrooms to be incorporated, resulting in substantial reductions in site waste.

But beyond the quantitative milestones achieved by the project, it was extremely important to Alan Gillard that the design should address qualitative criterion such as health, space and well-being. For this, the team looked to Europe for inspiration, studying the way internal space is used, and diverging from the very particular British way of selling houses by number of bedrooms, rather than by total square footage. Sun pipes were introduced to augment daylighting within the properties and the ecology of the development enhanced with green roofs.

Concepts gleaned by the architect from working with co-housing groups also influenced this softer element of the design, such as encouraging a sense of community by arranging houses around a communal space. There are other shared facilities at Great House Farm such as bike sheds, an electric car charging point, communal metering and even a

village pond, all designed to foster an environment of co-operation and negotiation, sowing the seeds of community from the outset.

And, attention has been paid to long-term quality of life in the development by taking on board space standards recommended by Lifetime Homes, and in ensuring good community safety and crime reduction measures in line with Secured by Design guidance.

Through their collaboration, the architect and developer realised that the 'recipe' for this scheme had significance for the industry in demonstrating sustainable housing – and even very low or zero carbon housing – is easily within the grasp of small developers. All that it requires is a rethink of traditional construction techniques and attention to detail. Between them they have set up Liv Eco, an organisation that is at the forefront of sustainable housing and development but also aims to be a benchmark for building on those principles.

“The volume house builders have been vocal in their call for reduction in building standards in Wales, stating that sustainability is making house building unprofitable,” said Alan Gillard, who doesn't hide his disappointment that WAG has made Code 4 compliance voluntary. “We are hoping we can inform the industry how to build relatively low cost, sustainable homes using a fabric first approach and without renewables and show that it can be done without bursting the bank.”

If the success of this scheme is measured in terms of end-user satisfaction it would certainly score very highly indeed. In the words of one resident: “I am extremely pleased with the development. The building, location, the landscaping, the pond, the birdlife, the quiet, the sound and heat insulation, the internal layout of my apartment and the number, size, height and quality of the windows are all excellent. I love its sustainability design and aspirations. I am very much enjoying living here.”

With phase two of the development underway and outline planning permission already granted for a further phase, Alan hopes that more home owners will soon be able to benefit from this low carbon footprint life style in a beautiful setting, just a stone's throw away from the amenities of a capital city (accessible by cycle route and public transport).

“The CEW award indicates our approach was valued, and recognises our effort to make a difficult equation work in the private sector in South Wales,” he said. “We were the smallest project to make a submission and the only privately funded one, so we were delighted to win.”

