

# Off-site is on song

Steve Wightman, managing director of ModularUK, explains how combining the use of timber with an off-site construction approach helped keep the birds happy at Rainham Marshes

**THE DESIGN AND DEVELOPMENT** of a new low-carbon building at the Royal Society for the Protection of Birds' (RSPB Rainham Marshes nature reserve in Thurrock demonstrates the advantages that building with timber through a fully modular approach can bring.

**The bird hide was built at Modular UK's factory, minimising the impact of the construction project on the delicate marshland**

By building the 'Shooting Butts Hide' off site and installing it in less than half the time than would be expected with traditional construction methods, ModularUK was able to ensure minimum disturbance to wildlife and habitats while delivering a high quality structure through a quick and efficient building programme.



For most of the 20th century, the marshes were used as a military firing range, so escaped industrial development and became a haven for wildlife. The RSPB is now undertaking a 10-year programme to improve the habitats for wildlife and visitor infrastructure at the reserve.

Built on the site of an old shooting butt, the new hide provides 46 viewing points through windows specially developed for the building to provide far-reaching viewing over the marshes. The 18x6m hide uses glue-laminated timber beam technology, clad with larch boarding, and has been designed to fit and blend with the surrounding landscape.

As Hettie Hirst, project officer at RSPB Rainham Marshes, explained: "ModularUK's off-site solution has enabled us to improve the experience for our visitors



without compromising our conservation priorities. The Shooting Butts Hide has been designed and constructed to the highest standards, and in keeping with our commitment to minimising environmental impact.”

Designed by HaysomWardMiller Architects, the hide was built in ModularUK’s factory at Driffield using specialist modular construction techniques. The off-site approach minimised the number of people and vehicle movements in the reserve. It also reduced the length of time working on the difficult site, which is in the middle of the marsh, 1,200m from the site entrance and 600m from the main visitor centre and services. The site also contains listed military heritage structures, which needed to be preserved during on-site operations.

By building the hide off site, the environmental impact of the construction work on the conservation area has been greatly reduced, while a built-for-purpose, attractive timber building has been developed and installed efficiently and to the highest quality standards. With projects such as this demonstrating the capabilities and advantages of using timber in modular construction, it is no surprise that this combination is becoming an increasingly popular one. ■

● [www.modularuk.com](http://www.modularuk.com)



## Off-site and modular construction partnership proves a winning formula

For construction clients and their supply chains, cost-efficiency looks set to remain the dominant focus for some time to come. Despite this, the drive for sustainability remains high on the industry’s agenda. Building approaches that marry these two priorities effectively and in a tried-and-tested way are growing fast in popularity.

It is widely acknowledged that timber is a sustainable choice for construction. Recognition has also grown that off-site construction (OSC) can lower the environmental impact of a project. When the two combine, a project’s sustainability credentials can become impressive. And crucially, OSC using timber can deliver a project with the high quality, time efficiency and cost benefits that are at the heart of today’s construction industry.

Building off site can provide real environmental benefits for a construction project both through the creation of energy-efficient structures and by minimising the environmental impact of the construction process itself. For example, OSC facilitates a reduction in the amount of waste a project generates, and maximises the amount of unused timber that is recovered through re-use and recycling. A WRAP

(Waste & Resources Action Programme) report has found that projects can reduce waste by up to 90% through increased use of modern methods of construction. This not only lessens pressure on landfill space, it also reduces demand on virgin timber and has significant carbon benefits – increasingly important as the industry drives towards a low-carbon future.

Substituting one cubic metre of wood for other building materials results in an average of 0.8 tonnes of CO<sub>2</sub> savings, according to estimates by the European Commission. When this carbon reduction is added to that achievable through OSC, the environmental benefit can be significant.

In addition to carbon savings achievable during the manufacturing and construction processes, both the use of timber and OSC techniques can significantly reduce the carbon emissions from the operation of a building by improving thermal efficiency and building envelope performance. Typically, structures built through OSC achieve airtightness figures that are three times better than Building Regulations requirements.

Sustainability has remained a high priority for the industry, but in the current

economic climate sustainability advantages must be supported by quality and efficiency benefits – it’s in meeting all of these agendas that OSC comes into its own.

With this in mind, it’s unsurprising that OSC has fast been increasing in popularity. Its market share is growing by around 25% year-on-year, not least because the approach allows significantly shorter and more reliable project time frames than traditional construction methods. Depending on the methods used, up to 80% of the construction process is carried out off-site, therefore on-site delays, such as those caused by bad weather, can be avoided.

Crucially, at a time when value for money is at the fore on all projects, feasibility studies and cost models show the added value that involving OSC companies can bring to a project, particularly through consultation and involvement from the design stage. Factory quality assurance procedures minimise the potential for defects, and eliminate snagging and costly rework. In addition, the shortened project time-frame enabled by building off site can offer financial advantage as structures are completed and available for use more quickly.