

Marne Barracks

Advanced modular roofing system



Rapid construction

The Ministry of Defence has embarked on a ten-year building programme to provide modern, comfortable living accommodation for its servicemen and women across the country. The improvements in England and Wales are being implemented under Project SLAM (Single Living Accommodation Modernisation), with the upgrading and rebuilding programme due to be completed by 2012.

At Marne Barracks, ten brand new accommodation blocks were constructed in record time using sophisticated modular building techniques. Each building has a raised central core section from which three 'wings' radiate – giving the buildings a Y-shaped plan. The three-storey buildings are each topped by a curved metal roof.

Each building houses 54 junior ranks in study bedrooms with en suite bathrooms. Each floor has a communal area, utility room and shared bathroom. These high-quality buildings offer comfortable, well-equipped living quarters for the service personnel stationed at Marne.





High quality as standard

Ground level construction achieves exceptional build quality

Design challenges

Quality of materials and speed of construction were two of the key criteria for Project SLAM. Main contractor Debut Services (a joint venture between Bovis Lend Lease and Babcock Infrastructure Services) needed to find a robust roofing system that would be quicker and safer to erect than the traditional timber and tile alternative.

Drawing on expertise from across its businesses, Corus developed an innovative modular roofing system called Hi-Point, which satisfied the quality, safety and speed of construction criteria set by the main contractor. Debut Services was impressed by the attention to detail and commitment shown by Corus in creating a roof design

that met the precise requirements of Project SLAM. The new system was first put to use at Gamecock Barracks.

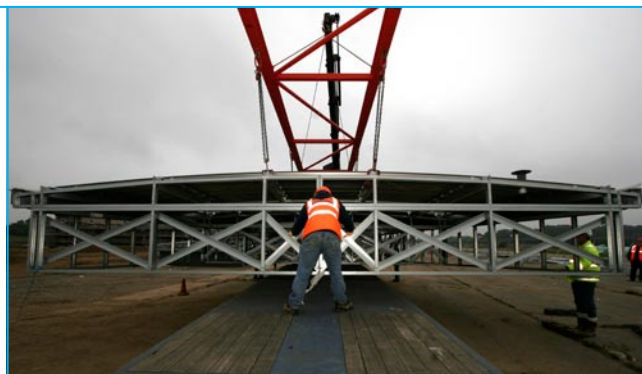
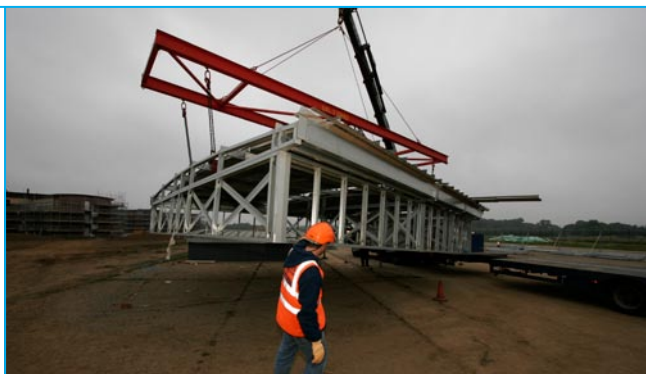
The Hi-Point modular roof structure comprises a pre-fabricated steel frame, which is pre-assembled on the ground. Each ten metre-long module consists of three primary frames, and is clad with Corus Kalzip aluminium standing seam panels, which are fitted at ground level.

The Hi-Point system is extremely versatile, and can be designed to incorporate a variety of alternative coverings and to fit a range of profiles.



Innovation in action

Lightweight, simple and robust roof designed to meet client requirements



At Marne, the modular roof units were assembled on a disused runway. These roofing sections were purpose-built for the Marne project. Once the main building frame had been constructed by a modular building specialist, the entire roof structure was lifted and secured in place. Eight modular roofing sections were fitted on to each building – two for the central core, and two for each of the three wings.

Once in place, the only work to be carried out at height was to secure the roof to the main building structure and 'zip' the separate modules together to provide a completely weather-tight cover.

The modular roof solution offered a number of advantages over more conventional alternatives. Importantly, it significantly reduced health and safety risks on site, since very little work had to be carried out at height. The bulk of the construction work was carried out at ground level, before the roof was lifted into place.

Ground level construction also meant that very high quality standards could be maintained and very tight tolerances achieved, since detailed inspections could be carried out on the ground. The all-metal roof is lighter in weight than a timber and tile structure, and is not subject to warping or shrinkage. It also reduces the fire risk in the finished building.

Speed of construction was another major advantage of the Hi-Point modular roof. The roof sections were assembled at the same time as the main structure – taking a significant amount of work out of the critical path. These two principle elements of the building were thus completed almost in parallel, rather than one after the other.

Once the building frame was erected, the whole 650 m² roof was installed and secured in less than six hours. Such a rapid programme time could not have been achieved with any other form of roof construction.



Cost control

Rapid and straightforward building methods keep costs down

Modular construction introduced cost savings too. A shorter programme time inevitably reduced costs, and the minimal number of trades required on site helped to keep labour costs down.

The Hi-Point roof system is constantly being refined and adapted with each new project. At Marne, the finishing details such as eaves and flashings were improved, based on the experiences at Gamecock Barracks – streamlining the final stages of the installation and creating a higher quality finish.

This advanced modular roof provides an attractive, robust and cost effective solution for large scale projects, where high quality design has to be combined with repeatability and a tight construction schedule.

Key players

Client: Defence Estates
www.defence-estates.mod.uk

Prime contractor: Debut Services Limited
www.debutservices.com

Modular roof supplier:
Corus Hi-Point
www.corus-hipoint.com



www.corus-hipoint.com

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