



Selecting roof coverings used to be based on materials alone. Now, says **KATE HAMILTON**, there is the choice of onsite or offsite construction too...

Cembrit offers continuously ventilated ridges made from lightweight fibre cement, which allows the building regulations for control of condensation to be met



SETTING YOUR SITES

In housebuilding, time really is of the essence. Any time saved onsite can result in considerable savings for the bottom line – so it is no surprise that developers are constantly looking for ways to become more efficient. One way to save time is to invest in offsite production, and, like other sectors of the housebuilding industry, roofing is joining the growing trend.

“Offsite construction has many advantages over traditional building methods, and it is continuing to grow in popularity,” explains David Sherry, sales manager at Dreadnought Tiles. “This is due to the amount of time that is saved onsite, and all the associated advantages of working in a controlled factory environment rather than outside on a building site in changeable weather conditions.”

Of the 22,544 homes planned by 17 of the UK’s largest housing associations for next year, 56.8% will be constructed using offsite methods, including timber frame and modular construction. However, despite the advantages, offsite construction methods are typically associated

with affordable housing, student accommodation and flat roofing, rather than high-end housing.

“There are no opportunities for prefabricated pitched roofs in plain clay tiles, as they still need to be laid by a skilled roofer on site,” continues Sherry. “Also, offsite construction doesn’t allow for the kind of individuality of housing on a site, which is favoured by most planners.”

Ged Ferris, marketing manager at Cembrit agrees: “Offsite production is increasing in popularity for certain types of dwelling, in particular multi-dwelling units and mixed-use construction projects. The main reason for this is the cost savings that can be made through the reduced time onsite. However, traditional construction is still the norm for most detached and semi-detached dwellings.”

Cembrit manufactures fibre cement slates, which have the benefit of closely resembling natural slates but, unlike natural slates, do not require grading and sorting before installation. They are also lightweight and can be easily cut ▶



ABOVE BMI Redland Cathedral Postel at Fosters Croft in Hatfield, Doncaster

THIS PIC Hagley Homes chose Dreadnought’s smoothfaced Brown Brindle plain clay tiles for its latest Worcestershire development



ABOVE Dreadnought's Dark Heather plain clay tiles were selected by Spitfire to match existing tiles on this historic Grade II listed Manor House

THIS PIC Cembrit manufactures fibre cement slates, which have the benefit of closely resembling natural slates

BELOW Robinson Manufacturing is seeing significant increases in developments using spandrel panels instead of traditional block work



using hand tools, therefore removing the need for the dust suppression equipment required when using machine tools. This easy cutting process also means that fibre cement slates lend themselves to complex roof geometries that can be challenging when using natural slate. There are also plenty of complementary accessories available including Cembrit's ventilated ridges to ensure compliance with ventilation regulations. Its slates are also BBA accredited so can be specified with the peace of mind that they have been rigorously tested and meet highest possible performance standards.

Forticrete is another manufacturer that offers a unique slate tile solution, Hardrow Slate. Hardrow Slate provides the same architectural and aesthetic appeal as natural stone, and it's these benefits that resulted in Taylor Wimpey installing them in a high value-project in one of the UK's best-preserved stone towns.

In total, Hardrow slate tiles were used on 40 roofs at Lamberts Place, in Stamford, Lincolnshire: a premium development consisting of a range of three- to six-bedroom homes. As with any building schemes of this scale, the project came with its own unique considerations. Chief among

these was maintaining the aesthetic of the local area.

"Respecting the aesthetics of an area is of course a key concern for any new building work, but it's especially important in regions which are synonymous with particular types of building materials – such as Stamford's slate," explains Chris Pollard, area sales manager for Forticrete. "Forticrete's Hardrow Slate is an attractive solution for the area. Not only is it in keeping with the look of Rutland and the surrounding towns and villages, it is a fraction of the price of natural slate – making it the ideal product for use in high-value, extensive projects, such as Taylor Wimpey's development in Stamford.

Hardrow's manufacturing process is unique. While the base slate is machine made, the hips and valleys of the tiles – which gives Hardrow its distinctive look – are completely handmade. One of the specifications for the Lamberts Place development was that it should reflect the distinctive character of the wider town. Thanks to the unique way in which Hardrow is manufactured, and because no two slates are the same, Forticrete managed to achieve this.

BMI UK & Ireland also offers a comprehensive range of roofing solutions – from concrete, clay and ►



LEFT Forticrete's slate tile solution, Hardrow Slate, provides the same architectural and aesthetic appeal as natural stone

BELOW BMI Redland Heathland Autumn at The Boatyard in Yarnton, Oxfordshire

metal tiles and reconstituted slate through to reinforced flat roofing technology solutions including bitumen membranes, hot melt, single-ply and liquid waterproofing systems.

"Large-format concrete tiles are a popular and highly cost-effective option for housebuilders because of their economy, ease, and rate of laying – not least because there are fewer tiles per square metre," says Paul Campbell, marketing and technical director, BMI UK & Ireland. "One popular example of a large-format interlocking concrete tile – with a plain tile appearance – is the BMI Redland DuoPlain range. This combines the classic proportions and good looks of traditional double-lapped plain tiles with all the time- and cost-saving features of a modern, single-lapped tile."

Another, often overlooked, benefit of large-format concrete tiles, and one that increases their appeal to some specifiers and public authorities, is their sustainability in the context of embodied carbon. Engineering consultants Arup (commissioned by BMI UK & Ireland) analysed the carbon dioxide emissions of the company's operations. The figures in the Arup report show that the embodied energy of concrete tiles at 91-146MJ/m² is half that of equivalent clay tiles.

Energy efficiency is a key consideration in housebuilding, as the industry seeks to reduce its energy consumption and emissions of greenhouse gases to help prevent

climate change. But its not just the roof covering itself that can increase sustainability.

"Insulation in the roof is extremely effective at reducing heat loss in a property but it does need to be balanced with effective ventilation planning," continues Sherry. "In recent years, we have seen more 'warm roofs' where, rather than being an empty attic space, roofs have become part of the living space within a house. The availability of a wide range of fittings and roofing components to match the clay roof tiles allows designers to create roofscapes which can provide a comfortable living space through the use of dormers, eyebrows and turrets."

However, this does mean that truss designers are increasingly having to calculate more complex combinations of roof loadings, taking into account PV panel weights, hoist loads and MVHR (mechanical ventilation heat recovery) systems on new projects.


"A resulting development suitable to the push for lower carbon footprints is attic trusses with metal web bottom chords, which are becoming increasingly popular," explains Mark Smy, managing director of Robinson Manufacturing. "These allow the MVHR ducting as well as other services to be fed through the metal webs of the bottom chord, while still providing the traditional attic space above as part of one complete solution. Individual component metal web rafters can also be utilised to achieve the same results."

So where does the future lie for



the roofing industry? Well, apart from innovations in materials and installation driven by pre-manufacture and site practices, roofs will increasingly be seen as more than simple roof coverings.

"Shelter and protection are the primary functions, yet they [roofs] can also simultaneously serve as social spaces, rainwater attenuation systems, leisure facilities, microgeneration sites and so on," concludes Campbell.

Such innovations may offer value to housebuilders, but it is homeowners that will really reap the rewards. 

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