

Gimme SHELTER



Roofing is a property's crowning glory, and it has to look the part; however, to top it off, it must be environmentally friendly and economically sound too. **KATE HAMILTON** reports



Offsite production is increasing in popularity, says Donaldson Timber Engineering

While environment and economy are vital considerations when choosing roofing products, understandably it is kerb appeal that turns many a housebuilder's head. But, however beautiful a roof may be, if it sticks out in its surroundings, it won't be welcome in its neighbourhood. Planning departments, not product brochures, should be a housebuilder's first port of call.

"The design and appearance of houses are the most likely reasons why planning applications are rejected by planning committees," says John Lambert of Forticrete. "The challenge faced by housebuilders and developers is to make sure material specification not only fits in with the local surroundings but also the fabric of the building in a cost-effective way, without compromising on quality."

Housebuilders may find a lot of decisions are made for them, as planning restrictions may mean a developer has to be more sympathetic than creative.

Alex Patrick-Smith, managing director for Dreadnought Tiles, comments: "Planning restrictions may affect housebuilders' choice of roofing material. They may be required to preserve the distinctiveness of a particular area by using a particular coloured tile."

Budget will limit options further. While natural stone slate may be a popular choice for high-end properties, many developers will be looking at more cost-effective options. Traditional roofing tiles have always been the popular choice as they easily blend into any built environment. However, there are a number of roofing solutions that mirror the aesthetics of natural slate but offer a more competitive price point, can be deployed easily and are guaranteed to stand the test of time.

It is vital that housebuilders and developers are fully aware of the alternatives available to them, and it is the manufacturers job to communicate the options to them.

"The question we most often get asked by housebuilders is 'what are the alternatives to natural slate, and how do they compare?' In this climate, concrete roofing tiles are the obvious answer," says Lambert.

"Concrete roof tiles retain a characteristic that mellows with age; and, as with natural stone, the individual colouring of these tiles varies slightly from slate-to-slate, recreating the traditional appearance local planners and communities crave that is so hard to achieve within tight budgets."

The cost of material isn't the only consideration – the cost of labour must also play a part, as the skills crisis drives build costs through the literal roof.

"Housebuilders will choose a roofing material to suit the particular project they are working on. If they are working on low budget housing, they may choose large-format concrete roofing that can be quickly installed without the need for skilled roofers that would be

BELOW Dreadnought's Dark Heather rustic tiles are a close match to the solar panels and they tone well with the buff brickwork at Kevin McCloud/HAB's new development outside Winchester

BOTTOM Forticrete is a leading manufacturer of concrete substitutes for natural stone walling and dressings and niche concrete roof tiles

BELOW RIGHT Offsite manufactured trusses by Donaldson Timber Engineering



required to install a traditional roofing product, choosing to accept the compromise that will have on appearance,” says Patrick-Smith.

Housebuilders don't just have to consider the cost of a roof now; they might also consider the value it can add to a development in the future. The right choice of roof can pay for itself over the years.

“High-end housebuilders, seeking to maximise the gross development value of a site favour quality building products whose appearance will not only help to sell the property but will also improve over time, like traditional plain clay roof tiles,” adds Patrick-Smith. “A high-quality clay roof will add value to a project and its clear specification within the planning documents may even help to facilitate planning if it is seen to blend in with the local vernacular.”

Clay tiles also come with some impressive eco credentials. They are BRE A+ rated and are considered to be a sustainable building material

because of their durability. According to Dreadnought, its clay tiles have a lifespan in excess of 100 years, evidenced by a thriving second hand market where it says old tiles often sell for more than new ones.

There are also a number of ways housebuilders can achieve their sustainability agenda using concrete roofing tiles, which are in line with the National Planning Policy Framework. While Forticrete acknowledges that concrete products have not always been seen as the most sustainable choice, their durability means they are an ecological choice.

These qualities will be increasingly sought after as environmental performance gains more prominence. Although the erosion of subsidies has dampened British enthusiasm for solar panels, the pressure to use sustainable building materials and methods will only increase.

Materials from sustainable sources, such as timber, are prized for being recyclable and biodegradable.

“Timber truss construction is not only traditional but in our view one of the most sustainable roof structures available to the construction sector for now and into the future,” says Mark Smy, managing director of Robinson Manufacturing Limited. “No other roof materials are comparable in terms of impact on the environment.”

The environmental residue from installing a roof is gaining as much attention as the materials used to build it. Companies are upping the ante to ensure that waste is minimised, recycling is maximised and harmful emissions are limited.

“Over the past two years we have invested in excess of £250,000 in equipment to recycle our waste timber, which is converted to fuel for onsite biomass plants,” adds Smy. “Our most recent investment in onsite recycling equipment has reduced the amount of wood offcuts sent to landfill to zero and we estimate that in the last 12 months, we have converted 400 tonnes of wood waste to energy.”

There is increasing pressure on housebuilders to avoid landfill altogether, and companies are investing more into clearing up their mess. More serious consideration is also being given to the environmental impact of manufacturing processes.

For example, a lot of energy in the clay manufacturing process is lost during firing, cancelling out some of its environmental advantages. ►

BELOW Robinson Manufacturing has invested in recycling equipment. Here wood waste shredded onsite feeds biomass generators



Alternatively, concrete tiles don't need to be put through a kiln, making them a more environmentally sound choice during the manufacturing stage.

"Plain tiles use 75kg of raw materials per square metre in the manufacturing process, whereas our Gemini tile uses 45kg of raw material per square metre," says Lambert. "This reduces the CO₂ emissions created from the manufacturing process and transportation of the raw materials and finished goods to site by up to 40%."

Manufacturers are continually looking for the next innovative product or process that will revolutionise their business – whatever material they choose to use.

Luke Roberts, business development director at Donaldson Timber Engineering, says: "There is no doubt that offsite production is increasing in popularity and this is customer-driven. This is partly because of the current skills shortage within the labour market and the requirement to increase output. The main benefits to offsite are the consistency of quality

RIGHT Different coloured Dreadnought machine-made clay roof tiles were used on buildings at Bishopstoke Park luxury retirement village in Hampshire

BELOW Output can be increased using offsite production, says Donaldson Timber Engineering



and workmanship, along with the increased speed of construction."

Lambert agrees that modern methods of construction are the way forward for manufacturing and housebuilding, with their cost and time-saving prowess.

"The ability to reduce the number of products needed during the building process is the holy grail of construction," says Lambert. "SL8, Forticrete's large format concrete roofing tile, requires just eight tiles per square metre compared to the 10 tiles per square metre needed for many alternatives. With approximately 20% less tiles required per roof, the tiles are quicker and easier to lay, handle and transport. With less product required, the potential for damage on site and waste in the manufacturing process is also reduced, resulting in cost and time savings.

"In terms of improving roofing products when they are deployed on site, there has been a move away from mortar bedding, which has historically failed leading to the NHBC receiving a high number of claims. Instead mechanically fixed units have been favoured because they are more secure and maintenance free."

But while technology is often the answer, sometimes only a traditional solution will do. "Sometimes planning restrictions can only be met by using a tile that is fired in the customary way to give it a natural colour, rather than with techniques that use spray-on stains," says Patrick-Smith.

Dreadnought, which manufactures three ranges of traditional clay roof tiles (machine made, rustic and handmade), says that the natural Staffordshire clay colours of its tiles have subtle variations that can only be

obtained through control of the kiln atmosphere, not through modern artificial methods.

However, the company is finding ways to blend its tiles into today's environmental agenda. "Solar roof tiles are not as popular in the UK as they are in other parts of Europe, largely because of their aesthetics," adds Patrick-Smith. "They can sometimes compromise the look of the roof, but Dreadnought's Staffordshire Blue and Dark Heather clay tiles are a close colour match for solar panels and avoid the stark contrast between the panels and the roof tiles and by using special fittings, the solar panels can be fitted flush."

Robinson Manufacturing also has solar in its sights. "Increasingly, we are asked to design roofs in consideration of other sustainable features, like the weight of solar installations," says Smy. "Our designers are all highly trained in ensuring that roof designs are appropriate for the proposed build, whatever the build specification."

Everyone needs a roof over their head, however building this basic need comes with increasingly complex decisions. [sh](#)

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