

Trends

light in weight, big on design



When it comes to building and renovation, lightweight construction is proving to be a popular, cost-effective choice.

WORDS LUISA VOLPATO

WE CAN PROBABLY BLAME THE FAIRYTALE of the three little pigs and the big bad wolf for the common misconception that a brick house is the only option. These days, the ideas in this fairytale are being successfully challenged by architects, builders and homeowners.

In recent years, the popularity of lightweight construction has risen significantly, says Robert Caulfield, Managing Director of Archicentre, the building advisory service of the Australian Institute of Architects. "What we have certainly seen with our architects and the general public who use our design services, is that there's been quite an increase in people who want the modern look that you can get with lightweight materials," says Caulfield.

"That's certainly changed dramatically, compared with, say, 10 or 15 years ago, when most people wanted a brick finish." Lightweight construction is typically construction based on piers or stumps with a timber or steel frame and then clad in a range of lightweight materials, such as fibre cement, rather than traditional brick or masonry built on concrete footings.

ANY STYLE, ANY FINISH

With the wide range of cladding available you can replicate a variety of different styles, from the traditional to modern, with a range of finishes.

"Probably the most popular look at the moment is a coloured rendered finish," says Caulfield. "It is more accepted now that you can get a lightweight constructed building that looks identical to the rendered finish of a solid brick building which would cost a lot more to build.

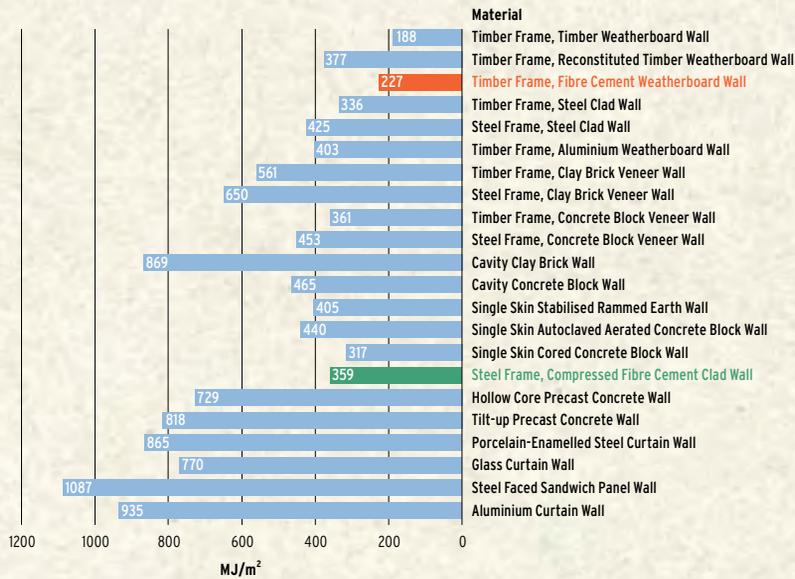
"There's also a range of new materials such as imitation weatherboards made of fibre cement but without the disadvantage of wood that can rot or be attacked by termites.

"So you can get the same look without the ongoing maintenance and deterioration over time, as well as sophisticated finishes at a lower cost," he says.

WORK SMARTER, NOT HARDER

Construction using lightweight materials has become popular not only because of the range of cost-effective designs, but also because it eliminates the need for and cost of a lot of >

EMBODIED ENERGY (MJ/m²) OF WALL CONSTRUCTION SYSTEMS



WHERE SHOULD YOU FOCUS YOUR ENERGY?

We know about ways to be energy efficient around the home, but when building or renovating, Robert Caulfield says you should strive to build a home from materials that have **minimal embodied energy**; that is, little energy has been used in producing those building materials in the first place.

"The material with the **least amount of embodied energy** of all is **timber**, closely followed by other lightweight materials such as **fibre cement sheets** that have about one-and-a-half times the embodied energy of timber," he says.

"In comparison, the production of brick uses four times the embodied energy of timber, cement five times, glass 14 times, steel 24 times and aluminium uses a whopping 126 times more embodied energy compared to timber."



excavation work and reduces the number of tradespeople involved.

"We all know that bricklayers are often hard to find, but with lightweight materials, construction can be done by the carpentry trades," explains Caulfield. "You don't need to excavate for a concrete slab or footings as you do for traditional brick veneer construction, so the site can be left very much intact - so it doesn't change things like the natural water run-off around the house."

If you excavate and flatten out rather than build on the natural slope, you need to add in plumbing so rainwater runs off the flat slab.

Rising damp can occur when water gets stuck, doesn't run off and collects around the foundations. Because full lightweight construction typically uses stumps and piers, it is off the ground, allowing the water to flow straight off the ground and without pooling.

"This type of construction also gives you a fair degree of flexibility in being able to have split levels; and on sloping sites you can just build straight on the site rather than having to level it, which is not always feasible.

CRACKING UP

Cracking is one of the most common problems homeowners face due to climate changes.

"When soil dries out, due to long periods of dry weather or drought, strain is put on the house structure and cracks can appear as quickly as overnight," says Robert Caulfield.

"Buildings sitting on soils that have shrunk can accommodate some movement but not a great deal. Statistics collected

by Archicentre show that in many states solid brick and brick veneer houses are most at risk of cracking that could potentially lead to costly repairs or reconstruction work (see table below).

"Cracks usually appear in internal or external walls diagonally from the corners of windows or doors. "If the cracks are two to three millimetres in width you probably have no need to worry, but if they are five to 10 millimetres in width then it is a sign that serious reconstruction may need to be done."

In contrast, lightweight materials such as fibre cement weatherboards typically fare better as they have flexibility to move with shifting soils.

INCIDENCE OF CRACKING IN HOUSES BY CONSTRUCTION TYPE

STATE	SOLID BRICK	BRICK VENEER	LIGHTWEIGHT MATERIALS
NSW	45%	25%	25%
Vic	58%	43%	27%
Qld	33%	22%	15%
SA	60%	20%	43%
WA	40%	40%	25%

Source: Archicentre.

"Many of these materials have the same low-maintenance qualities that brickwork has, but without the downsides such as cracking due to changes in climate as well as the greater cost if you are going to renovate in the future."

MY RENOVATION RULES

And whether we outgrow our homes or just want to upgrade, renovating is what lots of us like to do.

"The most common renovation we see is when you have a typical three-bedroom home and renovate it to include a fourth bedroom, usually the master bedroom, complete with ensuite and walk-in wardrobe, along with a kitchen upgrade," says Caulfield.

"Basically it's converting a typical first homebuyer's house into a four-bedroom up-market new home."

When extending, he says, you need to consider whether you go up or out, and the implications of that in terms of budget, land space and design.

"It's the relationship between the indoor and outdoor space that is important to enable you to get the maximum value out of your renovation.



TRADE SECRET

» THE BEST RETURN ON RENOVATION

If there is one piece of advice Robert Caulfield gives to would-be renovators it is to not get carried away and lose sight of your budget, especially if you are upgrading with the view to sell.

Forget the flash kitchen stove or pricey bathroom tiles; that's not what is going to add most value to your home, he says.

"The smart way to get good capital gain on a renovation is to use mid-price-range materials, appliances, finishes and fittings, but with a really good design concept," says Caulfield.

"You only get one chance to make a good first impression, so the renovation needs to have that wow factor that attracts someone's attention and makes them think, 'I want that house'.

"That starts with an imaginative design concept that might include the arrangement of space such as cathedral-style ceilings, or a large picture window opening onto a courtyard, or some factor that sets it apart from your average house."

Caulfield says that lightweight materials offer much more versatility when renovating than traditional construction like brick veneer. And with the range of styles and finishes, you are only limited by your imagination.

"It's not about spending a lot of money on expensive fittings and appliances like a lot of people think," he advises.

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"We have seen cases where people have done ground floor extensions on fairly small blocks and have ended up with very little outdoor space, which can actually devalue your home if you're not careful.

"In deciding whether to go upstairs, people need to make that value judgment as there is an additional cost of about \$10,000 for the staircase and the area you need to build the staircase.

"However by going upstairs using lightweight materials, you can add to the value of the house, particularly if you can get good views from it, and you also won't be losing valuable land space such as the backyard.

"The materials really free up the designer's ability to do some creative things at different levels, for example, an overhanging room that projects two metres or more out over the room below it so you still have good space at ground level and it can be done without columns."

GET CREATIVE

"An extension can appear to float into space and you can build in some good three-dimensional

effects, which would be almost impossible or very expensive to do with masonry or brick.

"And if your orientation is right, for example, if the room is north facing and captures the sun, it can even enhance the energy efficiency of the place where the projecting room above can shade the room beneath it," says Caulfield.

If you have a typical older brick home and you do a renovation out the back, most people think you have no choice but to match the brickwork with a brick veneer extension so the renovations fit in and appear seamless.

SMART CHOICES

Caulfield advises that what you can do is construct the renovation using lightweight materials. Then, with the money you save compared to what you would have spent on traditional construction, you can put new cladding over the new and old part of the house so you can make the whole house look integrated and new.

So whether your home is old or new, you're the only one who needs to know the difference. 🏠