

selfbuilder + homemaker

SEP/OCT 2019

Wellbeing in the West Country

Why a German kit-built house was the ideal prescription for a couple near Bristol focused on healthy living

6 GLAZED DOOR PROS & CONS

Our expert looks at why you'd pick bi-fold doors over lift and slide, depending on your needs

Finishing with style

The final chapter of Sarah and Andy Ball's self-build story concludes in Derby

Family ties

Why a couple decided to build their dream barn conversion next to their in-laws





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FROM THE EDITOR...

When you hear first hand some of the tales of woe – the things that can go wrong along the road for people building their own home, you do wonder how they made it through in one piece! However, no matter how many build-it-yourself shows you watch, trade shows you visit or magazines you read, you'll never find out just what your project has in store until you embark on it. Every road, and its possible pitfalls, is slightly different.

That's why our range of case studies in this issue presents not only a useful range of differing problems to solve in each case, it's also a different dream in each case. This also means each one is a rattling good read! Our freelance writers have traversed the country, from North Yorkshire to the Bristol coast, finding self-builders keen to share not only their triumphs, but also their minor tragedies.

I visited Sarah and Andy Ball in Derby for this issue, and their house (covered on page 40) seems a tranquil, white box at first glance, and you'd never guess the challenges they had to overcome. From two builders disappearing, to having to take over project management half-way through, to the huge glass sliding door panels being delivered the wrong way round, they certainly have their share of dinner-table stories.

However, despite the trials, with a bit of knowledge and some grit and determination, anyone with the resources can succeed at this. Also, as Sarah and Andy show – and as we have documented in the series of articles in *Selfbuilder + Homemaker* on their project that concludes this issue, it doesn't need to come at a hefty cost.

JAMES PARKER



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A sustained effort

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Despite having an architecture degree, Tom Holliday and his wife Carly turned to an architect friend to help them transform a dark, dated cottage into a light and spacious family home near York

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Finally moving in to their dream self-built home was a very long time coming for David and Deanna Martin

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While most people undertaking a project will buy an unfamiliar plot or house, and possibly even in an unfamiliar area, a couple in Cheshire took the opposite approach

REPORT CALLS FOR 'LIGHTER TOUCH' FOR SELF-BUILD

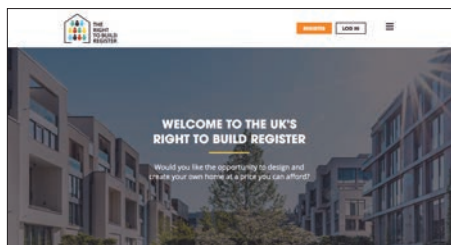
The Institute of Economic Affairs recently published a report on solving the housing crisis – 'Raising the Roof' – which included a call for a "lighter touch" when it comes to planning for self-build homes.

The report, compiled by Jacob Rees-Mogg and Dr Radomir Tylecote, highlights the issues with the UK housing market and the drivers behind these issues. It identifies planning and its tendency to favour large-scale builders as a significant factor, among other things.

The report goes on to make several recommendations, including doing more to boost self-build. This includes the introduction of Build It Yourself (BIY), which would see urban local authorities allow a "light touch notification" that would allow self-build planning permissions to be fast-tracked. It would also see the introduction of optional "style guides" for streets or given areas.

Writing on the National Federation of Builders website, senior policy advisor for the House Builders Association Rico Wojtulewicz said: "BIY is absolutely necessary, because councils have barely delivered any homes through their self-build registers and certainly not in England's most expensive regions. This policy should favour those who truly need housing, not just those who can afford land or the build risk."

NEW RIGHT TO BUILD REGISTER GOES LIVE



A new digital platform that will connect every local planning authority with those interested in building or commissioning their own home has gone live.

The first national Right to Build Register will allow people to register with multiple councils in one place. It will also connect those interested individuals or community groups with opportunities in their area as well as potential suppliers.

A Communications Hub will keep registered users up to date on what's happening in their chosen areas.

The Register has been launched with the aim of bringing "like-minded" people together to redesign the way housing is delivered.

Help self-builders avoid overpaying VAT

The National Custom & Self Build Association (NaCSBA) is conducting a value added tax (VAT) survey to obtain a detailed look at the number of people self-building in the UK.

Compiling data on the number of VAT exemptions along with other statistics, such as information on the number of single dwellings created per year, it gives the association an estimate of the number of self-builders in the country.

NaCSBA uses this data to inform its work campaigning for change and lobbying government's in the UK to create more opportunities in the sector, both for businesses and would-be self-builders.

From 2019 it will be easier to calculate the size of the sector as the 1APP planning form now includes a question to help gather this kind of data. NaCSBA is looking for people to help compile the data for previous years.

The association is asking anyone who has self-built, custom-built, commissioned a new home or converted a building into a home to take the time to complete the survey, which comprises nine questions. Responses are anonymous and will "make a huge difference to the work we do as an organisation, helping us to make custom- and self-build more of a mainstream choice for more people," NaCSBA says.

Andrew Baddeley-Chappell, NaCSBA CEO commented: "This VAT survey is critical, as knowing the size of the sector empowers us when having high-level discussions with government and industry about the needs of the market and its potential. We're actively working to create more opportunities for more people to access consumer-commissioned homes that suit their lives."

To complete the survey, which closes on 30 November, visit the website www.selfbuildportal.org.uk



New Cabinet remains supportive of self-build

Early indications show that Boris Johnson's new Cabinet remain supportive of self-build, according to the National Custom & Self Build Association (NaCSBA).

In a recent debate in the House of Commons, Right to Build Task Force ambassador Richard Bacon MP stressed once again that custom- and self-build housing offers a range of benefits, such as its potential use for affordable homes, a range of tenures and generally offering people more choice for housing. He asked that the Government support NaCSBA's recommendation to introduce a 'Help to Build' scheme, similar to the existing Help to Buy one. Finally, he emphasised the need for a planning reform.

Minister of State for Housing and Planning Esther McVey was positive in her response. She commented: "We want to have the right to build. We want to be able to make sure it is not a few companies building thousands of homes but there could be thousands of individuals making their own home. That is what we are about, choice and opportunity."

McVey showed further support at the RESI Convention in September, where she said: "So many places around the world have far more people building their own homes, so we're going to be there, whether its support for Right to Buy or Right to Build, and also supporting communities, for Communities to Build."

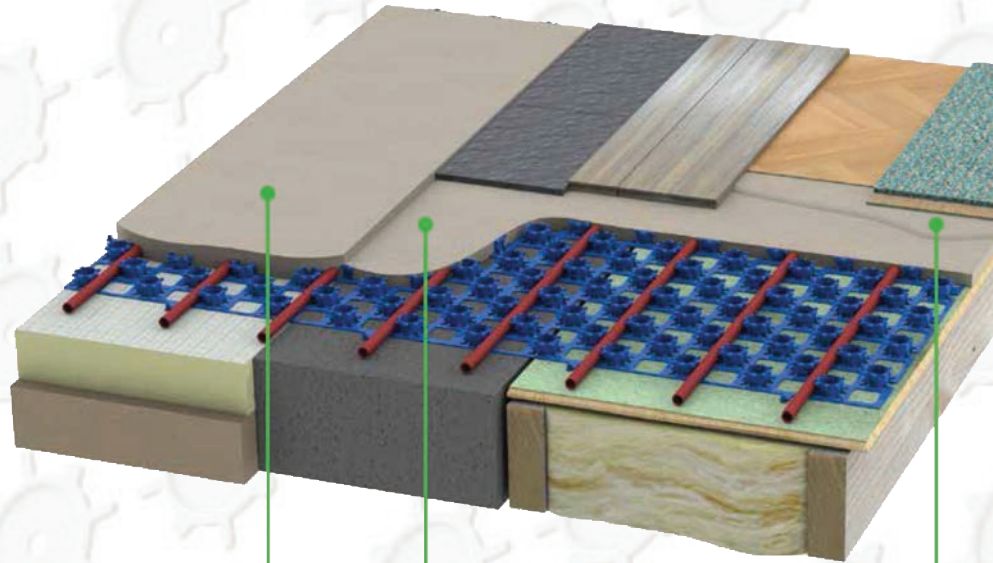
McVey will appear on the Grand Theatre stage at Grand Designs Live in Birmingham on 9 October, discussing the "creation of better and more beautiful homes" with Kevin McCloud.



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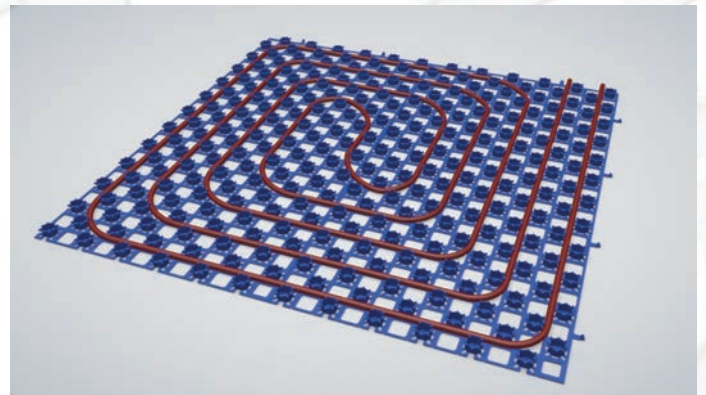
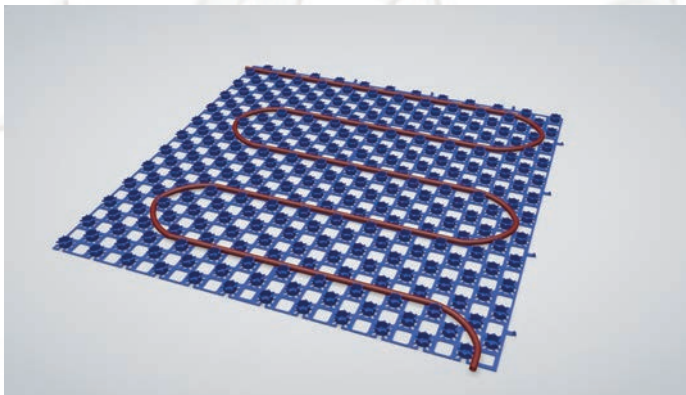
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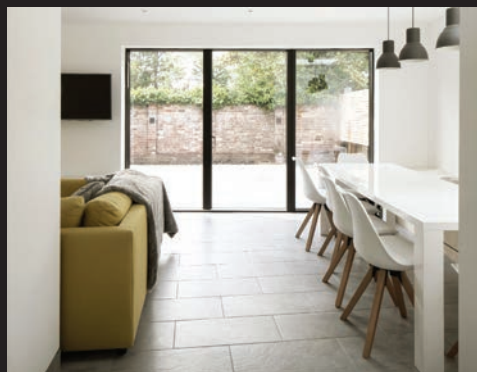
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A BLEND OF OLD AND NEW TWYFORD, HAMPSHIRE

Paul Cashin Architects has completed an extension to a Grade II listed property in Twyford, near Winchester. The original house dates from the 17th century, although it had been remodelled and extended during the late 18th century. The owners wanted to explore the potential to extend the home for their growing family, but with the cottage being a listed building, they were unsure as to what they could do.

The brief was to replace an existing lean-to and 20th century conservatory with a new modern, contemporary extension. The design was developed in close consultation with the local authority as well as their historic environment department.

The extension is accessed via a small link portion. The link aims to have the effect of "walking through a portal into a seemingly different dwelling," one that is modern, bright, light and airy with clean lines and white walls.

Complementary aspects were also incorporated, such as the "strategic placement" of windows and roof lights in order to cast light over walls and corners to create little nooks, replicating the dimly lit "cubby holes" and "odd corners" of the existing property. The overall form of the extension is informed by the "awkward shape and uses of the site", resulting in the walls not being parallel and splaying out at different irregular angles.

Externally, black-painted timber larch cladding is used as the primary material, contrasting with the white painted brickwork of the original house.

"Visual depth and distinction" has been added to the cladding through the articulation of the boards. The inclusion of timber fins changes the way shadows are cast across the external surface. At night these are illuminated by external lighting.

A secondary entrance to the house is provided through a concealed door that is finished to match the cladding. This opens to a boot/utility room, from which a new shower room can be accessed, before proceeding to the new open plan living space and dining area.

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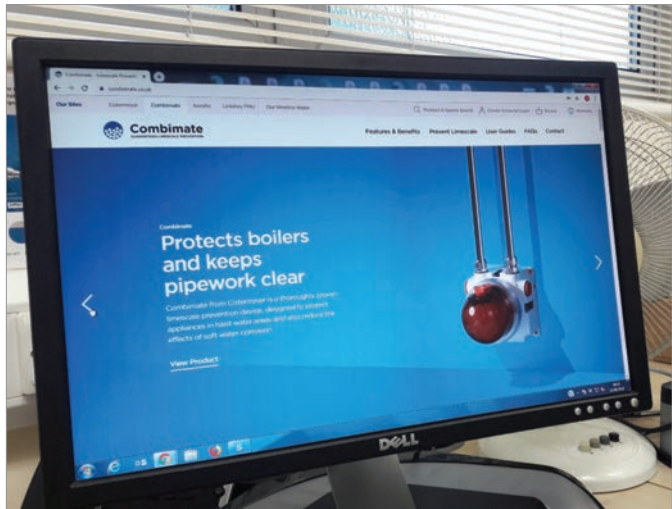
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Cistermiser’s new-look Combimate website

Combimate, Cistermiser’s proven and popular limescale prevention device, is presented on an eye-catching new website which has been designed to appeal to housing specifiers, installers and homeowner customers alike. Available in a choice of models for 15mm or 2mm pipework, Combimate keeps domestic water systems clear of limescale and energy costs down. Combimate is WRAS approved and uses Combiphos spheres to efficiently dose the water, as required. This 100% safe, food-grade natural material stops scale build-up on taps, boilers and appliances. The new website explains the benefits of phosphate dosing in detail, with helpful FAQs and informative User Guides to ensure that consumers get the most out of their Combimate, which is commonly installed to prevent limescale formation in hard water areas but will also reduce the effects of soft water corrosion. Combimate can be fitted to provide limescale protection for whole house water supplies.

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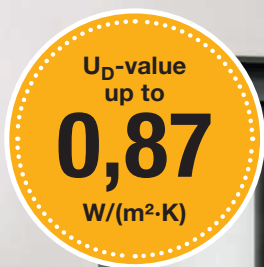


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CHILD'S PLAY

Play experts Foamë offer a 'how-to' guide on taking the right steps towards creating a safe home environment for children which still looks great

While children should always be monitored, their curious nature means that it can seem impossible to protect them from hurting themselves every second of the day. But, by child-proofing your home as much as possible, you can eliminate avoidable hazards which may cause your little ones harm so you can spend time at home with peace of mind your children are out of harm's way.

ROUND EDGES & FIXED FURNISHINGS

While your beautiful cream cushions may look like the perfect springboard for jumping on the sofa or a tempting item to chew or throw, they can also be a hazard to little ones. To prioritise safety in your living space opt for a sofa design with fixed cushions. This way you can avoid any potential danger of suffocating or crushing when younger kids start building forts with cushions or using the sofa as a bouncy castle – plus it's a great way to ensure your living space stays looking neat and tidy.

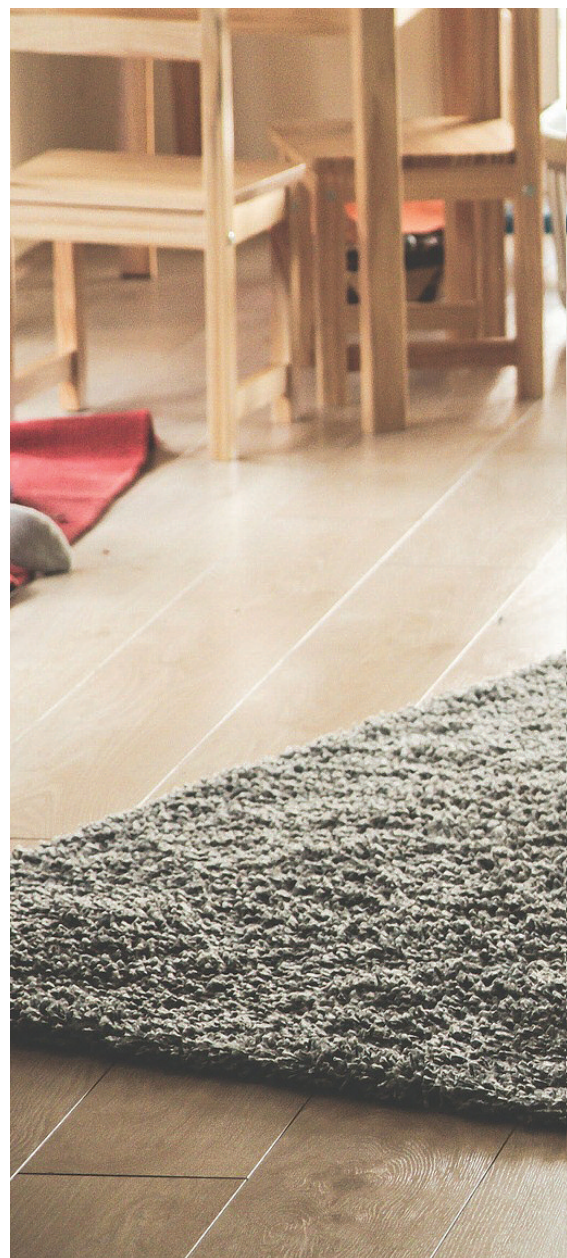
For babies and toddlers learning to walk, table edges are often the ideal height for banging their heads, so it's best to avoid having glass side or coffee tables with sharp edges in areas where your child spends a lot of time exploring.

If moving a side table is unavoidable, consider purchasing corner protectors to cover sharp edges. With a wide choice on the market, it should be easy to find protectors that match the material of your side table to seamlessly blend into the surrounding decor – meaning you can protect children from injury without spoiling the overall aesthetic.

Alternatively, for playrooms opt for fun corner protectors in bright colours that will highlight sharp edges and encourage your child to recognise these as a hazard.

CHOOSE SAFE STORAGE SOLUTIONS

Where children are concerned, the more storage you have the better and savvy storing techniques could work



wonders in reducing the risks in your home, too. For instance, in the living room, opt for a side cabinet with cubby holes to make separating toys, books and stuffed animals easy. This way, you can divide the cubby holes between your children, keeping their individual toys all together or separate living room items such as magazines or TV remotes. To avoid a cluttered look, utilise baskets or boxes that complement your decor and will slide into the cubby holes – providing a place for stowing away items while still delivering a chic finish.

Alternatively, in playrooms combine storage with play by choosing standing baskets that allow your children to remove toys themselves, but be sure to



Consider buying a rug with a non-slip mat underneath

keep toys that may need monitoring during child-play out of reach. If you're feeling a little creative, spruce up old cabinets with colourful paint or attach wooden crates to the wall to create a fun, farmhouse feel.

While it may be your child's dream come true to have stuffed toys scattered all over the home, it's not ideal when it comes to tripping hazards. To combat this, designate a stuffed animal bin in their bedroom – ensuring they're all in one place and aren't taking over the entire house.

SELECT CHILD-FRIENDLY STRUCTURAL SURFACES

Children with sticky hands are often magnetically attracted to walls and freshly cleaned carpets, but there are some

measures you can take to minimise the mucky handprints and free-hand artwork. Semi-gloss paint is great for painting areas where your children spend a lot of time. Be it food, marker pen, chalk or anything else your child may love to spread over the walls, this paint can simply be wiped clean – leaving paintwork looking as good as new.

When it comes to flooring, wooden floors are a popular option for parents. Its non-toxic qualities and easy maintenance make it a perfect choice for those with messy young ones. Alternatively, laminate flooring offers a more budget-friendly solution, while still delivering the same luxurious feel. Like wooden flooring, it's scratch resistant, so won't be damaged by plastic toys.

However, both of these flooring choices can be slippery, particularly if your child wanders around the home in socks or has a habit of running around the house. Falls are one of the most reported injuries for children in the home, so consider purchasing an area rug with a non-slip mat underneath to combat trips and tumbles – with the added benefit of providing a warm and comfortable designated play area.

While you may feel confident that you've done a great job of childproofing your home, with so many considerations to account for it's easy to miss something. However, equipped with these tips, you'll be well on your way to designing a safe haven for little ones to explore and play in, with minimal risk.

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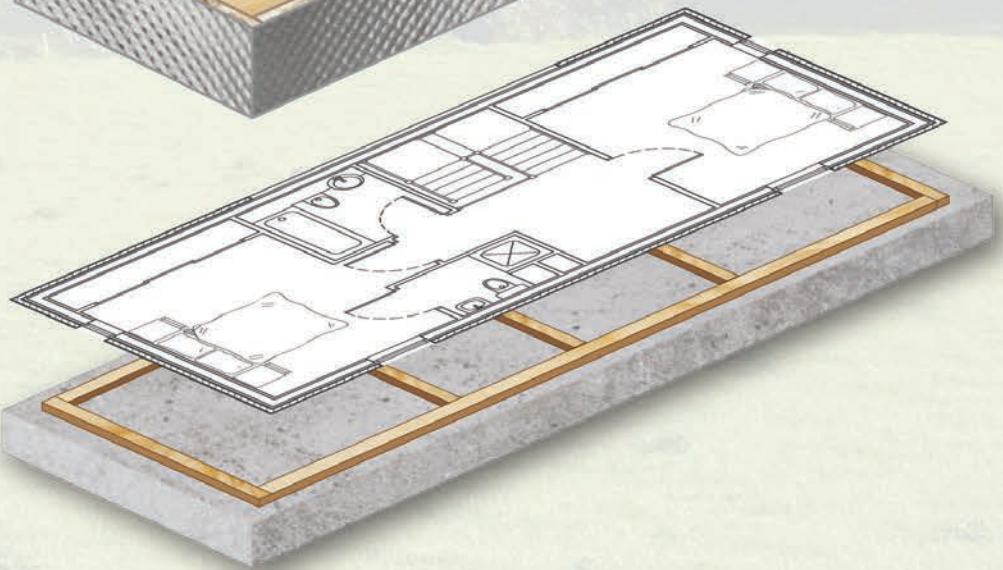
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SPEED OF CONSTRUCTION



Open to debate

Jay Patel of air aluminium looks at the merits of bi-fold doors versus lift and slide options, and which may be better suited to your self-build



Wide-span glazing has become a critical part of any self-build project, with bi-folding and lift and slide doors being the popular choice for homeowners looking for modern, open living spaces that seamlessly connect to the garden. Given the advances in glass and door frame technology, much wider openings can now be achieved to bring in more and more natural light, creating beautiful airy spaces without compromising a home's energy efficiency. But how do you know what's best for your space?

SHOULD I SPEAK TO A PROFESSIONAL FIRST?

My first piece of advice is to speak to a glazing expert when you're in the planning stages. They can often come up with creative ways to introduce more natural light into your home, perhaps with multiple bi-folding doors, cornerless

sliding doors, or by using a system with a super-slim sightline. Often, they'll have ideas that your architect or builder might not, so you can make a real feature of your home's glazing. Make the most of companies who offer this level of service as they will help you make the best decisions for your home.

DO I NEED TO SEE PRODUCTS IN PERSON?

Another essential when you're choosing glazing is to go and see it, whether it's in a showroom, or installed in another property. Door samples and even amazing photography often don't do wide-span door systems justice. Get a feel for the paint finish on frames, a proper look at the sightlines, and see which handles will fit best with your interior design plans before you make a decision.

I DON'T WANT TO SPOIL THE VIEW WITH CURTAINS - HOW CAN I ENSURE PRIVACY AND PREVENT OVERHEATING?

Glazed doors are fantastic for all property types and often homeowners are challenged when they come to thinking about curtains or blinds, to keep out glaring sunlight or nosy neighbours, as they don't want to take away the focus of the view. If that's the case for you, talk to your glazing supplier about screening options. They're great for shading and privacy, as well as keeping out those

insects that are increasingly abundant during summer. There are some stunning discreet options that won't distract from the beauty of your doors.

SHOULD I CHOOSE BI-FOLDING OR SLIDING DOORS?

When it comes to the difference between bi-folding and sliding doors, both have benefits, but the choice really does depend on how you are going to use your space – and that should always be the question you ask yourself with any part of a self-build or large scale renovation.

WHAT ARE THE BENEFITS OF BI-FOLDING DOORS?

Bi-folding doors, that fold away in a concertina style, are a great way to remove any barriers to the outdoors. They give impressive, wide openings and with low threshold options they provide a real opportunity to seamlessly merge your living or kitchen area with the outside decking or patio – perfect for BBQs and garden parties.

Look for bi-fold doors with the slimmest sightlines you can find – with multiple panels, there are more frames across the door when it's closed, so the slimmer the frame, the better the views into your garden. This is one of the many reasons why lots of self-builders are opting for aluminium doors over PVCu.

Another is the overall size of glazing you can fit. Architects often design in taller glazing. This is because they know the advantages of the extra light coming into the property. Aluminium frames offer taller and wider individual panels, which means more glass and less frame.

Achieving low U-values on large expanses of glass is very important. Large expanses of glazing doesn't have to affect the energy efficiency of the property.

Impressive engineering has made it possible to deliver aluminium bi-fold doors with U-values as low as, or sometimes lower than their PVCu counterparts. It's an important point, as glazing doesn't offer the same low U-values as walls. It's worth discussing the direction of the doors to look at whether solar control glass would maintain a more even temperature, even on south facing windows, or whether to look at triple glazing where doors face north.

Check on what weather-testing your bi-folds have gone through, especially if your property is in a coastal area. Look for Teflon-coated seals to prevent any



ASK THE EXPERT

cold spots. air doors, for example, are tested for windloads up to 120 mph, so doors up to 12 metres wide can be super wind-proof.

WHAT ABOUT THE BENEFITS OF SLIDING DOORS?

If you've got a beautiful view from your home and want minimal disruptions, a sliding or lift and slide door could be for you. They have wider glazed areas to drink in plenty of natural light and make a real feature of your garden.

Lift and slide doors use a clever opening mechanism, so that when you open the door, the weight of the door panel is lifted up onto rollers so that they can easily be opened and closed. This means that door panels – that can weigh up to 300 kg – can be moved with just two fingers. Look for really wide panels for maximum impact – the higher and wider the better.

If you have a very wide opening that needs multiple panels, ask your supplier about triple track lift and slide door options – this gives you more flexibility with your opening, as the door panels can move in either direction. Again, low

threshold options merge your living spaces and they're a great option for large glazed extensions to bring as much light as possible into the home.

If you're just starting out in your self-build venture, it's worth thinking about a cornerless lift and slide door. It means you can slide back an entire corner of the room, without any corner post, and enjoy truly panoramic views from the comfort of your home.

Again, aluminium is an excellent choice for sliding or lift and slide doors. They offer slim sightlines, for less frame and more glass, and their strength means you can have larger panels and heavier glass units, with triple glazing options often available for added energy efficiency.

IS THERE ANYTHING ELSE I NEED TO CONSIDER?

Though frames are slim, colour is still important for your wide-span glazed doors. The darker the frame, the less obtrusive they are. Using black or dark greys can almost make the frames 'disappear'.

If you're by the coast, ask about marine-grade paint finishes or dirt-proof



textured options like aircoat.

Take a look at the guarantees you're offered on your doors too – products are usually guaranteed by the manufacturer for 10 years.

If you're looking for an installer, check out the manufacturer's recommended fitters or specialised network of accredited retailers – and check that they're a member of FENSA or Certass for an insurance-backed guarantee on the installation.

Jay Patel is brand ambassador for air aluminium

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INTERIOR INSPIRATION: BATHROOMS

The bathroom has become an increasingly important room to get right when designing the interior of your project, with more of a focus on creating a relaxing haven to escape to, rather than a solely functional space. We round up some on-trend products to suit both modern and traditional styles

1. Achilles Seashell Marble Effect Fish Scale Tiles, available from **Walls and Floors**, are perfect for creating a statement floor or wall. The fish scale shaped design makes them ideal for the bathroom, while the marble effect will add a luxurious touch. The tiles are sized 307 x 307 x 10 mm and are priced at £39.95 per m².

www.wallsandfloors.co.uk

2. The Geminus Roll Top Bath from **The Albion Bath Company** can be finished in any Dulux Trade or Farrow & Ball colour, or one of the company's three metallic finishes (pictured in dark grey). Taps can be either rim mounted through tap holes, wall mounted or atop brass stand pipes. It's manufactured in three sizes and prices start from £1,647.

www.albionbathco.com

3. A recent addition to the Merlyn Black collection, the Squared Showerwalls tap into the current trend for all things industrial. They feature an anodised matt black finish which is more durable than power coating and make a contemporary statement with their striking yet minimalist profile. Prices start from £1,019 per panel.

www.merlynshowering.com

4. The Tolmer Waterfall Mono Basin Mixer Tap from Bathroom Takeaway is made from high quality solid brass. Its ultra-modern waterfall design will give a luxury finish to any basin. The easy-to-use lever handle makes it easy to get the right temperature in an instant. The tap is priced at £37.97.

www.bathroomtakeaway.com

5. Inspired by Italian design, the Callerton range from Easy Bathrooms offers a luxurious selection of contemporary bathroom vanities. They incorporate the appearance of high-end materials including curved gloss wood and a slim porcelain tile worktop. Available as a freestanding or wall-hung unit, a variety of sizes and finishes are on offer. Prices start from £396.

www.easybathrooms.com

6. The Dawn Freestanding Bath and Countertop Basin are inspired by Mediterranean rustic charm, with a simple finish that balances perfectly with wood furniture. Available from **Waters Baths of Ashbourne**, they're made from a silken quartz composite, allowing any marks to be easily buffed out. The bath is priced at £2,395 and the basin at £365.

www.watersbaths.co.uk



SO QUIET

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New 52-page Nuance brochure from Bushboard

Anyone looking for beautiful bathroom ideas will find a wealth of inspiration in the new 52-page Nuance brochure from **Bushboard**. The beautiful-bathroom-surfaces book showcases the new Designer and Acrylic bathroom wall surfaces in both striking room sets and swatch layouts.

Nuance is an award winning and patented waterproof bathroom wall panelling system that can swiftly transform the dingiest bathroom and at the same time offer huge savings in money and time. Ceramic tiling a 7ft x 7ft small bathroom can take one to three days and a large 13ft x 7ft room rises to three to six days.

Add the cost of the tiles, and the noise and disruption involved, a striking 100 per cent waterproof wall surface like Nuance becomes a natural choice. Installing Nuance in the same 7ft x 7ft bathroom or wet room space can be completed in just four hours. It can be installed over existing tiles for even more speed and cost-saving.

To order samples or request a brochure please contact Bushboard.

www.bushboard.co.uk



VitrA expands bathroom products collection with Origin

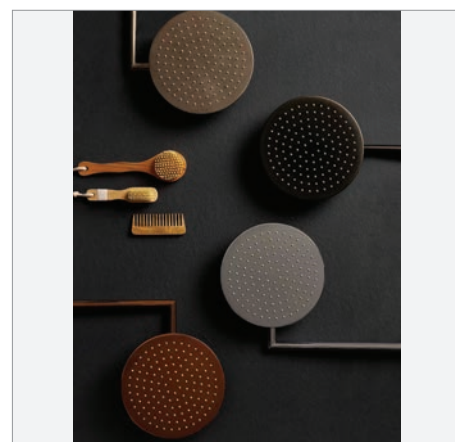
VitrA, one of Europe's leading bathroom companies, has expanded its collections of bathroom products with the addition of Origin brassware and accessories.

Subtle elegant design is the key theme of the outstanding new Origin brassware and accessories range from VitrA. Origin presents designers and consumers with a complete and versatile collection that is the perfect partner for contemporary sanitaryware and furniture.

There are over 150 pieces in the collection including monoblock taps in four heights, wall and deck mounted mixers, and both concealed and exposed thermostatic and manual showers with a choice of handheld or fixed overhead showers. Taps and showers are complemented by a comprehensive range of accessories. All pieces are available in chrome, brushed nickel, copper and matt black finishes.

Showerheads from the Origin collection showing all finishes (top to bottom): brushed nickel, matt black, chrome, copper. Prices start from £160 for a chrome showerhead.

www.VitrA.co.uk



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Fast and fabulous

The Jaffreys wanted a home that would look good, be energy efficient, was future-proofed and importantly, could be built quickly, and a timber kit was the answer

When the Jaffrey family set about building their own home near the village of Insch, Aberdeenshire, there were a few items on their wish list. They wanted a home that would look modern and beautiful, take advantage of the views out over the surrounding countryside, would be future-proof by being flexible enough to meet their needs as a family for years to come, would be as eco-friendly and energy efficient as possible, and which could be built quickly.

They appointed local architecture firm Annie Kenyon Architects, who regularly design homes in the area, and builders Cairnrowan Custom Homes, who suggested using a timber kit as the basis for their build. "When our builder explained how well insulated timber frame is, we decided that was definitely the route we wanted to go down," explains owner Iain.

Before work could begin onsite, considerable clearance work had to be undertaken. The house has been built on

sloping ground on the site of an old quarry, and could only be accessed from one side. The house's height – six metres – also meant major scaffolding was required. Luckily, these factors didn't impact hugely on the build's timescale.

The Jaffreys' desire for a high-quality, energy-efficient, green home that could be built quickly meant timber frame was the right choice. They settled on using a Val-U-Therm Plus closed panel system from Scotframe for the roof and walls, choosing 140 mm wall panels as they offered the best solution for thermal performance and cost effectiveness without having any detrimental effect on the size of the overall footprint.

The house was built efficiently and very quickly – it was wind and watertight within just six days and complete in just 14 weeks. "We were blown away by how quickly we were able to get into our new home," Iain says. The pre-manufactured roof and wall cassettes helped with the speed of build, thus allowing quicker access for follow-on trades. An open panel timber frame house being built by the same labour force would have taken around 20 weeks, and a brick and block house significantly longer. In addition, the costs of fitting the insulation onsite would have been thousands of pounds extra.



Aside from the build method and materials used, the efficiency and close working relationship of the team – who were all based locally and had worked together before – contributed to the project's efficiency. Scotframe and Cairnrowan have worked together many times in the past and have designed their own bespoke kit, which helped ensure the build was quick and smooth.

Cairnrowan also project managed the entire build, which took a weight off the Jaffreys' shoulders – they were kept updated on progress throughout with regular meetings. Cairnrowan took care of everything from preparing the groundwork and erecting the timber kit to organising the electrics and smart home technology. They also managed the internal decoration and landscaping, which helped make the project as seamless and stress-free for the family as possible.

"The game changer for us was that we had so much trust in the whole team," says Iain. "It's said that building your own house is one of the most stressful things you can do, but this honestly was relatively stress free and actually quite enjoyable!" He adds: "We'd come and visit the site once or twice a week to see how things were going, but otherwise they just got on with it."

DESIGN

The family saw this as their "forever home", so wanted an open plan space downstairs that their small children could enjoy running about in, and that they would get the benefit of for years to come. "That's why we decided to have the smart technology installed," Iain says. The house is pre-wired for nine zones of audio and six zones of HD/4K video, as well as 12 zones of heating and 16 zones of lighting.

The 305 m² detached house has two reception rooms, four bedrooms, four bathrooms, and a cinema/bar room. Ample glazing takes advantage of spectacular views to the nearby hills of Dunnydeer and Bennachie. The 2.7 metre high ceilings and six metre double height areas give a feeling of space throughout.

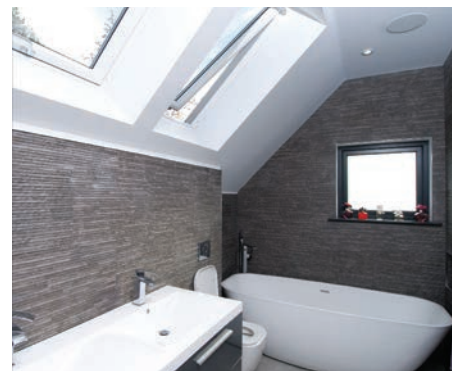
The open plan ground floor area has floor-to-ceiling windows which open out onto an expansive decking area. One of the home's most striking features is the galleried entrance hall, home to a contemporary, well-figured oak tread and glass balustrade staircase. The timber frame is covered with a mixture of timber cladding and white render, plus a glazed gable. The roof is finished with slate and,



to contrast against the white render, dark grey Nordan window frames were used.

In order to meet their desires of being as eco-friendly as possible, the family installed solar panels, a Daikin air source heat pump, and underfloor heating. "From a green point of view, the house ticks all the boxes. Although it's a much bigger house than we had before, we are paying significantly less for fuel bills, even though our previous house was also timber frame and well-insulated," says Iain. "We chose the air source heat pump because it is clean and low maintenance, and along with the solar panels, it has been working well for us."

As well as these features, the closed panel system and accuracy of the build has also contributed to the home's efficiency, says Iain. It has been given an 'A' rating for energy, an as-built EPC of 97 per cent and an airtightness result of 0.38 air changes per hour, taking it to Passivhaus levels in terms of energy efficiency.



"We were blown away by how quickly we were able to get into our new home"

The likely energy usage is 28 kWh/m²/year, achieving Gold Aspect level 2 for energy use for space heating from the Scottish Building Regulations – the highest possible level. The calculated emissions are 5 kg CO₂/m²/year – over 4.6 times less CO₂ per year than the average Scottish household. "The quality of the house is amazing," says Iain. "Although we've been in for less than a year, it feels like we've been here for longer – that's how we know we have made the right decision."



CASE STUDY

BUILDING GOOD HEALTH

Built on a wooded rural site on the coast near Bristol, a stunning family home has been created that was prefabricated in Germany using natural materials, and designed with health and wellbeing in mind

TEXT DEBBIE JEFFERY IMAGES BAUFRTZ





ABOVE & FACING PAGE

Landscape gardener Hannah Genders confirmed that mature trees and shrubs would form a strong framework for the project's new landscaping

ABOVE

The terrace gives fabulous views over the Severn Estuary

LOW POINT

"Decision overload: there was just so much to think about in a short space of time."

— David Jones

Those who have holidayed in the south west of England will recall the feeling of excitement as they pass Bristol and glimpse the sea for the first time, after hours of motorway monotony. It's here that you find the home of David and Lin Jones: visible only from the sea, and standing in extensive landscaped gardens.

Their colourful new three-storey house has been built on a long sloping site, giving unobstructed views over the Severn Estuary, and appears to 'grow out' of its surroundings. First time self-builders David and Lin live with their teenage daughter, and a steady stream of guests in the impressive property.

"We'd spent several years two miles down the road, in a house we'd renovated," says David. "We had often thought about moving somewhere more rural, and looked at several properties, but nothing gave us exactly what we wanted."

The couple knew of one location which would suit them perfectly. "We didn't want to move away from the area and, although we wanted a country home, we also love sea views," David continues. "When a house came up for sale nearby in a wooded valley, looking out to sea, we moved fast, and within eight weeks we were the new owners. We'd never done anything so impetuous!"

David and Lin briefly considered living in the existing house, but the six-and-a-half acres of

grounds had become neglected and overgrown and the building had fallen into disrepair. They determined to design a new house which would complement the natural surroundings and make the most of the sea view.

Landscape gardener Hannah Genders was consulted early in the process and confirmed that, beneath the undergrowth, mature trees and shrubs would form a strong framework for the new landscaping which was to be such a vital part of the overall project. "It was Hannah who first suggested Baufritz to us, as she'd worked with the company previously on gardens for their new homes," explains David.

As one of Germany's first companies to produce off-site manufactured timber houses, Baufritz combines advanced modular construction, sustainable materials, and renewable sources of energy to create tailor-made eco-friendly homes. The company's unique building system ensures that all materials are natural, healthy and not harmful to the environment – right down to the water-based paints used.

"The principles of healthy, ecologically-friendly, building construction have formed the core philosophy of our company for generations," comments Oliver Rehm, who is MD for Baufritz UK.

Over the years, buildings have been constructed to increase thermal efficiency through improved air tightness. As a result,

there's been a marked increase in people suffering from 'Sick Building Syndrome', which is caused by a number of factors relating to interior air quality. This includes the use of chemical contaminants found in building materials such as treated timber, lacquers, adhesives, polystyrene and mineral wool.

"In all our designs, and during the manufacturing and build processes, we're guided by the health needs of people and the protection of the environment. We call it organic living, and years of research have gone into making sure that each Baufritz home provides a healthy environment," says Rehm.

"All the healthy elements of Baufritz houses have been jointly developed with doctors and building biologists to enhance wellbeing." He

adds: "Harmful substances are eliminated at every stage."

David and Lin spent time exploring alternative options before returning to the idea of building a Baufritz eco house. "We looked at different build methods and designers, but the system build route was appealing because the timescale and budget would be better determined," explains David.

"We went out to visit Baufritz in Germany for a tour of the factory and show homes before making our final decision, and were impressed by the quality of build. If you're building from scratch then the sheer number of decisions can be bewildering, so we were pleased to learn we'd be helped to make choices from their menu of options."



RIGHT & FACING PAGE

The bespoke kitchen was crafted in Cornwall and the island features hand-carved walnut drawers and a granite work surface

BELOW RIGHT

The kitchen table has been set before a four-metre high feature window overlooking woodland



HIGH POINT

"The incredibly fast three-day assembly of the shell of the house, which we captured as a short time-lapse film."

– David Jones

DAVID'S ADVICE

"Think ahead. Employing a lighting designer early on was one of our best decisions."



Baufritz offers a turnkey service that covers all aspects of the housebuilding process except for groundworks – therefore it includes architectural design, planning, manufacture and onsite construction, carried out by experienced teams of specialist German tradesmen.

Oliver Rehm worked with the couple on the design of their new house, and the sloping nature of the site proved ideal for accommodating an extensive basement level. This contains a games room, plant room, pantry and boot room, as well as providing the perfect environment for the wine cellar.

Part of the Jones' motivation to build was to create a home which they could share with others, and a one-bedroom basement flat was therefore incorporated into the design which may be used independently of the main house.

On the ground floor, the family room/kitchen, sitting and dining rooms all open onto a balcony and are seaward facing. The utility, snug, shower and cloakroom are located to the rear of the plan, and upstairs are four bedrooms, a study, bathroom and master ensuite.

"It was an interesting process working out the look and layout of the new house, and although the location and roofline remain the same as the old building on the site, the overall floor area was increased," explains David.

The couple had lived in Connecticut for several years, where timber-clad homes are commonplace, and were influenced by New England architecture as well as colourful Scandinavian houses seen on holidays. Inspiration also came from books and magazines, as well as several Baufriz houses they visited both in Germany and the UK.

"I really liked the Falun red colour of cladding I'd seen in Norway, which was originally made using waste products from a copper mine," says David. A similar red colour was therefore chosen for the timber cladding on the family's new home, together with ivory white render and a basement level clad with golden limestone, which visually anchors the building into the ground.

"It's a contemporary interpretation of a New England style home and the planning process



was really straightforward, although it did take 16 weeks instead of the usual eight to receive the decision," says David.

"We liaised very early on with tree and ecology officers at the council, to assure them we valued and wanted to enhance the setting, so we had no real issues despite living in the greenbelt. The only change they requested was to reduce the height of the garage roof by a metre, which was an improvement anyway."

The house and basement were designed together, but when it came to the construction the Jones needed to organise their groundworks separately, using a company recommended by Baufritz. They employed a project manager to oversee the groundworks, concrete basement and slab, before the Baufritz project manager took over for the remainder of the build.

"I was no longer working full-time, so probably got more involved than I strictly needed to, as we were only living 10 minutes away," says David. "We were very fortunate not to need to live in a caravan and were able to stay in our home during the build."

The existing house was demolished, and the site cleared before the new basement could be excavated and prefabricated concrete walls installed. "One corner of the basement needed to be dug a metre deeper than planned, until they hit a firm base, before being built back up again with concrete," says David. "Inevitably, when they then tried to install a drain, they immediately hit solid rock."

The upper two levels of the building were constructed using offsite prefabricated closed wall and roof panels, built in a factory in Germany using low-carbon construction processes, sustainable timber and other biodegradable building materials. Timber windows and doors are pre-finished in a light grey paint, and the saddle roof has been clad with handsome interlocking grey clay roof tiles.

Each section of the house was made with the insulation, cladding, external doors and triple-glazed windows already in place, to ensure excellent airtightness, so that when they arrived onsite the panels could be constructed extremely quickly.

VIEWS

Sliding glass doors in the sitting room open onto a balcony and give views across the steep, secluded valley to the sea

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"In Germany, people come and sign a contract and the building work goes ahead very quickly. In England it takes far longer to find a plot and gain planning permission. It can be very complicated and frustrating for everyone, but after planning has been achieved, we can go ahead and specify all the materials," explains Baufritz's Oliver Rehm.

"Much of our factory is automated, using machines that have been designed especially for us, and we use state-of-the-art CAD technology that's linked to our systems to ensure millimetre precision.

"It's great to see the product that you've designed being made so accurately by machines, and you don't have to worry about the execution on site, because everything is so precise. I always feel elated when a house arrives from Germany on the back of a truck and is finished within just a few days – it's a very exciting process."

External walls are packed with Baufritz's thermally efficient wood shaving insulation, made from off-cuts from the manufacturing process and protected from fire, fungus and pests using a natural treatment made from soda and whey. The shell is 100 per cent biodegradable and can be completely returned to nature.

"We did manage to block the road for several hours because our driveway is long and steep, so access was tricky, but everything was soon craned into position," says David. "It only took four days to erect the walls and roof of the house, and I built a small scaffold tower and filmed the whole thing using a time-lapse

camera – making a short film of our build."

The Jones' were flown out to Germany prior to work starting onsite, where they liaised with their Baufritz project manager to choose all fixtures and fittings, including sanitaryware, tiles, flooring and light switches, leaving only the kitchen to be sourced separately. "It was enjoyable but tiring, because we'd be working well into the evenings," says David.

Not only is the house incredibly highly insulated and triple glazed, but it also benefits from a ventilation and heat recovery system. Built-in protection against electromagnetic pollution levels shields against cell phone radiation, and harmful substances are eliminated at every stage.

"The previous house had oil-fired heating, but after much thought we settled on installing a ground source heat pump, with underfloor heating on all levels," says David. "We chose engineered walnut flooring for several rooms, with herringbone parquet laid in the sitting room, and followed this through with walnut for the internal doors and kitchen."

The main kitchen was crafted in the UK from sustainable birch plywood, combined with locally-sourced sycamore and walnut wood to create the cabinetry and hand-carved drawers. Low energy appliances were chosen, including an eco-friendly boiling water tap.

"What we love about this house, apart from the fabulous setting, is the feeling of quality," says David. "Everyone comments that it's a peaceful, calm and relaxing place to be, and it's also a healthy home – both for us and the environment." ■

VAULTED

A high, vaulted ceiling coupled with the views makes the home's master bedroom a tranquil and airy retreat

CONTACTS/ SUPPLIERS

DESIGN & BUILD, WALLS, WINDOWS, INSULATION, ROOF TILES, SANITARYWARE (ETC)

Baufritz
www.baufritz.co.uk

GROUNDWORKS

Eclipse Construction
www.eclipseconstructionltd.co.uk

BASEMENT

Glatthaar Fertiggeller
www.glatthaar.co.uk

BESPOKE KITCHEN

George Robinson
www.georgerobinsonkitchen.co.uk

GARDEN DESIGN

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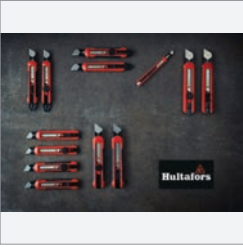
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Hultafors NEW range of 'snap-off' knives



Hultafors Tools has launched a new range of 'Snap-Off' Knives for professional craftsmen and women. With 13 different knives and four long-lasting precision blades, these all-round, ergonomic knives are designed and built to suit a wide range of jobs on site. From industrial and warehouse applications to specialist work on site – from like cutting boxes open and shaping plasterboard, to trimming flooring and paring cables. Symmetrically designed so that the blades can turned over, they're adaptable for both left and right hand use so that left handed craftsmen and women can adapt the knife rather than their own usage. What's more, the blades are available in three widths of 9, 18, and 25mm.

www.hultafors.co.uk

The ultimate choices in work trousers



September sees the next generation of Work Trousers choices from Snickers Workwear. There's the Flexiwork 2.0 trousers, designed for craftsmen who want nothing but the best. These high-spec trousers are made of durable four-way stretch fabric. Then there's the 'loose-fit' AllroundWork stretch trousers with a classic Snickers Workwear look and feel plus the new FlexiWork Denim Work Trousers where Workwear meets Streetwear in these slim-fitting work trousers. Also take a look at the new regular-fit RUFFWork Canvas+ heavy duty trousers. But the ladies will definitely have a close eye on the ALLroundWork womens stretch trousers, specially designed and shaped to fit the female anatomy.

info@snickersworkwear.co.uk

NEW from Solid Gear – Onyx safety shoes



Combining maximum comfort and protection with a robust and durable design, Solid Gear's Onyx is available as a shoe or a boot and ideal for different types of on-site work. This EN-accredited footwear has a modern-looking style that integrates a seamless upper and Cordura reinforcements with a poured polyurethane midsole, a breathable footbed and strong rubber outsole for maximum grip on slippery and uneven surfaces. Metal-free protection comes from the fiberglass toecap and penetration board for extra personal safety. The unique BOA Closure System distributes the pressure of the fastened shoe evenly across your feet to ensure a glove-like fit all day for maximum comfortable protection.

www.solidgearfootwear.com

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What's in store?



Grand Designs Live returns to Birmingham in October, providing a 'one-stop shop' for anyone looking for inspiration for their self-build, renovation or interior project

Whether you're starting out on your first home renovation, building a new home, adding the finishing touches, simply looking for inspiration or are just a fan of the TV series, Grand Designs Live, sponsored by Anglian Home Improvements, is a must-visit event. Presented by design guru Kevin McCloud, the event offers top expert advice, innovative products and eco solutions for your home. You can meet over 400 companies across four project zones, and get access to hundreds of free talks and live demonstrations.

Grand Designs Live returns to Birmingham's NEC from 9-13 October, bringing the height of home renovation and design innovation to the midlands.

The show is split into four project zones – Build, Gardens, Interiors, and Kitchens & Bathrooms – to cater for your every need. The Grand Build Hall is packed to the brim with amazing products to help your project run without a hitch. With a huge selection of self-build suppliers all under one roof, you'll find the latest developments in sustainability and eco-technology as well as free expert advice.

Grand Gardens, sponsored by Hydropool, is full of contemporary garden products, from hot tubs and swim spas to barbecues and outdoor furniture, to make your garden an active part of your home.

The Interiors Hall is packed with beautiful products from individual designers and hundreds of items that are not readily available on the high street.

Grand Kitchens & Bathrooms offers cutting-edge appliances, well known brands, expert advice, and some of the sleekest designs for your home. From fitted to free standing, and clean whites to striking colours, you will find an array of design and storage solutions to help get the most out of your space.

The show is also launching the Home Renovation Clinic, giving visitors the opportunity to speak to expert members



of the Federation of Master Builders about their upcoming home projects. Located within the popular Ask an Expert area, this unique element offers visitors the opportunity to ask quick questions and discuss project plans, without having to make a one-to-one appointment. Visitors can learn about the processes and preparations required for renovation, extension and refurbishment success and see that with the right advice and careful forward planning, it is perfectly possible to stick to a budget, and realise a dream home.

After its success at the London show in May, the Under The Stairs feature will see six new interior designers showcase bespoke installations, using a commonly neglected area in the home – the space under the stairs. The feature will give visitors the opportunity to browse and pick up inspirations for their own mini grand designs.





WHEN & WHERE

Grand Designs Live takes place at the **NEC, Birmingham** from **9 - 13 October**. For more information and to book tickets visit www.granddesignslive.com

TV series *Grand Designs* turns 20 in 2019, and the show will be celebrating with fun and exciting features focused around *Grand Designs* houses past and present and their owners, who will be speaking on the stage about their project experiences.

Established favourites such as Kevin's Green Heroes will showcase ground-breaking and eco-friendly products on the market, and a host of inspiring and informative seminars will take place at The Grand Theatre, sponsored by Go Ultra Low. The live talks will offer visitors

the opportunity to consult and hear from specialists across a range of home-improvement areas – from finance, to architecture, design and much more!

The show offers an exciting day out with hundreds of innovative ideas for the home, instructive talks, educational seminars and demonstrations. Get access to amazing brands launching new products, compare prices and check out homewares not yet available on the high street. It's a great day out for anyone, whether you're in the middle of a home project or are an aspiring designer.



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The **Kingspan TEK** Building System has been used to construct five luxury villas at the Porth Veor Manor Hotel near Newquay – providing the perfect seaside spot for holiday makers. The Kingspan TEK Building System of structural insulated panels (SIPs) was specified for the project for a variety of reasons, as Mike Burke from contractors Sip Hus, explained: "The design of the units, their location, size and performance requirements meant that the Kingspan TEK Building System was the best choice for the units

structural shells. The excellent thermal performance of the panels allowed us to maximise the internal spaces within the given footprint without having to compromise on thermal efficiency."

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between two layers of OSB/3, was selected as it allowed a high level of design flexibility and exceptional out-of-the-box fabric performance, as well as creating minimal site waste as kits are designed and cut off-site.

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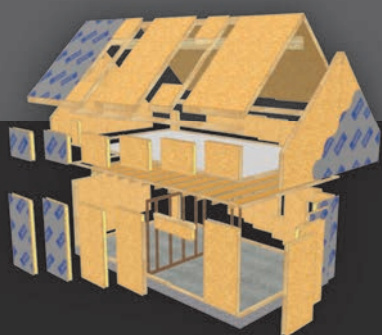
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SIPs vs traditional construction

Ian Clay of SIPs@Clays offers a few points to consider when choosing the build method for your new home and why SIPs deliver the perfect solution compared with traditional brick and block construction

With so many decisions to be made when building your home, the build method and construction material you choose ultimately shapes the outcome both for the short and long-term.

As well as looking at the obvious elements of aesthetics, construction costs and energy efficiency, equal consideration should be given to design flexibility, speed of build and space efficiency. So, when you're choosing a construction method to deliver all of the above, then you should look no further than structural insulated panels (SIPs).

ENERGY EFFICIENCY

If you're building an energy efficient, sustainable home requiring low U-values and superior airtight qualities or building to Passivhaus standards, then the inherent qualities of SIPs must be considered.

Each panel consists of two sheets of oriented strand board (OSB), sandwiched around a rigid insulation core. The panels provide 'built-in' insulation to create a home that will provide low energy running costs for the lifetime of the property.

When compared to brick and block construction, which requires insulation to be fitted between cavities during the build process and needs more complex and costly solutions to achieve similar U-values to that of a SIPs build, the benefits of SIPs far outweigh traditional construction.

Just like brick and block, extra insulation can be added to a SIPs build to improve thermal performance but to much greater effect. For example, the Kingspan TEK Building System which is supplied in 142 mm and 172 mm panels gives superior U-values of 0.19 W/m².K and 0.16 W/m².K respectively. When additional internal insulation is added to either, the improved U-values



far exceed what can be achieved with traditional construction for similar wall thicknesses.

While it is possible to increase the overall thermal performance of brick and block, by adding extra insulation, the negative effects of thermal bridging and resultant heat loss in traditional builds cannot be ignored.

The thermal conductivity of timber products is far lower than brick or block and SIPs in particular significantly reduce the effects of thermal bridging by creating an energy efficient airtight envelope. This results in superior airtight values, reduced heat loss and outstanding energy efficiency with minimal heating requirements.

SPEED OF BUILD

Time is money and the build programme of your project is critical. Traditional construction is subject to a variety of

external factors such as availability of trades and materials, knock on delays and of course, bad weather. Projects can become seriously delayed by prolonged spells of rain, snow and freezing temperatures with interruptions to the programme, creating a ripple effect that wastes time and eats into your budget.

Building with SIPs is not subject to fine weather, the availability of skilled wet trades or any other onsite delay. In fact, as the panels are precision engineered offsite and delivered to site ready for immediate erection (which typically takes between two and three weeks, depending on size and complexity of the build) an accurate programme can be created, ensuring both timescale and budget is adhered to.

DESIGN CAPABILITIES

There is a common misconception that SIPs structures have to be boxy and



boring; in fact it's quite the opposite. The flexibility in design and ease of construction means there are no limitations to what can be achieved and design complexity is no barrier to building your new home with SIPs.

One of the many design benefits of using SIPs, and in particular the Kingspan TEK Building System, is that the system will always provide a larger floor area comparatively, than can be achieved when using traditional build methods due to the thinner construction components.

This is particularly evident within the roof space where unlike brick and block builds that require roof trusses, SIPs homes rarely require trussing. This obvious benefit maximises living space by providing an additional room in the roof which subsequently adds value to the completed build.

The flexibility and simplicity of SIPs allows for practical amends to architects drawings prior to fabrication and a credible SIPs designer can 'design in or out' elements of the plans to enhance your project.

Our in-house design team, for example, uses a 3D CAD system to create geometrically complex structures and we provide interactive imagery that allows customers to see exactly what their new home will look like from every angle.

When compared to traditional

construction where design amends can be costly, time consuming and will inevitably delay the build process if inaccuracies or design errors are identified, the superiority of SIPs really shines through.

SMALL, CHALLENGING PLOTS

For every housebuilding project, the plot will dictate what can be built. It defines size, shape and layout of a dwelling, its orientation, and it can even influence the most suitable method of construction to be used.

Traditional methods of construction may immediately exclude many smaller and difficult to access plots deeming them unsuitable for building, and if you think you've found your ideal site this can be disappointing news to bear.

Every millimetre of space counts on a small site so construction, storage and waste areas need to be utilised effectively to allow maximum dwelling space and efficiency onsite. The offsite engineering of SIPs means the superstructure of the building is prefabricated in a factory environment then delivered to site ready for immediate erection.

This not only speeds up the build process but reduces the amount of onsite labour and materials required, it minimises waste and importantly means there are far fewer site deliveries when

compared to traditional builds. This is especially beneficial if access to your plot is restricted or you're building in a conservation area, for instance.

COST

There are many factors to consider when comparing traditional construction with SIPs and while on the face of it traditional materials may appear to be more cost effective than the market leading structural insulated panels; overall project costs cannot be accurately compared like for like.

Shorter build programme, fewer labour requirements and reduced equipment costs of a SIPs project will significantly influence the bottom line. It is also important to compare the life time costs and the energy saving benefits of building your new home with SIPs. There are many factors that affect a direct cost comparison and a holistic and pragmatic approach should be taken.

SIPs provide so many benefits – flexibility of design, speed of build, energy efficiency and versatility, all of which are critical factors for today's self-builders and when compared to traditional methods of construction, offer an ideal solution to building your perfect home.

Ian Clay is a partner at SIPs@Clays

Selfbuilder & Homemaker website

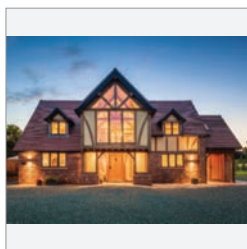


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CASE STUDY

A SUSTAINED EFFORT

The end result of Sarah and Andy Ball's somewhat gruelling self-build saga is a sleek, modern 'forever' home in Derby, with wide-open views of landscape plus space, comfort and sustainability

TEXT JAMES PARKER

Over the past couple of years we have tracked the progress of the Balls' contemporary Derby self-build in *Selfbuilder + Homemaker*, and it has been a rollercoaster to say the least. Being let down by not one but two builders, they ended up spending four Christmases living onsite before they even got to start their forever home, a real test of character.

The story starts back in 2013, when Sarah and Andy moved into the house they were to demolish on the 13 metre x 30 metre plot, which backs onto a hilly park in the suburb of Allestree. They lost their original builder when the firm ran into trouble, and in early 2017 with their design approved and ready to go, they found out there would be a 40-week delay due to other jobs. When they finally demolished in January 2018 and moved into a bungalow, the 'Beast from the East' meant they didn't actually get to start building until April. It's testimony to the couple's fortitude that they didn't lose heart completely.

Their experience working in the construction industry (marketing in Sarah's case, commercial roofing in Andy's), and doing previous refurbishments meant they knew how things can go awry. While a new build was the goal, they pragmatically began to look at the options, such as refurbishing, or project managing a new build themselves.

Sarah and Andy's only fixed goal was creating the right kind of space for them and visiting family and friends, as well as strong energy-efficiency credentials, but they also wanted a very contemporary look. The design, done by architect Daniel Evans from Matthew Montague Architects was for a "crisp white box," in Sarah's words – flat-roofed like the smaller L-shaped building it replaced, but with a far better use of its site. Sarah says there haven't been any issues with neighbours complaining: "They've been lovely, nobody's really batted an eyelid."

The site was ideal – the old village and shops being nearby, but not being subject to the strict planning rules there which would make a modernist flat-roofed house tricky. Sarah says: "There's a variety of styles here, from Victorian to a dutch barn, to chalet-style, and a large white-rendered house which we've given a nod to."



Sarah and Andy's only fixed goal was creating the right kind of space for them and visiting family and friends, as well as strong energy-efficiency credentials

Andy and Sarah have a big family – Andy has five brothers. "We wanted a house where we could throw a party – if we do, there's often more than 30 people". They wanted an entertaining space that could accommodate such a gathering, rather than being split across different rooms.

The house is of brick and block construction. It has very thick external walls, packed with insulation, and Andy took a painstaking approach to filling all gaps with extra expanding

LOW POINT

"In the original plan, there was a glass roof above the guest ensuite. We just couldn't make it work, so we had to rethink it. Any redesign costs a fortune – it's galling that it cost so much extra money for removing a design feature."

– Sarah Ball



foam post-construction to ensure thermal efficiency was maximised. The only downside to the foil backed insulation in the walls is that their Wi-Fi is not great!

INTERIORS

Walking into this clean-lined, spacious house now, a few weeks after completion, the tranquil white-painted interiors belie the fact it has been a labour of love. Through the centrally placed, oversized front door is a hallway which leads your gaze straight through to the rear garden off the kitchen/dining/living space. Sarah and Andy's meticulous approach is visible in the precisely aligned ceiling LEDs in the hallway and beyond: "Every single light lines up."

To the left is what will be an office, but currently just houses an upright piano, donated by Sarah's mum, who was to have a bedroom here with her dad before their plans changed and they moved nearer to the Balls. There's a thin but full height curtain wall-style window to the front providing ample light but also privacy, plus acoustic and thermal benefits, being triple-glazed. Window frames are painted black so that they're less visible from a distance.

In the hallway there's a very large plant cupboard – almost a room – containing a 300 litre water tank, manifold for the downstairs underfloor heating, and the air handling units for the Mechanical Ventilation with Heat



Recovery (MVHR) system. This surprisingly spacious provision for services delights engineers, Sarah says.

The kitchen/dining/living area to the rear takes up the full width of the house, the back wall being a sliding eight metre-wide set of three oversized glazed doors. The design nominally breaks down this large space following the lines of the glass panels, dividing the area into a third each for the kitchen, the central dining area, and the lounge/living area – each being very generous spaces in themselves.

Despite their size, the glass panels open relatively easily thanks to the AluK system used, which is the first installed triple-track variant by the manufacturer AluFoldDirect. Its thin frames maximise the view of the garden, still to be landscaped but already benefitting from a wall separating it from the park visually and acoustically. Solar control glass avoids overheating – essential as an alternative to brise soleil as the living space is south facing – and space has been left for blinds to be installed later.

The kitchen is divided from the dining/lounge area by a huge white Corian-topped island, which is Sarah's pride and joy in this space. The top and sides are jointed, but appear as one solid piece of material thanks to meticulous finishing by the supplier; the island also houses a drinks cabinet.

Sandwiched between the wall to the downstairs WC (which features Roman-style geometric black and white tiles), and the wall to the kitchen behind, is the simple enclosed staircase. Being somewhat hidden when you enter the house, it has the effect of revealing another glimpse of green from the cantilevered bay window on the landing above, which overlooks trees. It's "like a tree house," says Sarah, and brings extra light into what could have been a slightly murky space. She adds that this was "part of the original plan," and one they stuck to. Further improving light to the first floor corridor are a couple of rooflights, which were easy to include thanks to having a flat roof above.

The stair is a standard solution, necessitated by the fact the builder put a steel here which couldn't be easily moved, but it was a highly cost-effective result, coming in at only £340. It's one key example of how the couple made big savings on some aspects that helped them spend money elsewhere.

There are three large bedrooms, all with ensembles. One for their grandsons over the office, with the same tall window, plus a side window overlooking the trees, where squirrels playing often provide great entertainment. The guest bedroom sits above the garage, with a large window which continues into the ensuite, but is frosted for privacy. This is also the case in

HIGH POINT

"The glass coming in, it was a nice sunny day, although it was hard work. We had a lot of goodwill from everybody, Paul from CPS Lifts with the robot machine came for the whole day and didn't charge us for it."

– Andy Ball

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I have spent the last 28 years perfecting the process of turning this type of potential liability into an asset, by seeking out the very best materials and designs to eliminate and reduce the risk of owning a flat roof.

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“Almost nothing in this house has been bought at retail price,” says Sarah, “we’ve basically bought on sale or gone to the manufacturer”

the family bathroom which sits behind this room, off the corridor, and faces the neighbours.

The guest ensuite was to have a glass roof too, sitting at right angles to the striking curtain walling, however as Sarah says, they decided to shelve this design as it was impossible to achieve. “We just couldn’t make it work, so we had to rethink it. Any redesign costs a fortune – it’s galling that it cost so much extra money for removing a design feature, especially as we have ended up with a standard ceiling.”

However there were no compromises when it came to the master bedroom, which has a great view over the park thanks to the sliding

glass doors. The wall behind the bed separates the room from a walk-in wardrobe (a room in itself), and off this is the ‘big reveal’, a very impressive mosaic-tiled bathroom, featuring a free-standing bath in pride of place, centrally located on a protruding wall flanked by two windows.

“We compromised on all the other bathrooms to get this one perfect,” says Sarah, explaining how this refuge was at the top of their wish-list. The wall that the bath sits against wasn’t quite central, “so the bath had to be exactly central; the minutest detail was important to us,” says Sarah. The shower has a £500 ‘soft-feel’ shower tray, there’s a Bluetooth-enabled speaker in the ceiling, and various lighting moods can be provided. The tile “wasn’t expensive,” insists Sarah, “however, buying through our tiler meant we got his 35 per cent trade discount.”

The bedroom is double-aspect, with a window to the side giving a view of the tree, and the squirrels’ dray, which helps give the room a feeling of tranquility with views of nature wherever you look. Sarah and Andy carried through this idea having enjoyed seeing the squirrels in the previous house’s bedroom which also had a window on this side. (Somewhat bizarrely, the house was designed with no window looking towards the park, however they have remedied this in a big way.)

Situated above the living area is a snug

SARAH'S TOP TIP

- * Know how you want to live and don’t compromise on that. We knew that we wanted to end up with something that was a flexible space

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lounge, an alternative to the open living space below with a large window providing another great view over the landscape. "We think this is going to be our winter lounge," says Sarah. A frameless glass balustrade sits outside the lift-and-slide windows as well as behind the sliding windows to the master bedroom; "you can barely see it at night," enthuses Sarah.

COST & CHALLENGES

Achieving cost savings has been a major goal for Andy and Sarah, and they have used their contacts in the industry to get products direct from manufacturers where possible, or simply contacting companies to find the cheapest price for the products they want. An example is the striking grey laminate internal doors which ended up not costing much more than "bog standard" doors. They have magnetic black 'carbon fibre' handles, completing a modern look inspired by the couple's love of Formula 1.

Sarah is proud of their thrifty approach: "Almost nothing in this house has been bought at retail price." She explains further: "We've basically bought on sale or gone to the manufacturer." For example, the sofa and rugs to the living area came from an auction.

A further weapon was their project manager, who was invaluable in helping to shave thousands both off the costs of the steel in the build, and associated concrete foundations, following Brexit concerns forcing a hike in steel

prices. Sarah says: "There was originally £23,000 of steel in the design holding up the cantilevers, and protecting the sliding door against deflection."

Despite the £300K budget being adhered to rigorously in most cases, the brickwork went "massively over," says Sarah. This has prompted the couple to think that if they had their time over, they'd have gone for timber frame throughout. "We would have got it done much quicker, while getting the same result from the point of view of air-tightness."

Unfortunately their project manager was to fall ill late last year and was unable to return, leaving Sarah and Andy to project manage on their own, over the critical final stages of fixtures and finishes. "We've basically managed it since Christmas, you learn on the job," she says philosophically. Despite the ups and downs, they've achieved a cost of £1,395 per square metre, which is "not bad at all when you look at the space, the high ceilings, and the fact we have a few nice things," says Sarah.

The sliding doors to the living area were the ultimate example of this, but were also probably the most nervewracking challenge. The glass panels, each weighing a third of a ton, had to be craned into the back garden from the adjacent car park, there being no direct rear access.

Sarah says the installation, despite the help of a robot, was "very hairy, terrifying". She

GLASS LIFT

The glass panels for the rear sliding doors, each weighing a third of a ton, had to be craned into the back garden from the car park next door

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explains that because of a packing issue, the robot had to manoeuvre to the other side of each panel before they were installed: "As we took each panel off there was a moment when the robot had to hold the glass, let go of it as we held it in place, and then take it from the other side." She recalls: "You've never heard a site so silent."

CONCLUSION

This is not only a handsome, imposing home which takes the maximum benefit from its site to provide some very pleasant internal spaces, with strong visual connections to the landscape, plus family comfort. It has also been achieved for a very modest budget, and with a responsible attitude to sustainability.

Measures range from the copious insulation e.g. around potential metal connections causing thermal bridges in the fabric, to add-ons like the efficiency-maximising Lutron smart home unit (controlling lighting, alarms, blinds etc.) and an air source heat pump, plus the coming installation of PVs on the 100 m² flat roof. The big aim is for the house to be energy self-sufficient if needs be in future.

As well as their house providing the space and

Sarah and Andy's painstaking as well as patient approach has paid off, having produced their ideal sustainable home

features that Andy and Sarah need for them to entertain friends and family, the energy performance is the crucial future-proofing final element that makes this house an out-and-out success for them.

While Sarah says that although they're not ruling out building another house in the future, they're unlikely to do it for themselves again, as they hope to stay in this one for the long-term. The couple's painstaking as well as patient approach has paid off, having produced their ideal sustainable home – and will continue doing so long into the future. ■



CASE STUDY

STEPPING INTO THE LIGHT

Despite having an architecture degree, Tom Holliday and his wife Carly turned to an architect friend to help them transform a dark, dated cottage into a light and spacious family home near York

TEXT HEATHER DIXON IMAGES HEATHER DIXON & TIM HATTON ARCHITECTURE

If Carly and Tom Holliday had known what they were letting themselves in for when they started renovating their 19th century farm cottage, they would probably never have bought it.

"Hindsight is a wonderful thing," says Tom. "Our biggest mistake was not sitting down at the beginning of the renovation and working out exactly what we wanted, how much it would cost and how we were going to fund it. The reality was that we spent far more than we anticipated and it took a lot longer than we thought it would."

In spite of that, Carly and Tom have achieved everything they wanted thanks, in no small measure, to their friend and architect, Tim Hatton of York-based Carve Architects.

When they started looking for a home within a 10 mile radius of York, property manager Tom and Carly, a project manager who works for the NHS' private events arm, turned to Tim for help and inspiration.

"We were living in London at the time and

wanted to be closer to friends and family," says Tom. "Tim drew up a list of villages we might be interested in and eventually we found this place. It wasn't what we had in mind, but as soon as we saw it we realised this was the one. It wasn't the house so much as the surroundings that really appealed to us."

"It was a very steep learning curve and we have learned a huge amount along the way, but there is very little we would change"

EXTERIORS

The brick cottage has been given a modern new facelift in the design by Carve Architecture, with a light-filled kitchen extension that opens directly onto the garden

LOW POINT

"Realising just how much the budget had run away with us and having to find ways of cushioning the cash flow."

– Carly & Tom Holliday





The cottage came with 1.5 acres of land – more than they knew what to do with – and had “huge potential,” says the couple.

“We didn’t really want this amount of land but it was too good an opportunity to miss, and the house had a really good feel to it. It was gut instinct that made us buy it,” says Carly.

The farm cottage, built in the 1850s, is one of three adjoining properties and had a very small ground floor footprint. There was a staircase running directly from the sitting room and the previous owners had extended to create a bigger kitchen and two bedrooms upstairs. The resulting L-shaped property had an added lean-to. There was a wood-burning stove with a back boiler, and few windows to bring natural light into the property.

Carly and Tom were unfazed by the dated design and bought the house in October 2016 for £350,000. They didn’t move in straight away, however. In fact building work didn’t start until over a year later, in February 2018, after months of painstaking planning and preparation.

“Tim gave us lots of design ideas,” says Tom. “We studied architecture together at university and while I have a degree in architecture, Tim is really visual and forward thinking. We trusted his judgement and advice completely. Although he is a very good friend, that didn’t stop him being very professional

and cutting to the chase. He listened to what we wanted for the house, how we wanted to live in it, and came up with four or five key designs based on our wish list.”

While Tim’s strength lies in seeing the bigger picture, Tom has a finely tuned eye for detail and, between them, they were able to bat ideas back and forth until they agreed on the final design.

The build involved knocking down the old lean-to and erecting a new kitchen extension in its place, before knocking out the original exterior wall to create one large room

ABOVE

The spacious kitchen has been built to link both sides of the original L-shaped house, where there was once a lean-to

OPPOSITE

It took the builder a week – and four pneumatic drills – to break through the concrete floor to install underfloor heating

HIGH POINT

“Finally moving in after nearly two years of planning and building. It’s been quite a journey, but now we wouldn’t want to live anywhere else.”

– Carly & Tom Holliday





"I suggested a veranda balcony going round the house at first floor level, but Tim said it wouldn't work in the setting – so we compromised with a Juliet balcony," says Tom. "Tim also suggested the nibs and portico, using K-Rend to create shadow lines and visual interest when you view the house from the garden."

The final agreed concept included a 5 x 6 metre extension on the ground floor plus 3.5 x 4.5 metres of new space on the first floor, creating a total two-storey increase in living space of around 45 m².

Tom's biggest regret was that he had to park his dream scheme of building an underground 'man-cave' due to an estimated £100,000 price tag.

"Since I was a boy I've loved the concept of bunkers," says Tom. "I always said I would have one when I grew up – a man cave, cinema room, music room or a kids playroom. I asked Tim to include it in his design but it was cost-prohibitive. It's not entirely out of the question, though!"

Plans were finally passed in January 2017 and Tom and Carly then spent a further six months trying to find a suitable builder. "We chose the first builder because he said he was able to project manage it, but in the end it didn't work out so we found another builder, Chris Smith, on Facebook. He turned out to be a great find – his attention to detail was amazing," says Tom.

"We really wanted to find someone who would be reliable, easy to work with and who

would also go the extra mile to get the best deals on building materials," says Carly. "We liked the fact that Chris was always very 'can-do' and would come up with suggestions that would improve the build, rather than simply being negative."

Carly and Tom moved from London into a house in nearby York while the building work was done, so they could be close enough to oversee the build on a daily basis.

The build involved knocking down the old lean-to and erecting a new kitchen extension in its place, before knocking out the original exterior wall to create one large room. The exterior was also redesigned to turn the dark traditional cottage into a light, open, modern family home featuring white rendered walls and rooflights.

It was February 2018 by the time the trench foundations were completed and a double leaf masonry wall built for the extension. Working in snowy, freezing conditions, the builder also dug out the entire ground floor to lay underfloor heating pipes, using a mini digger to remove the debris. It was unexpectedly challenging: the previous owners had laid ultra hard concrete which "ruined" several pneumatic drills before they finally broke through it all. Part of the first floor was also taken down and rebuilt to create a higher ceiling in the extension.

Access to the house created its own set of challenges. The lane to the back of the property is very narrow and a cable running across the lane had to be held up to enable lorries to squeeze underneath. Many materials were left



CONTACTS/ SUPPLIERS

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on the roadside and manually carried to the site during the build until work on the main driveway was completed.

The level of this drive – to the front of the house – had to be raised and levelled to compensate for the high water table and allow for external pipes for ground source heating, which cost £10,000 and was organised with help from Go Eco Renewables.

Although the cost had been allowed for in the initial estimates, there were many other costs which sent the overall budget spiralling out of control.

"We realised, too late, that a series of incremental smaller costs soon started to escalate into one big cost which we had neither planned nor budgeted for," admits Tom. "If we had to offer advice to anyone doing something similar, it would be to work out an overall budget from the outset and get a full breakdown of the costs in writing. I would resist the temptation to agree to additions that the builder suggests, given the relative small cost. We got taken up in the spirit of 'while the builders are here and it's a good price for this addition, let's just get them to do it' without thinking how we were actually going to pay back the additional debt this got us into."

In the end they sold two investment rental properties to pay off their bank loans.

"There has to be a bit of flexibility, but we took a lot of risks, paying for rent and mortgage at the same time without thinking about how we would pay off these extra costs. We probably wouldn't have done it if we had worked it out

properly beforehand."

That said, they are both delighted with the results.

Cost issues aside, they finally moved in May 2018 once the £5,000 kitchen from Howdens was installed, bathroom fittings were in and floors coverings laid.

"We had a few problems to begin with, including a significant leak through the ceiling when we switched on the water," says Carly. "Something hadn't been capped properly and water came pouring into the extension."

The couple also came up with some ingenious ideas to prevent other problems in the future – like photographing everything throughout the project.

"We even took drone pictures of the trenches for the ground source energy pipes being laid so that we knew where they were if we ever needed to access them," says Tom. "It was a very steep learning curve and we have learned a huge amount along the way, but there is very little we would change. The extension has totally transformed the way we live and we love the direct link to the outdoors."

Carly and Tom still have a lot to do – especially in the garden – but now they are finally in and enjoying the benefits of the house they have no regrets about taking on the renovation.

"Had we known then what we know now, we would probably not be living here," says Carly. "But it was definitely the right thing to do in the end. Thanks to Tim and his vision, it has lived up to all our expectations." ■



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Going green

Victoria Ramwell from Kemper System discusses specification best practice and the key considerations for green roofs, including design, location and waterproofing membrane

Green roofs are evolving rapidly, transforming from a specialist eco-feature to a more mainstream technology which can be seen on new homes of all shapes and sizes. However, the success of a green roof depends on a number of factors, so self-builders must not only consider the structure itself, but the location, orientation, shading and climate of their site.

PLANNING AT DESIGN STAGE

While it may appear that planting can be decided at a later stage, it is important that these decisions are considered at the design stage as the roof build-up impacts on the planting possibilities. For example, wildflower meadows are a popular choice for large expanses of roof surface, but they need plenty of moisture, which means designing the roof to accommodate the load and a greater depth of reservoir core, as well as necessary growing medium to keep the green roof healthy. Alpine planting however needs much less water to thrive, which influences the load bearing capabilities required from the roof.

A WATERTIGHT SOLUTION

The most vital element of the green roof is the waterproofing membrane which is used to create a watertight barrier between the roof substrate and the green roof system. The membrane should be flexible enough to cope with any post-build settlement, tough and durable enough to cope with the load bearing requirements of the planting medium, and have a sufficiently long service life to make the green roof viable.

A common green roof design would typically consist of an inverted warm roof build-up, applying the waterproofing system to the roof substrate, followed by the insulation, and then the green roof elements. This can add an extra layer of protection for the waterproofing membrane as it is cushioned underneath the insulation.

However, a cold-applied liquid waterproofing solution can be installed either below or above the insulation,



depending on the type of insulation used. This is because these systems are FLL certified as root resistant, so there is no risk of root damage to the integrity of the waterproofing membrane, even as plants mature and their root size increases.

Consulting the waterproofing membrane supplier for technical support can help determine the right specification in this regard.

LOCATION IS KEY

Another key consideration during green roof specification should always be the location and prevailing climatic conditions as these govern the amount of light, heat, shade and moisture the roof will receive. The influence of surrounding buildings, which can also affect shading levels and exposure to winds, also need to be taken into account. These factors should be assessed collectively to determine the viability of different types of planting.

Of course, no matter how carefully the planting is considered, without proper maintenance, the green roof will not thrive post-installation. Establishing a maintenance plan including associated costs needs to be factored in at the design stage for the green roof's

The waterproofing membrane should be flexible, tough and durable, and have a sufficiently long service life to make the green roof viable

aesthetics and benefits to remain durable.

SPECIALIST GUIDANCE

Green roofs have significant advantages for the environment – climate control, storm water attenuation, noise and pollution reduction and heat insulation. They protect against thermal gain and offer an additional habitat for



flora and fauna.

Whatever your requirement, it is advisable to seek guidance from technical specialists to ensure your green roof performs correctly, meeting local climatic conditions as well as aspect and biodiversity requirements.

CASE STUDY: LIQUID WATERPROOFING BENEFITS

Chapter House is a sustainable contemporary home featuring two green roofs. Located in Surrey, the detached self-build property spans 258 m² and was designed by an architectural

practice headed by former head of RIBA Jane Duncan.

Positioned to make the most of the views, daylight and sunshine, the house has been built using a range of natural materials, including timber cladding and Scandinavian bricks.

Homeowner and former builder Nigel Warnes helped to specify a liquid waterproofing resin for the project. The product was required for a sedum roof above the main living area and another above the new garage.

"The sedum roofs are a key feature of

the house as both are visible to anyone approaching the property," explains Nigel. "As a retired builder, I was keen to be involved in their design, especially the waterproofing to ensure the most effective solution."

"I wanted to use a liquid rather than a single ply membrane as it would fully bond to the substrate offering a more durable solution and greatly eliminating the risk of any leaks."

The liquid resin was applied by Surrey-based Exterior HomeCare and installed 'wet on wet' in a single process using a reinforcement fleece. Once cured, the resin formed a seamless and elastomeric membrane that is inherently root resistant. Prior to laying the green roof, electronic testing was also carried out to ensure the solution was as robust as possible.

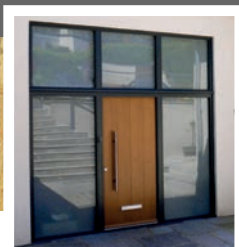
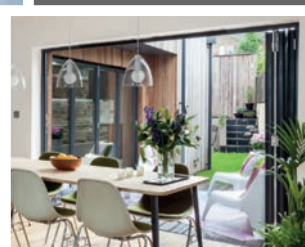
The waterproofing membrane, which was a vital element of the green roof specification, has guaranteed a watertight barrier between the roof substrate and the green roof systems, and is also root resistant. Its strength and flexibility provide the homeowner with the assurance that the sedum roof will remain viable for at least 20 years.

Victoria Ramwell is UK marketing manager at Kemper System

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Shedding light on colour in the home

Roof window manufacturer VELUX® and paint and wallpaper experts Farrow & Ball have come together in a new campaign which highlights the transformative effect that daylight can have on interior design.

The campaign centres on the transformation of the Toomey family's single-storey extension using VELUX roof windows and Farrow & Ball colours. Working together, VELUX daylight expert Grant Sneddon and Farrow & Ball colour expert Joa Studholme showed the couple how to make the most of the available daylight and how to choose colours that look great in their space and suit their lifestyle.

Sean and Sophie bought their 1950s three-bedroom terraced house in Swindon 10 months ago as they knew it had great renovation potential. The rear of the property originally had four small

rooms that were dark, gloomy and completely unusable, but with the help of a local architect and builders, they took on their biggest renovation project to date.

Adding a single-storey extension, they created a large, open-plan kitchen and living room with three large VELUX INTEGRA® electric white painted roof windows to provide as much daylight and ventilation throughout the space as possible. To access the garden easily, they also added bi-fold doors.

Grant Sneddon, daylight expert at VELUX, said: "Making sure that light penetrates deep into the room is important when you have such a big space, and roof windows do that as they offer twice as much daylight as a vertical window of the same size."

Homeowner Sean said: "The roof windows with added rain sensors add so much daylight and air flow



throughout the day, they're a great way of bringing the outside in. Living in the UK, the weather can change in an instant so we feel reassured that they will close automatically if the rain comes on when we're out.

"We also chose VELUX dark blue electric roller blinds to tie in with the interior of the kitchen, and awning blinds to help control heat coming in, particularly on bright days."

To find the perfect colour complements for the modern fittings of their extension, Sophie and Sean enlisted the help of Farrow & Ball's colour consultancy service.

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CASE STUDY

GOOD THINGS COME TO THOSE WHO WAIT

Finally moving in to their dream self-built home in Norfolk was a very long time coming for David and Deanna Martin

TEXT JAYNE DOWLE IMAGES SWANN EDWARDS ARCHITECTS



SEASIDE FEEL

The house is located 12 miles from the coast, so David and Deanna liked the idea of a New England-style clad exterior

One of the most intimidating aspects of buying a plot of land and building your own house is worrying that you won't like it when the last piece of the jigsaw finally falls into place, and you move in.

This wasn't a problem for David and Deanna Martin, who now live in a striking self-build contemporary home in Emneth, near Wisbech, Norfolk.

Realising their dream to have a sustainable and stylish place to enjoy their retirement together started when they bought a 1,200 m² plot of land next door to their existing home in 2004.

However, they took a number of years to carefully consider their first self-build project before embarking on it in earnest in August 2014, moving in February 2016.

"Our previous house was a Georgian farmhouse," explains former primary school teacher Deanna. "It was lovely, with lots of period features, but it was costing a lot to maintain and to keep warm."

"And the floors creaked!" says David, who worked as an agricultural consultant and is a keen gardener. "One of the first things we noticed about our new house was that the floors didn't creak at all."

The Martins had found themselves spending more and more time living in the conservatory at the back of their house and began to imagine what it might be like to have a home which opened up directly at the back to a garden.

They also enjoyed the natural light the conservatory brought in, and this began to inform their ideas of how they might want a new home to look. Also, they wanted to embrace the flexibility of integrated open-plan living rather than working around a series of smallish, unconnected period-style rooms as they currently were doing.

"We were living in a house with 12 individual rooms and using just one or two," says David. "Now we're living in a house with six rooms and using all them all."

Their new home has three bedrooms, plus a

LOW POINT

"When we ordered the triple-glazed windows and all the first-floor windows came back from the manufacturers 400 mm too small. The company took responsibility for the matter and replaced them all, but it set us back six months in the middle of the build."

– David Martin

"What we most definitely weren't interested in was building a boring box. We were looking for perhaps what you might call a non-conventional architect"



study, garage, downstairs bathroom and an open-plan living/dining/kitchen area. On the first floor, reached by a hand-built oak and stainless steel open-tread staircase, there is a library area, created by cantilevering the landing in a gallery style. It is highlighted by a stunning glass pendant light-fitting which makes a huge impact hanging over the hallway and stairs.

The stylish simplicity of modular homes such as Huf-Haus attracted David and Deanna, not least because they are easy to maintain externally. And because Wisbech is just 12 miles from the sea (The Wash nature reserve), they liked the idea of a New England-style clad exterior.

Both their visual and practical ambitions have been achieved using long-lasting, low-maintenance render and HardiePlank fibre cement cladding, along with a zinc-clad aluminium roof and aluminium windows with an internal timber face.

"What we most definitely weren't interested in was building a boring box," says David. He adds: "We were looking for perhaps what you might call a non-conventional architect, someone who would understand and interpret what we were thinking of."

Luckily, they didn't have to look far. Russell Swann, of Wisbech-based Swann Edwards Architecture, lives in the neighbouring village, in a sustainable home with a strong contemporary thread. They invited him for a meeting and

discovered that his ideas chimed with their own.

"The back of the house is all glass," says Deanna. "And the front is quite imposing as you come down the road. A lot of people who know me locally couldn't believe that I wanted to live in an house like this, but over the years we have lived in all kinds of houses including a bungalow and our Georgian one, so the idea of having a contemporary-style house didn't faze me at all – in fact it was really exciting."

"Thermal performance was always one of my criteria," adds David. "We were spending around £3,000 per annum on energy bills in the old place. One of my targets was to slash that cost, especially because as we get older, incomes become pretty fixed."

To achieve this crucial aim, Russell brought together both 'passive' and 'active' design strategies to design a house with carbon neutrality and sustainability to the fore.

This meant manipulating the site's particular characteristics and climatic conditions to optimise the building design and combining this approach with efficient M&E (monitoring and engineering) systems and renewable technologies.

"By making the building the right shape with carefully-placed windows, entries, exits and rooms, we were able to reduce its energy consumption by 30 to 40 per cent," he says.

Underpinning this strategy is a clever exploitation of the building's orientation. The

DECOR

Deanna describes the interior décor scheme as "contemporary classic"



HIGH POINT

"I love the fact that we've got a fireplace in such a modern house. I like to decorate our home for Christmas and although we chose not to install an actual fire – or chimney – I have a mantle-shelf which is great for a vase of flowers, and gives us a lovely focal point for decorations."

– Deanna Martin

200 m² house is designed to ensure that the rooms requiring the most heat – the living areas – are positioned and orientated to utilise solar gain. The design placed windows in the ideal locations to maximise daylight and reduce the Martins' dependence on artificial lighting. And conversely, it includes as little north-facing glazing as possible in order to minimise heat loss during the winter months.

Also, the outside space is arranged to provide a south-easterly facing garden at the back of the house – David's pride and joy – which receives plentiful sunlight. The north-facing garden to the front, strategically sheltered with existing planting and structures, provides a cooler, shaded area.

Along with triple-glazed windows, the walls, floor and zinc-clad aluminium roof are super-insulated, all exceeding the minimum requirements of Building Regulations. This insulation helps to regulate and stabilise the internal temperature of the house by enveloping the high thermal mass structure, which includes concrete floors upstairs (result – no creaks). The inside stays warm in winter and cool in summer with minimal energy input.

There are no radiators, and underfloor heating runs throughout the house. All of the ground floor is tiled, and elsewhere it's real wood flooring except for two bedrooms, including the master. "The underfloor heating was for aesthetic reasons first and foremost," says

"It was really quite difficult to find people who were willing to come out and price up what is, for the area, an unusual job"

David. "But the really pleasing thing is that the heating is so uniform. You don't go out of the living room into the hall to be met by a blast of freezing cold air, the temperature is ambient throughout."

There is also a 4 kWp array of solar panels on the south-facing part of the roof. All these measures ensure that the building achieved an A-rated energy performance certificate (EPC), has minimal running costs and minimal associated CO₂ emissions.

When the final air test was undertaken, it revealed that the building is an impressive 2.39 m³/h@50pa. Russell says that this is five times better than the minimum required by Building Regulations.



“By making the building the right shape with carefully-placed windows, entries, exits and rooms, we were able to reduce its energy consumption by 30 to 40 per cent”

With the design in place and passed by the local council planning department with only minor adjustments necessary, the next step was to find a construction team who were up to the job.

This was the biggest challenge of the entire project. “It was really quite difficult to find people who were willing to come out and price up what is, for the area, an unusual job,” says David. “Tradesmen found it a bit tricky to give us a firm price for whole aspects of the job as they weren’t sure, so we ended up agreeing a reasonable day rate for a lot of the work.”

He says that he also approached the problem by choosing key people, starting with the groundworkers, then using their connections to find the next team: “If you need someone to lay blocks and bricks, for example, you’d use his connections to find a good carpenter. In that way, you make sure that you are getting a compatible team, so that when you get an issue

CONTACTS/ SUPPLIERS

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flooringsupplies.co.uk

TILING

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BLINDS

Ballatine's
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STAIRCASE

Stair Factory
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SUSTAINABILITY

Along with triple-glazed windows, the walls, floor and zinc-clad aluminium roof are super-insulated, with all exceeding the minimum requirements of Building Regulations

DAVID'S ADVICE

"We bought almost all the materials ourselves, rather than asking our contractors to obtain them for us. If you have the time, and are reasonably confident at talking to suppliers, this will save you money as there will be no mark-up added on."

the boys are not blaming each other, saying, 'it's his fault, he should/shouldn't have done this.'"

As well as taking charge of sourcing almost all the building supplies himself, visiting local quarries for instance, and haggling hard, David did all the internal painting, helped by Deanna. Most of the walls are light stone, boosting the already copious amounts of natural daylight which make the internal spaces both airy and calm. It took several coats to cover the sand and cement render, used in place of standard plaster as one of the careful measures to keep costs under control.

Deanna describes the interior décor scheme as "contemporary classic". She admits she found it quite hard to come up with a look that felt both comfortable and fitting to the house's ultra-modern aspects, such as the over-sized doors and streamlined kitchen and bathroom fittings: "When I first thought about it, I thought that oranges and greys would work, but then I decided that I wanted something with a bit more warmth, which is how we came to have soft colours such as plums, taupe and creams. I'm very pleased with the way it's turned out now – not ultra-modern, quite classic."

David is especially proud of his ingenious solution for hanging the curtains Deanna wanted up at the windows – to add texture to the room schemes and privacy. "I thought, I love the simple look but it's easily going to look too modern and stark," she explains. "And then I thought, I'm not going to be too comfortable without curtains. I considered shutters, but because the windows are so big they would

have been too heavy. We fitted pleated paper blinds upstairs, but I definitely wanted curtains downstairs."

However, there was a problem. The full-height window frames finish on the ceiling. David stepped in and took advantage of the six-inch void in the suspended ceiling above, creating an internal 'box' which not only housed the curtain track but allowed for the installation of LED lights, which cast a cosy glow downward in the evenings.

It all adds to the ambience of what is obviously a very well-loved home. "What we really like to see now is the perspective when we stand in the garden at the back," says Deanna. "You hardly ever see your house from this angle, but we liked the view so much – with the sky reflected in the glass – that we decided to build a summer house at the end of the garden in the same style as the main house, so we can spend time in there just appreciating what we have done."

It is indeed no easy feat to create a home which minimises carbon emissions, taps into natural resources and is a comfortable environment to live in and enjoy – and is future-proofed, with its owners in mind.

Add the fact that this project achieved all this, and set interesting design parameters in its Fenland village setting, all for a very reasonable build cost of £350,000, and it is no wonder that David and Deanna are delighted with the end product of taking that first step over the fence. ■



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Pellet stoves: style and substance

Specflue's Ian Sams explains why pellet stoves offer an ideal heating solution for self-builders, from their environmental credentials and aesthetic appeal to the best units' ease of use and installation

As any self-builder knows, the secret to a successful project lies in the planning. Whether you project manage yourself or employ an expert, failing to plan is planning to fail. And with so many considerations and priorities to juggle, from choosing a builder, specifying fittings and getting services on site, not to mention managing relations with your local planning officer, secondary heating choices tend to fall way down the list!

The decision on how we heat our homes is not just a matter of aesthetics. We must be mindful too of cost, reliability, efficiency and emissions. Substance as well as style is key, and a modern pellet stove can offer the perfect combination of both.

FUTURE-PROOF HEAT

With a wealth of benefits such as smart controls, ease of use, low maintenance and efficiency, pellet stoves tick all the boxes when it comes to environmental credentials. Under EU Ecodesign requirements that come into force in January 2022, pellet stoves must have a minimum efficiency of 79 per cent. Many models on the market today already far exceed this, offering efficiency in excess of 90 per cent with A to A++ energy efficiency ratings.

Similarly, with tough new maximum particulate emissions levels being set by Ecodesign and the Clean Air Strategy, and with the maximum permissible particulate emissions for pellet stoves being half that of log burning stoves, a pellet stove is the perfect choice for the discerning self-builder looking to future-proof their new home, renovation or extension.

Many pellet stove manufacturers have already overhauled their product ranges to ensure that they meet 2022 requirements today, so keep your eyes peeled for phrases such as "ecodesign ready" and "2022 ready/compliant" when you shop around – your local stove



showroom will also be able to advise on which models fit the criteria.

While pellet stoves, also known as air stoves, are the focus here, bear in mind that you can also get hydro pellet stoves that provide both room heating and hot water, pellet boilers which can replace a central heating boiler to power underfloor heating as well as room heating and hot water, and there are also a range of removable pellet inserts on the market designed for installation into an existing fireplace.

A pellet air stove is an ideal solution for

secondary heating, perfect for extensions, garden offices and conservatories and can be used to heat either a single room or multiple spaces with a ductable model.

CUTTING-EDGE TECHNOLOGY

If smart tech is your thing then a pellet stove offers the ultimate in connectivity and controllability. From a basic appliance-mounted digital display control and hand-held remote controls, through to smart phone connectivity that gives on/off and temperature control from anywhere, programmable pellet stove



With a wealth of benefits such as smart controls, ease of use, low maintenance and efficiency, pellet stoves tick all the boxes

control technology is second to none. Some manufacturers even offer additional functions such as Wi-Fi temperature probes that allow you to set a desired temperature at any given point around the home.

STYLISH GOOD LOOKS

This level of control gives pellet stoves the edge over their log burning cousins, and while you may have heard the purists argue that the 'flame picture' of a pellet stove is no match for the log burner, even that is now a myth.

Thanks to ongoing innovation in brazier design – the brazier being the metal tray that holds the burning pellets – the flame picture from a pellet stove is now better than ever. Look for a long, narrow brazier

as this will distribute the pellets more evenly for a wider view of the fire.

And speaking of looks, pellet stove design is not exclusively utilitarian chic – there are plenty of choices to suit all interior styles from Scandi style cylindrical in any number of colours, to the squared look of the traditional log burner.

In terms of installation, a pellet stove is no more complex to install than a traditional wood burner, but you will need an electrical point. As with a wood burner, you will also need the appropriate flue. Your best option is to use a HETAS registered installer to ensure that your chosen pellet stove and flue meets Building Regulations and is safe to use.

When it comes to fuel, the pellet stove offers yet another smart choice in terms of future-proofing your heating. With fossil fuels being closely scrutinised under the Clean Air Strategy, pellets, or biomass as they are often referred to, offer the ultimate in sustainability.

Manufactured from pulverised biomass using a variety of compression and extrusion processes, pellets offer a number of advantages over wood logs, not least in terms of size, weight and burn consistency.

This offers a number of benefits including ease of storage – a bag of pellets takes up considerably less space than the equivalent kw output of logs, and ease of use – some pellet air stoves only require a daily fill depending on the

size of the hopper and length of appliance use, compared to every couple of hours for a log burning stove. Also, because they produce little ash and chimney creosote, cleaning is minimised.

Check the Woodsure website to ensure your pellet manufacturer or supplier conforms to the required standards for biomass fuels and just like wood logs, make sure you protect your fuel from moisture to ensure burn consistency and optimum appliance operation.

ULTIMATE CONTROL

Pellet stoves offer you ultimate control and maximum efficiency with hands-off operation – perfect for today's busy lifestyles. Automatic ignition, power modulation and combustion control are all things that pellet stove users take for granted. The flexibility offered in terms of whole house or single room heating makes them ideal for both new build and retrofit renovation projects where reliability, efficiency and aesthetic appeal are demanded.

Specifying a pellet stove for your project will also help guarantee the environmental credentials of your build and future fuel security.

So if you're looking for style and substance, invest your hard-earned pounds in pellets.

Ian Sams is commercial director at Specflue



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CASE STUDY



FAMILIAL TERRITORY

While most people undertaking a project will buy an unfamiliar plot or house, possibly even in an unfamiliar area, a couple in Cheshire took the opposite approach, building next door to the in-laws

TEXT & IMAGES JULIET DAVIES

Some would shy away from a property where your next-door neighbours would be your in-laws, but for Jodie Nesbitt-Shaw and Mark Shaw, the family connection was why they chose their house!

The cottage near Sandbach in Cheshire had originally belonged to Mark's grandmother, and sits beside his parents' home.

Whenever Jodie visited Mark's grandmother she always loved the cottage, which while tiny, had a fairytale air about it. His grandmother had moved in to the house decades ago with her husband, and brought up four children there. Mark's great-grandfather built the house next door to her, where his parents now live.

Following Mark's grandmother's death, the cottage was put up for auction, and with an idea that they could fulfil their dream of moving to the country, accompanied by some big plans for the tiny cottage, the couple put in the winning bid.

From the front, the cottage retains its rural

Although glazing dominates the rear elevation, Cheshire brick, reclaimed from parts of the original cottage, was used on the extension

charm, but it is around the back that the traditional turns contemporary, where huge windows flood the extended rear with sunlight, and offer views over the

ABOVE

The front the cottage retains its rural charm, but around the back the traditional turns contemporary

OPPOSITE

The beautiful wooden dining table was made by Patsy's Place in Liverpool

LOW POINT

"Finding out that the foundations needed redoing, at a cost of some £10k."

— Jodie Nesbitt-Shaw & Mark Shaw





The installation of the windows seemed to mark the change from a building site to a prospective home

surrounding countryside.

Despite the fact that when purchased the property was in a very poor state of repair, the couple still faced objections when they applied to renovate and extend it – even though from the road all that can be seen is the front elevation, which still retains the original 150 year old cottage's bucolic charm, and a wall that formed part of the 110 year old barn.

However, working with planning department and their architect, objections were overcome and neighbours soon became fascinated by the works.

"It was really exciting to see my original rough-sketches brought to life by the architect's rendering," says Jodie.

The planning application was a rollercoaster and took six to seven months to get passed. "They were very strict on what we could do – the roadside appearance had to stay the same, even down to how we replaced the air

bricks on the wall of the barn," says Mark. "Working with the rigidity of it was hard, but we had a cracking architect in DnA Group from Chester; Mark and Rachel helped us fight for the planning."

The local authority stipulated the necessity for a bat and barn owl survey, and an archaeological survey, although no issues were found that delayed or changed the plans.

Once the build project was progressing the couple left their previous home and moved in with Mark's parents to be closer to the site, hoping that shortly it would be advanced enough for them to move in, with the project continuing around them.

Once the works were finally underway, they thought it was going to be an easy ride – but the original builder laid a traditional foundation, and Jodie and Mark discovered to their dismay that a reinforced raft foundation was required. The resulting works to take out and replace the foundations added £10k to the build cost. "Do not rely solely on your builder for information; establish the legalities of things," advises Mark.

After the problems with the foundations, the couple parted ways with the builder, and a frustrating, dormant few months followed. But with great timing, one of Mark's best friends, Tom, set up a building company, Prestige Building Services, and they knew they could trust him!

Tom arranged all of the work, which was carried out on site by Tommy, who kept the

OPEN

The open-tread hardwood staircase leads up to a glass-balustraded landing – adding further to the property's open plan airiness



HIGH POINT

"The feeling that it was all coming together when the windows were installed."

– Jodie Nesbitt-Shaw & Mark Shaw

project moving forwards at a pace.

The couple also found it was well worth using an independent building inspector, CPR of Stoke-on-Trent, who acted on the local authority's behalf and made the process much more fluid.

While there were no unexpected structural issues to be addressed, this area of Cheshire is known for its salt mines, and the local authority can offer payment for repairs for building movement caused by salt-related subsidence.

However, the cracks in the barn wall were not deemed caused by this – even though it was the same authority that insisted on the raft foundation and floating floor to counter future issues with salt-related subsidence – so Jodie and Mark were unable to take advantage of the funding.

Although glazing dominates the rear elevation, Cheshire brick, reclaimed from parts of the original cottage, was used on the extension, connecting further the old and the new.

As Mark works in procurement, his experience proved to be invaluable. When it came to sourcing the windows and doors he used an array of manufacturers. "To get the exact products we wanted we went with several firms – we chose aluminium as that allowed the frames to be slimmer," he says. The bi-fold doors were bought from Sterling in Warrington.

"We had great advice from one company, who recommended that we had the anthracite



grey on the outside so the exterior glazing was all the same colour, but white on the inside in the old cottage part," he continues. "We also ensured that for satisfactory sightlines there were the same number of glazing panels downstairs as on the window above – this made for a pleasing symmetry when looking at the property from the outside."

As with any new build or refurbishment



“There was a lot of soul-searching and digging deep, but often I find myself sitting on the top stair looking out of the windows at the garden, and thinking – wow – it’s been worth it!”

project, insulation is an important part of meeting Building Regulations, and the property is kept cosy with a variety of products - the kitchen/lounge/diner floor floats above six inches of Celotex insulation laid between the joists, with underfloor heating laid by the couple themselves.

The cavity walls have four inches of slab insulation, while upstairs, which features sloping ceilings in order to keep volume, foil-backed insulation was used with additional insulation in the overlapping eaves.

The interiors of the cottage fit the building

perfectly, and create a beautiful family home for the couple and their two children.

Downstairs is the open-plan family kitchen, lounge and dining room, with large-scale marble floor tiles. The kitchen boasts an island complete with marble worktop and a Belfast sink, while a contemporary chandelier from the casts a glow over the informal seating area.

The beautiful wooden dining table was made by Patsy’s Place in Liverpool; the same sewing-machine stands used to support the table are also used to lovely effect under the sink in the main bathroom. Seating pews came from the old church that Mark’s grandmother attended, adding further family history to the home.

The sitting room in the old part of the cottage boasts a pool table and snug, and a fireplace in the dividing wall opens on both sides, so when the dual-aspect woodburner is installed this will also warm the kitchen.

The open-tread hardwood staircase from StairBox leads up to a glass-balustraded landing, the use of glass adding further to the open plan airiness that the property enjoys.

The galleried landing looks down on the kitchen, and two stunning chandeliers flood the rooms below with dramatic light. “With most of the lighting in the house being recessed spots we have only three suspended lights, so we felt that these should make a statement,” says Jodie.

Upstairs are four bedrooms, one each for the couple’s two children, an ensuite guest bedroom, and an ensuite master bedroom – all

INSPIRED

The family bathroom features a roll-top claw-foot bath and patchwork-inspired tiles that were also used in the ensuite

HOME COMFORTS

Upstairs are four bedrooms, one each for the couple's two children, an ensuite guest bedroom, and an ensuite master bedroom

CONTACTS/ SUPPLIERS

ARCHITECT

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bedrooms as well as the landing are carpeted. The family bathroom features a roll-top claw-foot bath and gorgeous patchwork-inspired tiles that were also used in the ensuite.

So do they have any words of wisdom for anyone about to commence a similar project? "I'd recommend you double and triple check the conditions in the planning permission, and check and re-check the legalities; missing something can cost down the line!" advises Mark. "And ask yourself how well do you really know your builder... Having said that it'll be one of the best experiences you'll ever have!"

Jodie and Mark share a favourite part of the whole project – "the day the windows went in

in the old cottage." The installation of the windows seemed to mark the change from a building site to a prospective home.

"But I've loved so much of it!" says Mark, "there was a lot of soul-searching and digging deep, but often I find myself sitting on the top stair looking out of the windows at the garden, and thinking – wow – it's been worth it!"

So now it's complete, are they wanting to do it all again? "We'd manage a build for someone else, but we were so emotionally invested in this we don't think we'd build our own family home again." And with such a beautiful, personalised home, why would they ever want to move? ■

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cuttings which, when combined with the BLANCO SELECT, creates a convenient and simple waste disposal system. The COLLECTIS 6 S is available in a plethora of colours to suit all kitchen schemes.

www.blanco.co.uk

Create a dream kitchen with Keller



Keller's latest creation, Terracotta Dreaming, offers homeowners the opportunity to enjoy an elegant kitchen with all manner of trendy accessories; an example is pictured here with open shelving and copper highlights such as lighting or bowls. The muted truffle shade offers a calming and relaxed feel; however, with plenty of colour options available from Keller, homeowners can choose a colour that suits their personality, should they desire something more bold and daring.

The units can be fitted alongside each other to create a simple galley kitchen, perfect for showing off a kitchen in a smaller area, or fitted together as one big unit to create a kitchen island.

www.kellerkitchens.com

Königstone's sleek Cotton Star quartz stone



Königstone's latest worktop colour, Cotton Star, instantly brightens up the kitchen. Part of the stunning Königquartz range, Cotton Star is durable, highly scratch, stain and heat-resistant, has a consistent design as it is engineered stone and is easy to maintain. Homeowners can simply wipe the surface with a damp cloth after use to keep the worktop sparkling. The off-white speckled shade complements any colour scheme and style. For a minimal vibe, homeowners can pair Cotton Star with muted coloured

cabinets and allow the speckled surface to catch the light to give a splash of something different. For homeowners with a bolder kitchen, a worktop in Cotton Star can be blended with bright or daring coloured cabinetry.

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Make a house a home with Königstone



Königstone, renowned for durable, high-quality worktops, has added a new colour to the popular Königquartz portfolio: Monaco. The pale grey shade incorporates a marble-like effect with a natural-looking grain to create a unique and stylish surface. As quartz is one of the toughest natural substances in the world, it is a great material for a kitchen or bathroom worktop. The beauty of new colour, Monaco, is that homeowners can brighten the look of their kitchen with a lighter shade, without the

fears of stains or scratches. Whether its chopping beetroot for a salad or making a smoothie the homeowner doesn't need to worry about any mess as the quartz is highly scratch-, stain- and heat-resistant.

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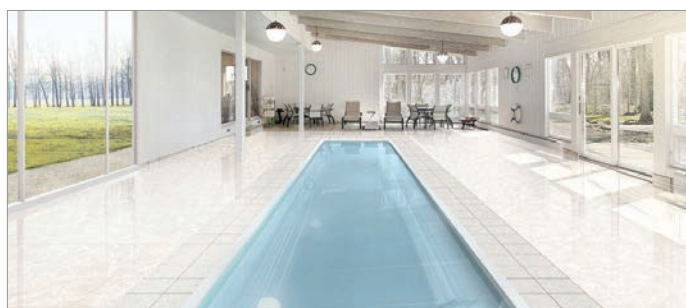
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Pushing the boundaries of home entertainment

New innovations in technology designed to mitigate the risks in wet environments are pushing the boundaries of where AV equipment can be enjoyed in the home. Will Uttley of ProofVision looks at the latest products

Over the past two decades, developments in digital technology and the rise of the internet have had a phenomenal impact on our lives, changing the very fabric of our society as well as how we live day-to-day.

In recent years, smart home solutions have changed the face of domestic living, controlling everything from energy and security to audio-visual and home entertainment and offering a level of comfort, control and efficiency that meets the requirements of 21st century life.

DIGITAL TAKEOVER

In the 1970s, having a TV in the living room was somewhat of a luxury; fast-forward to today and nothing is off

limits in terms of audio-visual installations. From bathrooms to gardens, TVs and integrated sound systems are popping up in the most unlikely of locations, adding a luxury element to renovation projects and new builds.

This trend is part of a wider movement towards home automation, a market which is expected to grow rapidly over the next five years. Despite initial resistance, most people now have a better understanding of internet-connected technology and around 30 per cent are planning to purchase a smart home device over the next two years, according to PwC. Unsurprisingly, young homeowners are the biggest adopters; around 59 per cent of them have already invested in smart entertainment.

INTELLIGENT BATHROOMS

The bathroom might not be the first room you think of when implementing smart technology into your home, however, a quick Google search will bring you up to speed on the sheer volume of smart tech designed specifically for the bathroom. Once a purely functional space, these innovative gadgets have transformed the bathroom into an integrated hub of connectivity, comfort and entertainment.

With advanced user recognition on the rise, homeowners' expectations are changing. A personalised bathroom experience is becoming the norm, with pre-programmed settings to control vanity lighting, music and shower features such as temperature, timing and



flow – some will even mist your favourite essential oils while you wash.

Japanese-style smart toilets are becoming more commonplace, offering heated seats, night lights, bidet functions and automated cleaning cycles, increasing hygiene and efficiency while reducing the domestic workload.

BINGE-WATCH WHILE YOU BATHE

To meet growing demand for luxury bathroom installations, waterproof audio-visual solutions have been developed which allow homeowners to enjoy modern creature-comforts – the latest must-watch series or a calming playlist – while relaxing in a hot bubble bath.

However, getting it right in terms of technical specification is key. Home automation systems and integrated AV devices are a long-term investment. You need to make sure any products you buy are fit for purpose, future-proof, and ideally incorporated into the bathroom design from the outset.

TECHNICAL CONSIDERATIONS

For optimum performance in this challenging environment, certain technical features are essential. Water resistance is clearly up there with the most important features, so look for a high IP rating on all appliances. This stands for Ingress Protection and indicates the degree of protection from solid particles and moisture. For a bathroom TV, a rating of IP65 will ensure your TV is dust tight and able to withstand water projected from a nozzle. However, for a waterproof remote control a higher rating of IP67 is

necessary, which will ensure protection even when fully submerged.

Aside from safety issues, your bathroom TV should have all the capabilities of a regular top-of-the-range TV: 4K Ultra HD and built-in amplifiers are available on some models now for the full cinematic experience. But even if you're planning a more discreet installation, picture and sound quality should still be a top priority.

DESIGN FEATURE

When it comes to luxurious bathroom design, less is definitely more. Minimalism is the order of the day and a professional AV installer will be able to help you achieve this by running cables through walls and behind tiling to ensure a smooth finish.

In terms of product features, look for ultra slim models that can be fitted flush with the wall, heated LED screens to prevent misting and a mirror finish; this way, the TV is disguised and functional when not in use.

CONNECTIVITY & INTEGRATION

Even if you're not planning a full home automation system now, it might be something you think about in the future. If your bathroom TV is to stand the test of time, it should feature extra connectivity through IR and RS232 over IP control. This allows the TV to be integrated with leading home automation systems, such as Crestron and Control4, and when you're not watching, you can monitor your home security or manage other devices around the house. In addition to this, your TV should have all the usual spec: smart TV

Once a purely functional space, innovative gadgets have transformed the bathroom into an integrated hub of connectivity, comfort and entertainment

capabilities, built-in FreeView and a range of ports, including HDMI, USB and VGA.

Don't overlook your bathroom – it has huge potential when it comes to introducing integrated smart technologies into your home. With the installation of a personalised network of smart services, your trip to the bathroom can be an 'experience' rather than a necessity. Innovative AV technology combining cutting-edge technical specification with a water-resistant shell adds the icing on the cake, bringing an element of luxury to the comfort of your own home.

Will Uttley is managing director of ProofVision

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