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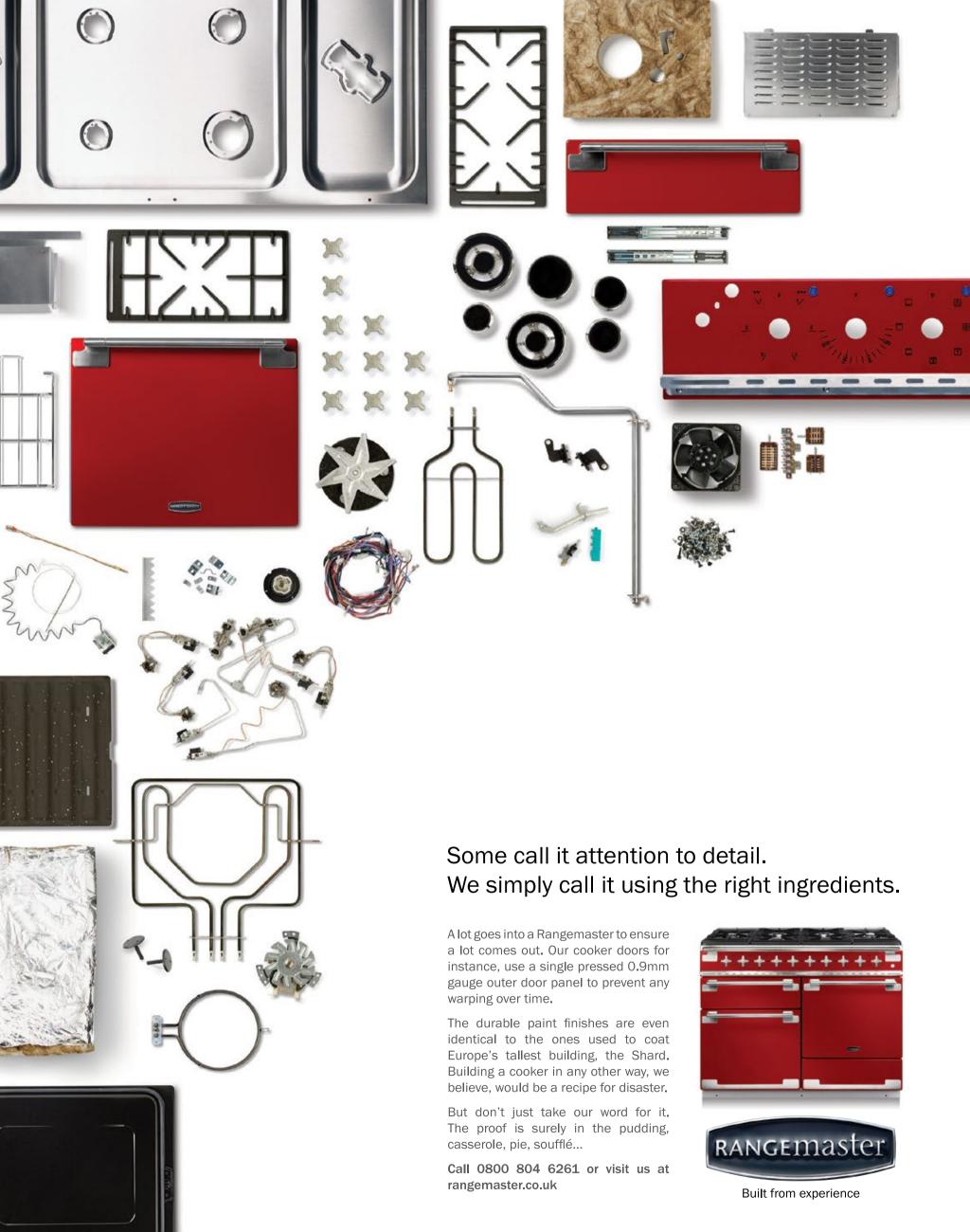
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Homebuilding & Renovating

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EVERY MONTH

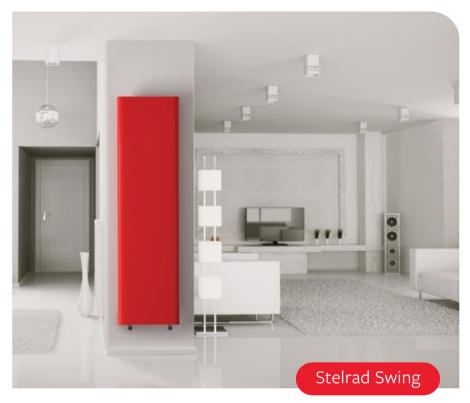
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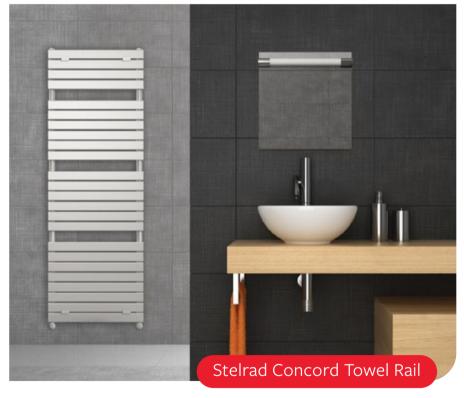


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WELCOME APRIL 2015

Your Magazine Just Got Even Better

Jason Orme is the Editor of Homebuilding & Renovating

or those of you who are regular readers, a new look for your favourite magazine is always a bit unsettling. Will it be the same? What have they done? Well, let me explain. Think of it simply as us giving you the best ideas on what to build, and showing how best to build it.

The 'what to build' – brilliant house design guides that will transform your plans, coupled with dozens of ideas, tips on getting it to look right, the very best readers' homes and much more – can be found in our **Home** section.

We've added more expert advice (the 'how to build it') too — more of the independent insight, costs, analysis and guidance you need when carrying out a project. All of this is now in the new **Building & Renovating** section — delivered by experts who have done it already, many times, and can pass on their expe-



rience and knowledge to you. Also, each month we'll look at a specific project type in **Toolkit**: this month, bungalows.

I hope you like it. In addition to being its Editor, I'm also *Homebuilding & Renovating's* biggest fan. And as those of us doing building work to our homes know, change isn't always for the worse — it can be the best thing ever.

@ aJasonPOrme editor@homebuilding.co.uk

Jason Orme is currently rebuilding a 1960s house (described as 'Frank Lloyd Wrong' by HB&R's Contributing Editor Mark Brinkley) and is an experienced self-builder and renovator

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UPFRONT

DESIGN DIGEST

The latest house design ideas and news from around the world



Two of a Kind

A side-on view of Pichler's Mirror Houses reveals the similarity in style and materials, while the form of the two units take on slightly varied widths and heights, highlighting the subtle differences between them



Mirror Mirror

FÖRSTBERG ARKITEKTUR OCH FORMGIVNING; C/O PETER PICHLER ARCHITECTURE

Contemporary architecture doesn't come much more interesting than architect Peter Pichler's Mirror Houses in Bolzano, Italy. Located in an apple orchard surrounded by the South Tyrol Dolomites mountain range, the two houses float on a base above the ground with cantilevering terraces offering views of the impressive landscape. To the east, a glass façade with curvilinear lines gently moves down into the black aluminium shell of the structure (as shown above), while mirrored glass on the west façade reflects the surrounding panorama — making the homes almost invisible. The interiors meanwhile reflect modern Italian style. What's more, you can hire the Mirror Houses out as luxury holiday accommodation. For more information visit mirror-houses.com



Stripped Back in Sweden

The pared-down trend remains rife in Sweden if Faf Architects' latest project is anything to go by. Representing raw materials at their finest, the modest 130m² home in Linköping is divided into two gabled volumes and clad in corrugated aluminium sheets which reference agricultural buildings. The interiors continue the barely there concept with the timber frame left exposed and open to the rafters to create a dramatic sense of space. Plywood-lined walls offer texture and a sense of warmth against the pale furnishings, while the polished concrete floors are a further nod to industrial style.





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UPFRONT

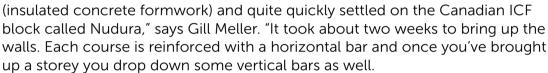
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Your projects, views, moans and more

"This was a Big Milestone for us"

We catch up with River Cottage head chef Gill Meller, who's renovating and extending a former summerhouse near Lyme Regis with his wife Alice

"The architect had originally specified the extension walls to be built out of breeze blocks, but I was keen to use ICF



The concrete pour is quite a nerve-racking day in the build schedule. It's crucial to prop the walls up sufficiently as they come under a huge amount of pressure when you start filling them up with concrete. This was a big milestone for us because it meant we could fix the big steels into place which will support all the structural timbers that make up the roof — it only took about an hour to put them all in place."

For more updates on Gill's project, visit homebuilding.co.uk/classof14



HB&R's Facebook Talks Bi-Folds

These days bi-folds seem to be the door of choice for those wanting to create a contemporary space that brings the outside in. But these modern doors can often be a contentious addition to more traditional-style homes. On Facebook we asked you whether you felt that modern bi-folds ruined the character of period-style homes. Lynn B said: "No, it's completely in keeping with a modern twist." While on the other hand, Mark C argued: "I think they are a fashion fad that will prove impractical long term in our climate." What's your view?

Find us on social media and have your say at homebuilding.co.uk/social-media

Your Views

Trees and Foundations

I learned an expensive mistake many years ago, when I approached a tree issue from a structural engineering standpoint. I bought a plot with tall leylandii along one side, hard to the boundary but on the neighbour's land. I was, however, refused permission to cut the trees down to 6ft.

When I came to build, I excavated 1m-deep trenches for standard strip concrete foundations, and could see the tree roots were thin and shallow. Having concreted the trenches, full fill, I was then told by the building control inspector to obtain an engineer's report on the trees. This, of course, suggested 2m-deep foundations along that one side — I consequently had to dig up the concrete poured, dig down further, and re-fill — adding thousands to the cost. If I had instead taken advice from a qualified arborologist I would have learned that leylandii have a low water uptake, meaning that my 1m footings were safe — such advice could have saved me thousands! Such a foundation issue is therefore, in the first instance, a tree problem not a construction problem.

Craig Mckay, Grimsby

Pre-Application Delays

When we applied for pre-application advice to check if we could build what we want on the plot we are planning to buy, we were told there was no planning officer available to look at our application. It's taken six weeks for an officer to be assigned to our case and it will be another three weeks before we hear anything from him. Apart from being aggrieved for paying for a service and then being told to wait, this has put our schedule seriously behind.

Martin Keen, via email

Email us at homebuilding@centaur.co.uk »









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UPFRONT

MATERIALS

Latest looks for finishes and fittings



The Enamel Mendip 8 in Claret from Mendip Stoves

The Mendip 8 stove in Claret is finished in a three-stage coating of enamel for a deep shine, and a clean and durable finish, and features central air control. POA.



Tall Unit Kitchen Storage from Doca UK

Perfect for storage and concealing appliances, this Tall Unit with 'Parma' pocket doors from Doca UK features shelves, pan drawers and space for appliances, in a white GUM lacquer finish (available in a range of other finishes and veneers too). POA.



Marley Eternit's Handmade Canterbury Tiles

Using traditional techniques, the new handmade Canterbury tiles from Marley Eternit come in three colours – Chailey, Loxleigh and Burford – with their own handmade range of fittings. POA.









Royo Group's Play Range from Frontline Bathrooms

The Play range of bathroom furniture from Royo Group (available in the UK from Frontline Bathrooms) allows you to mix and match drawers and units to create an individual concept in your bathroom. The range is available in Sand Brown, Blue Gloss and Gloss White (shown). POA.



JELD-WEN's Elegance Casement Windows

These flush-sash casement windows from JELD-WEN's Elegance range measure 588(W) x1,038(H)mm and are energy rated A to B. The windows are made of engineered softwood timber and come with Hardex polished chrome handles as standard. They are available in a range of colour finishes and start from £434.

- **1.** Smeg's single-lever Imola water-saving mixer tap costs around £264;
- **2.** InSinkErator UK's 3N1 tap provides filtered boiling, hot and cold water. POA;
- **3.** Perrin & Rowe's Hand Rinse tap allows water to be diverted at the push of a button. POA.



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Homebuilding & Renovating Show NEC, BIRMINGHAM 26-29 MARCH 2015 STAND D161

UPFRONT

THE LATEST

Events, news, tips and ephemera



Local Authority Combines Planning and Building Departments

With a view to providing residents of the local community with much sought-after advice on their house projects, a new proposal has been approved by Cheshire East Council (whose office is shown ABOVE) to launch a building and planning support consultancy.

The new scheme, which will be the first of its kind for a local authority, is designed to offer homeowners in the area with the opportunity to seek planning and/or building advice in order to get their projects underway, acting as a one-stop-shop for services such as Building Control, land charges, property searches, street name and numbering, and planning advice and support.

Not only will the new consultancy tackle the increased demand for planning advice – something which remains a problem for many homeowners looking to build or renovate their homes across the country – but by preventing people from seeking these services elsewhere, the new scheme is also estimated to save the council up to as much as £269,000 — with a net benefit of £1.161million.

Approval Granted for Europe's First FSC-Certified House

A new building project in Denmark constructed from 100 per cent wood and other recycled materials has become the first home in Europe to be approved for Forest Stewardship Council (FSC) certification from Woodmark, the Soil Association's forestry and wood certification scheme.

The importance of using FSC-certified wood not only ensures the preservation of historically significant woodland, but is desirable for those wishing to improve their carbon footprint — a draw for Signe Wenneberg whose modest new 72m² home has been recognised for its attention to responsible sourcing, being built with Douglas fir, oak, beech, spruce and pine, among other species, and even featuring FSC-certified wood throughout the interiors, including the kitchen, doors, floors and walls. What's more, wood wool has been used to insulate the property.

"This is the first building project in Europe with such a high percentage of FSC-certified wood," says James Evans, Woodmark's Senior Certification Officer. "FSC certification guarantees that wood comes from sustainable sources and ensures building projects are able to prove environmental sustainability. We hope this will inspire more homebuilders to embrace FSC-certified homes as a route to sustainable living."



New Finance Scheme Set to Boost Custom Building

A new scheme targeted at homeowners wishing to gain access to funding for their self-build or custom build projects has been launched by Capita Asset Services and Lloyds Banking Group.

Supported by Countrywide, the new Custom and Self Build Scheme (CSB) has been designed to make obtaining mortgages for self-build and custom build projects easier, while helping local authorities to meet the Government's Right to Build agenda and tackle the need for new homes.

Under the CSB scheme, those wishing to self or custom build in one of the participating areas will be able to apply for a mortgage and, once agreed, a deposit of as little as 5 per cent will be paid to the local authority who will fund the cost of the build to completion. A mortgage will then be provided by the lender to cover the build costs, which will be fully repaid to the local authority once the house has been built. The homeowner will then have a standard mortgage on the completed property.

UPFRONT

The Event for People With Projects

If you've never been before, make sure you visit this year's National Homebuilding & Renovating Show in March at the NEC

hinking about improving, renovating or building your own home? Then a day at this year's National Homebuilding & Renovating Show is the best way to get your plans off on the right track. The Show is well known for being the best day out for self-builders and home improvers, and features a mix of advice and information from leading experts, the opportunity to talk through your plans with the professionals and, of course, the chance to sample and source materials and services for your new home, all under one roof.

Are you seeking independent advice on choosing a heating system, without a sales pitch? Our seminar programme will enlighten you. Looking for new windows? The Show brings together Britain's biggest collection of window suppliers. Want to find out more about planning permission? Talk to our experts in the Planning Clinic about your individual situation.

The Show, which runs from 26-29 March at the NEC in Birmingham, is a brilliant way to gather information, get ideas and inspiration, and meet suppliers. Here's what you can expect:

DULUX DESIGN SERVICE

Dulux's professional interior designers will be on hand to offer free one-to-one consultations to advise you on interior design and colour schemes, wall coverings and furnishings to add the wow-factor.

FREE ADVICE FROM INDEPENDENT EXPERTS

Bring along your questions, plans, moans and ideas to our free 15-minute consultations get inspiration and solutions for your project from independent experts from Homebuilding & Renovating magazine.



MEETTHE EXPERTS

The Homebuilding & Renovating Show is packed with experts waiting to help you with your project



Sally Tagg



Charlie Luxton



Jason Orme



Matt James



Chris Reeves



Michael Holmes





David Snell

Bob Branscombe



Julia Kendell





Mark Brinkley



Hugo Tugman



THE SHOW HOME

Walk through this impressive two storey stripped-back installation to see exactly how a house is constructed — the show home is brought to you by Oakworth Homes & Benchmark Selfbuild. See more on page 22.



PLANNING CLINIC

Problem with planning approval? Get free planning advice on your scheme from an expert at Foxley Tagg Planning at our Planning Clinic. 15-minute slots are available on a first-come, first-served basis.



ASK THE ARCHITECT

Fancy some free professional advice on your plans? Need design inspiration to improve your home? Bring your floorplans along to our Ask the Architect stand and enjoy a 15-minute consultation with a RIBA architect.





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From Drawing Board to This Year's Show Home

There's a fascinating story behind the brilliant show house at this March's Homebuilding & Renovating Show at the NEC — and where it will end up

he Show Home has always been the focal point of the National Homebuilding & Renovating Show. It showed visitors not only what it was like to live in a beautiful bespoke timber frame home but, uniquely, was 'stripped back' to show would-be self-builders what would lie under the bonnet of their new home.

This year's Show Home, another partnership between Oakworth Homes and Benchmark Selfbuild (part of the Oakworth Group), is no exception — but with added personality. For when Andrew and Ruth Vivian visit the Show on the opening day, Thursday 26 March, they will be stepping inside their new home — for the first time. For this year's Show Home at the Homebuilding & Renovating Show is designed and built for them.

"We first met Andrew and Ruth at the London Homebuilding & Renovating Show in 2013," says Oakworth MD John Capper. "They had recently sold their family farm and bought a rather plain dormer bungalow, which just so happened to be situated on the fringes of a beautiful West Sussex village, with wonderful views over the South Downs and beyond. Both Andrew and Ruth, now retired, wanted to fulfil a lifelong dream of building their own home and this plot seemed perfect for them."

The Story of a Build

Andrew and Ruth came across the Oakworth/Benchmark stand at the London Homebuilding & Renovating Show and, while they liked the look of the designs in the portfolio, were impressed with the bespoke design service on offer. "We just hit it off and

Below: Previous Homebuilding & Renovating Show Homes

Oakworth & Benchmark have collaborated on previous Show Homes — always stripped back so visitors can see how a house is really built











ANDREW & RUTH VIVIAN
Are the couple whose house
(above) is being used for
the Show Home at this
year's NEC Homebuilding & Renovating Show.

Right: Andrew & Ruth talk to this year's Show Home Sponsor Brookeswood Joinery's Neal Stephenson about their window designs

"We found Benchmark at the Homebuilding & Renovating Show at Olympia with an initial design we immediately liked. Early priorities included a warm, eco friendly design that took advantage of modern technology, but looked totally 'at home' on a wonderful site. Above all, it needed to be a house that was built of materials that were complementary to the lovely, ancient village in which it was to be located. We also wanted a fun project for our 70s! The project took on another dimension when we saw that 'our house' will be at the Show."



OAKW RTH





enjoyed the relationship, from identifying early priorities through to the finer details."

Mark Twynam, Benchmark Selfbuild MD, says "Although we do offer a portfolio of designs, we work as closely with the client as we can to give them a bespoke design to their own specification. It is, after all their dream home — and unique to them. Therefore when detailed design work began in January 2014, the most important thing was for us to understand Andrew and Ruth's vision for their site." The site is in a Conservation Area and it was clear that any proposal should be sympathetic to the adjoining period properties. Andrew and Ruth loved the initial design which was granted planning approval, without objections, in July 2014.

The Design Becomes a Reality

And now, time to get started on site. Benchmark Selfbuild works hand in hand with

Oakworth Homes to design and supply the timber frame structure. As part of the service offered the partnership also work in conjunction with approved suppliers. One such company is this year's Show Home Sponsor, Brookeswood Joinery. Neal Stevenson of Brookeswood worked hard with Andrew and Ruth to design a bespoke range of high quality joinery to include beautiful oak casement windows, bi-fold doors and an oak staircase.



Above: The Site

The site on which Andrew and Ruth are building their highly insulated timber frame home is currently occupied by a 1930s bungalow and is within a National Park

Above: The Finished Vision

Andrew and Ruth are hoping to achieve a modern take on traditional style for their interiors, with the benefits of light open layouts

Show Time

With off-site manufacture almost complete, Oakworth and Benchmark are bringing along the home to the National Homebuilding & Renovating Show at the NEC (March 26-29). "We're hoping that visitors will be able to experience what it's like in a high-spec, bespoke, insulated timber frame home," says John Capper. "They'll have a chance to look behind the scenes at how a house is assembled and be inspired by some amazing spaces. Not only that, they will get the opportunity to see what someone else specified for their dream home!

"My vision for our Show Home is that it should be both inspirational and educational. The house is stripped back to show components of our product partners and show self-builders how a home really works. However to be able to see the finished design in its full glory, cannot help but be an emotional experience. After all, building your own home is the culmination of years of not only planning but dreaming too!"

CALL US FOR MORE INFORMATION: OAKWORTH HOMES 0114 288 9554; BENCHMARK SELFBUILD: 0800 060 7920

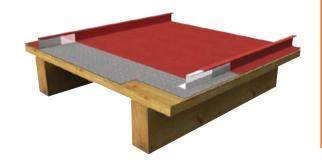


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This section: Everything you need to create a brilliant individual home — from ideas, expert guides and designers' advice to other people's inspiring projects



Homes

Self-build, Barn Style P.26



Homes

A 21st-Century Farmhouse P.74



Design Ideas:

Achieving Architectural 'Wow' P.40

Plus: → A Traditional Oak Frame Self-build P.50

- ⇒ Designing a Master Bedroom P.67
- **➡ Five-Minute Expert: Cooker Hoods ₽.70**
- **≫→ Staircase Design Ideas** P.88





HOMES BARN-STYLE SELF-BUILD



Below: Kitchen

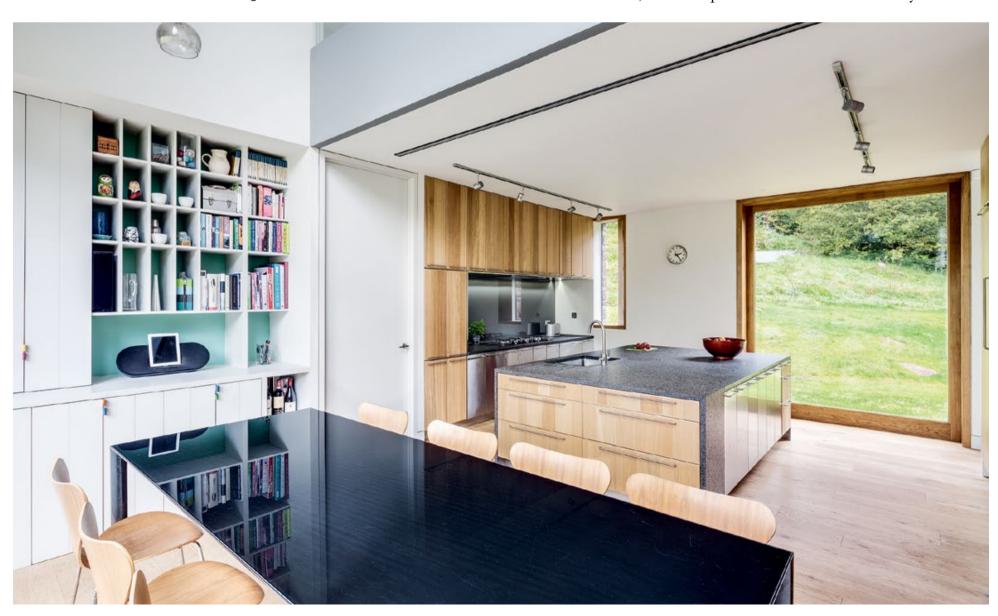
Martin and Kelly managed to bring in the whole kitchen, including everything from worktops and appliances to units and taps, for under £12,000. A series of 300mm IKEA end units line up to form the cabinetry. The granite worktop (from Bristol Marble and Granite) on the large and very impressive 1,600mm island has a leathered finish to give it a softer, matt feel

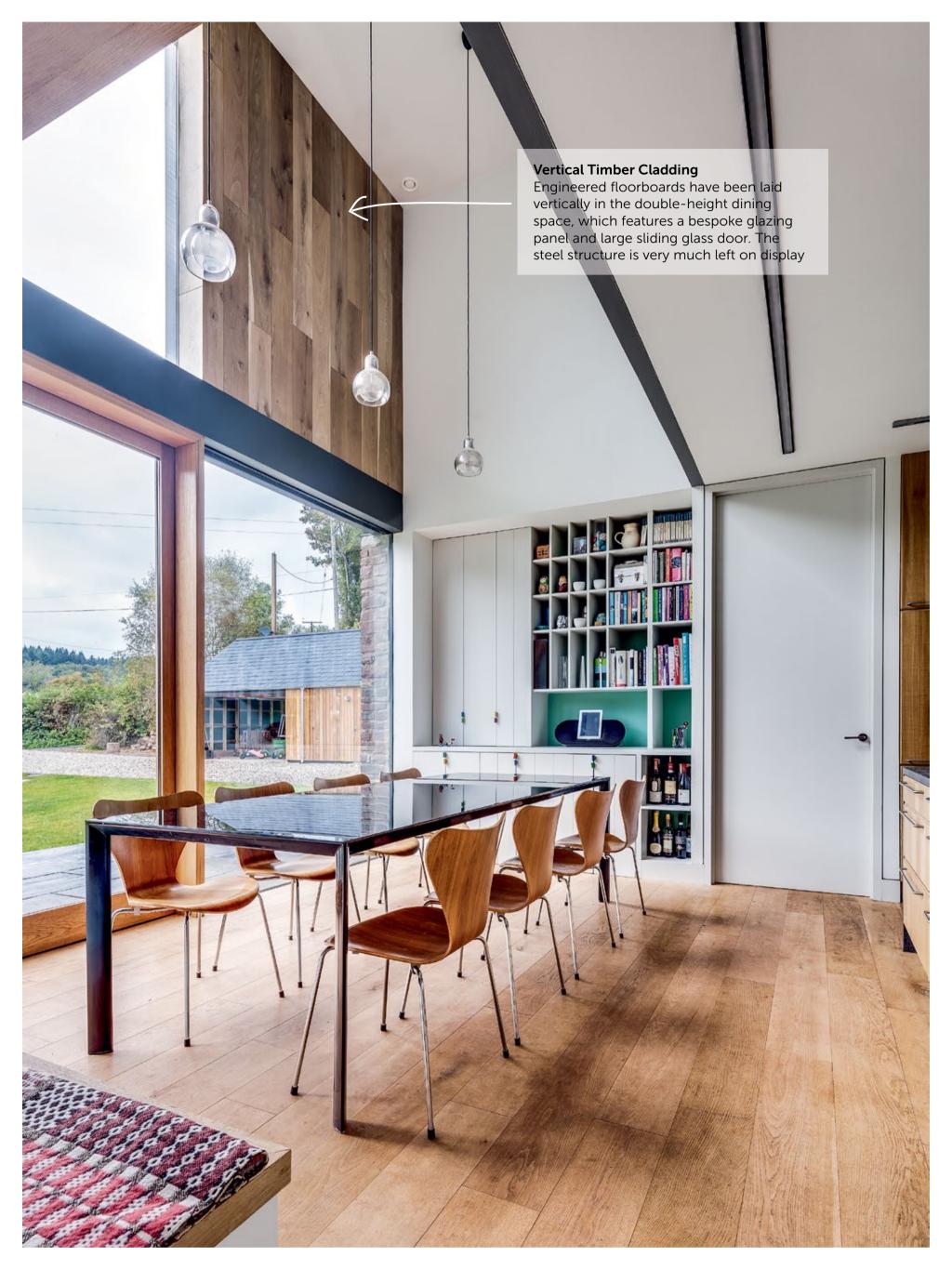
THE QUICK READ

- ➡ Martin and Kelly self-built a new barn-style family home using a steel frame, selected for its ability to include large spans and big glass openings
- → Natural building materials such as stone and timber were chosen for the finishes to let the scheme better complement its rural surroundings
- ⇒ Despite its 'Grand Designs' appearance and considerable architectural 'wow', the home is modestly scaled (at 240m²) and highly cost-effective, coming in at just £1,450/m²

he architect/owner project (an architect designing a project for themselves) is usually a recipe for disaster — a chance for the frustrated designer, finally unfettered after all those years of having to compromise on pent-up ideas due to clients who rather inconveniently want what they want, is free to unleash all sorts of bonkers features and 'clever' concepts on a one-off house. With nobody to say no to them, the house ends up a statement calling card and all too often a total write-off.

Well — Martin Hall and Kelly Bednarczyk's house is the exact opposite of all that. It is, without fear of exaggeration, a truly exceptional testament to how high-quality, thoughtful design can meet well-considered, sensitive specification and result in a truly









family-orientated home that is both of a human scale – the house is 240m² – and yet truly awe-inspiring.

The happy compromises that Martin and Kelly, who run the award-winning Chepstow architectural firm that takes their surnames (and who won a Daily Telegraph Homebuilding & Renovating Award a couple of years ago), contended with were the fact that this had to work as a family home and at the same time, as Martin admits: "We didn't have a massive budget. This had to make sense for us." If there is one lesson you should take away from this house it is that high-quality design features needn't be an additional cost. Good spaces can be good value and the house is full of 'ordinary' materials being used in extraordinary ways.

The Design Concept

"We were looking to move," begins Martin, "and discovered agent's details for a 1960s bungalow on a rocky, one-acre site. What we loved about it was that despite being at the bottom of the valley it got plenty of sun and the views were fantastic. The bungalow was really sold as a doer-upper but we took it on realising it could be totally transformed."

And totally transform the plot they did. Keeping the existing house as a temporary home, Martin and Kelly managed to convince the planners to let them build a new house and reorientate it through 90° so that not only did it enjoy the views but the new rectangular form could be on an east-west axis. Martin's theory is that while everyone is really obsessed by building houses north-south, building them across the east/west axis allows bedrooms to be positioned to enjoy the morning sun.

Left: Living Room

Bespoke oak sliding windows from Advance Joinery connect the living room, situated at one end of the rectangular floorplan, directly to the garden



HOMES BARN-STYLE SELF-BUILD

Form and Scale

What came next was a feeling of what Martin calls: "Being drawn to the no-nonsense solidity of the barn conversion." The simple grid pattern of the building made it relatively straightforward to design, built around a steel frame structure with, in effect, a chequer pattern series of blanks and solids (windows and cladding). Indeed the steel frame is one of the house's unsung victories, and Martin and Kelly have added some galvanized steel channel sections to express the structural steel frame that lies directly beneath, as otherwise it would have been completely hidden in the insulated build-up.

One of the great magical touches about this house is its scale — it's almost a trick of the eye in many ways. Because of its positioning surrounded by woodland and because of its window positions and 'domestic' feel it looks, from a distance (and in a photographic shoot) actually quite small. Yet up close it's in fact quite imposing and impressive — the flat frontage (save for a beautiful chunky chimney) and large glazing gives a real sense of 'wow.' Indeed the chimney is perhaps Martin and Kelly's favourite part of the house — it anchors the building to the ground and even incorporates an outdoor fireplace.

Maximising 'Wow' on a Budget

"Actually, this house was all about maximising architectural wow for the money," says Kelly (the budget was £350,000, coming out at £1,450/m²). Inside, the one-room deep floorplan (it makes it sound small but the depth is 7m or so) allows plenty of light to penetrate — there simply aren't any dark areas. The plan is simple. To the left, as you enter, is the family kitchen and dining space \Rightarrow





Above: Master Bedroom

Wardrobes were built in to the walls in the master bedroom. Because of the volumetric height of the space, the wardrobes help to give the external walls a greater sense of thickness and solidity. "Otherwise they might have appeared a little flimsy," says Kelly. Blinds are recessed into the walls

Left: Family Bathroom

Vertically biased fixed glazing from Velfac provides natural light without affecting privacy. The tiles are from Porcelanosa, with sanitaryware from Duravit and taps from Crosswater





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HOMES BARN-STYLE SELF-BUILD

Right: Side Elevation

The stone was cropped and chamfered on one of the window edges and cut with a disc cutter to give it a purposely smooth finish in order to contrast with the more rural finish elsewhere. Note how the window is off centre, but the right-hand side of the window edge is in line with the apex of the roof

(with a utility and boot space); to the right, after the downstairs loo and plentiful built-in storage, a fantastic living space. Upstairs, a couple of children's bedrooms and a void overlooking the dining table – that 'wow' that Kelly talked about is definitely achieved here – and a fantastic vaulted master bedroom suite that, thanks to the one-room deep layout, enjoys a triple aspect. It's simple, smart and hugely attractive. With 2.9m ceiling heights throughout, the relatively modest footprint works very hard to give a sense of space.

Kelly calls it: "A robust family home." There is plenty of storage to deal with the rigours of having two young children around and is built with Martin and Kelly's family at the forefront. Yet, because Martin and Kelly are such talented designers, they have managed to incorporate all of these details and features which, almost without thinking about it, improve livability — all on a scale that isn't beyond many people setting out to build their own home. Above all, the home is a statement for the power of good design. •

FIND OUT MORE OVER THE PAGE

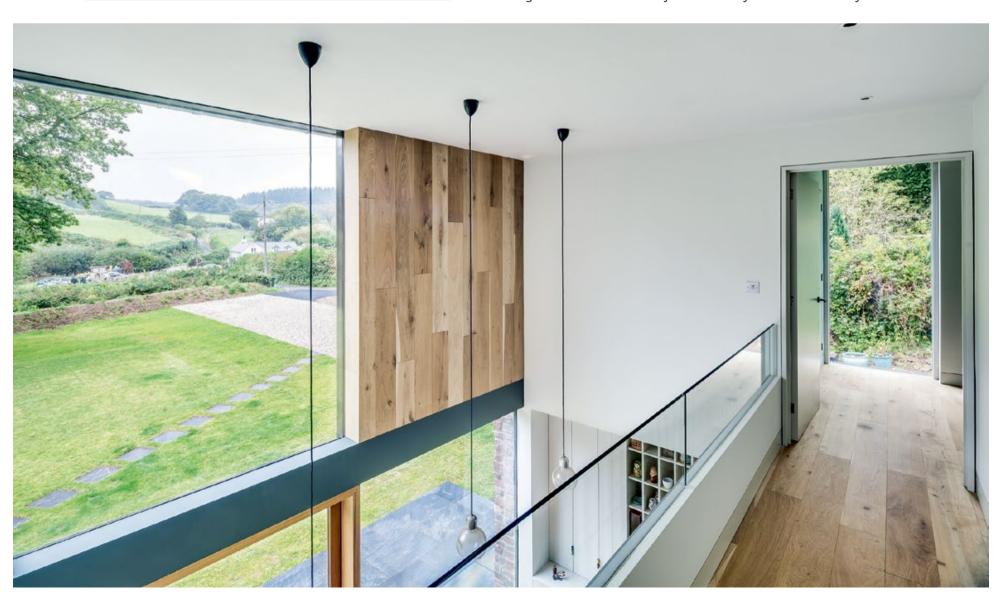
■→ Project Details

» Steel Frame: The Benefits

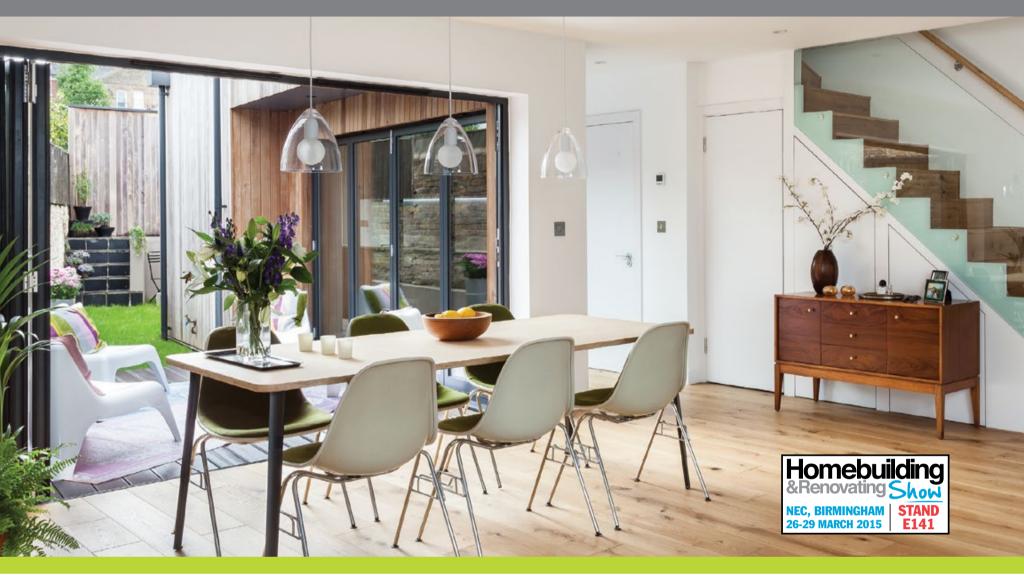


Below: The Beauty of Steel

The landing is supported by long steel beams and enjoys views over the double-height dining space. Martin and Kelly decided to leave the steel beams exposed (in the front elevation, ABOVE) to give the home an even greater sense of solidity and honesty about its barn-style structure



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HOMES BARN-STYLE SELF-BUILD

The Project

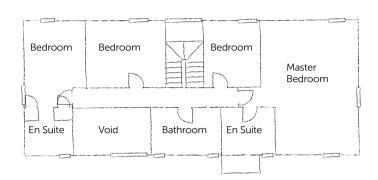


Martin Hall & Kelly Bednarczyk Owners & **Architects**

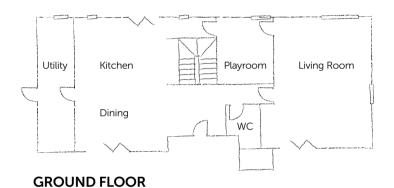
THE HOMEOWNER'S VIEW

With this house we aimed to create a family home that has a very strong affinity with its rural setting. The design used simple, confident massing combined with a contemporary use of regional materials — the stone was quarried three miles away. The relative privacy of the house's rural location enabled generous glazing to be employed that illuminates the living spaces with natural light as well as framing views of the surrounding landscape, which feels like it passes through the home.

The floorplan (RIGHT) is based on a simple barn design prioritising larger rather than more rooms. On the ground floor, the large kitchen/dining space and living room bookend the layout — linked by a playroom that can be closed off or opened up as required. Storage - essential with a young family is everywhere. Upstairs, we decided to sacrifice a bedroom for the void over the double-height dining space below. Even so, there are four generoussized bedrooms.



FIRST FLOOR



COSTS FOR THE STRUCTURE

Steel supply and £22,000 erect (including epoxy paint coatings) £3,000 150mm blockwork £32,000 175mm stonework £1,500 100mm blockwork External studwork £13,000 Floor joists £10,500 Roof structure £7,000 **Total** £89,000

£350,000)

SUPPLIERS

Architect Hall + Bednarczyk Architects...... 01291 627777 hallbednarczyk.com Main contractor MacCormac Construction 01873 851712 Structural engineer Azimuth Structural Engineering01452 561000 **Energy consultant** Paul Thornton Design......01594 832300 **Ecology consultant** Abbey Sanders Ecology 07962 172453 Heating and plumbing Alan Reynolds Heating 01873 857483 Oak sliding windows and stairs Advance Joinery...... 01981 241071

Windows Velfac 01223 897100 Steel frame Remnant Engineering Kitchen island and worktops Bristol Marble & Granite 0117 965 6565 Kitchen sinks and taps Franke......0161 436 6280 Kitchen appliances Smeg. 0844 557 9907 Kitchen units IKEA...... 020 3645 0000 **Sanitaryware** Duravit..........0845 500 7787 Bathroom taps and showers Crosswater......0845 873 8840 **Bathroom tiles** Bathroom Solutions (Bristol) 01225 335664

PROJECT TIMELINE

(Total Build Cost

Sep 12 Excavations; installation of reinforcement; foundations Oct 12 Erection of steel frame; installation of beam and block ground floor; infill studwork to external walls; first floor joists Nov 12 Blockwork to gable ends; installation of attic floor joists; roof purlins; insulation; breather membrane and battens to roof

Dec 12 Stonework; chimney; roof slating Jan 13 Insulation to external walls; breather membrane and battens; windows Feb 13 Ground floor insulation; first fix plumbing and electrics; screed to ground floor; external stonework; chimney Mar 13 External stonework; chimney; plasterboarding; door linings; stairs

work, chimney capping; tiling; plastering May 13 Installation of oak sliding windows; frameless glazing; external doors; installation of kitchen and utility room; internal tiling

Jun 13 Decorations; second fix joinery; electrics and plumbing

Jul 13 Installation of worktops; timber flooring; decorations; patios

Apr 13 Timber cladding; external stone-



HOMES BARN-STYLE SELF-BUILD

Steel Frame: The Benefits

Martin and Kelly's choice of steel construction should appeal to more self-builders and renovators. Jason Orme explains why



Above & Below: Steel Construction

In a matter of days, Martin and Kelly's house took shape. Note the need for external studwork and blockwork infills (and, for interest, the existing bungalow they bought in the main image)









MARTIN & KELLY'S AWARD-WINNING DESIGN

→ A Striking Self-Build

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teel frame is a common form of construction in the commercial sector and it was this that was behind Martin Hall and Kelly Bednarczyk's decision to use it on their home. "Modern barns, with their large spans and open spaces, are always made of steel, and so it seemed a natural option for us," Martin explains. "We didn't want to recreate a traditional 19th-century type of barn with stone walls, and so steel made sense."

Almost all new homes, and many extension and renovation projects, have steel in them in some form – usually RSJs (rolled steel joists) to allow strong support above openings – yet timber frames, and in particular masonry blocks, account for the overwhelming majority of new-build construction types. But given Martin and Kelly's design, which demanded large spans and large areas of glass, steel – with its rigidity and strength enabling thinner profiles for the same load-bearing capacity – was the only system that could have worked. As Martin puts it: "Steel enables you to do architectural things that you wouldn't be able to do otherwise; it was also competitive on cost with the poorer alternatives."

The process of using steel as the structural system for a new home or extension is a little more bespoke and localised than, say, modern timber frame packages (the result is similar to the traditional open panel 'stick-built' timber frames). Martin and Kelly used a structural engineer to produce calculations (not just on loads but wind-bracing and how it would deal with thermal bridging issues) as well as member sizings and gridlines before engaging with a local steel fabricator who produced fabrication drawings and then went on to manufacture the frame.

"One of the best parts of using steel is that it is so quick," says Martin. "The whole frame went up in just three days which gives you an incomparably quick sense of the scale of the finished home."

The Build Process

The process itself on site was quite straightforward. Foundations are built in the usual way, at which stage the holding-down bolts are cast into the concrete. The base plates are then installed and the frame erected (by the fabrication company). Martin and Kelly opted for a beam and block ground floor with a timber joist first floor.

Steel is not without its challenges and, compared to the full coverage supplied by masonry and SIPs (structural insulated panel) walling systems, is decidedly minimal. You'll still need to build infill panels, and thermal bridging is a complex issue that needs serious design consideration. The route is absolutely anti-'package' and you will be rather off-piste when it comes to suppliers and, perhaps, Building Control officers. Yet for designs that demand large open spans across rooms, and large amounts of glass – which sounds like many contemporary homes – then in many ways it is the most sensible option available.



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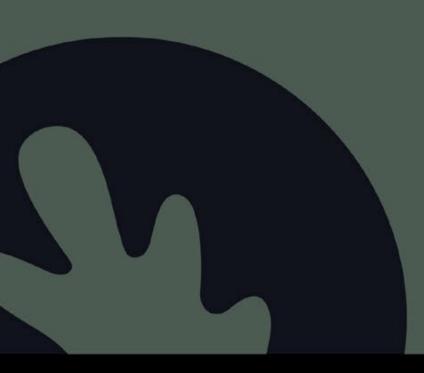
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8 Easy Ways to Achieve Architectural Wow'

All too often self-built and renovated homes end up as bland as off-the-shelf developer houses. Charlie Luxton reveals some simple ideas to make yours special



STAIRS NEED SPACE

Don't simply shoehorn the staircase in. They can be mean, narrow and tucked away (as per developer homes) or have drama and excitement. Stairs are always an expense but with some clever design and not a lot of extra money you can transform stairs from a perfunctory necessity into a show-stopper. I tend to put stairs in a double-height space to accentuate the connection between levels and therefore creating additional interest.



CHARLIE LUXTON
Charlie is the director of fourperson practice Charlie Luxton
Design and a well-known
broadcaster, currently presenting
'Building the Dream' on More4

esigning a house is a complicated business. There are an almost incalculable number of decisions and variables that shape the design process and, therefore, your home. Well-designed unique homes are desirable, lovely to live in and ultimately more valuable than off-the-shelf alternatives. But all too often self-builders and those carrying out major renovations end up – thanks to constraints of space and budget, a designer with limited 'vision' or simply timidity about anything out of the ordinary – with a bland home too.

To avoid being sucked into bland you need a good design early on — and you need to stick to it. I believe there are a few straightforward ideas that will help you (and your designer) create a home that punches well above its weight.

RAISE THE CEILING

One of the things that sets the bland mood in a new developer house is measly ceiling heights. Almost invariably 2.4m, and in many cases less, such ceiling heights create a slight feeling of claustrophobia and give wider, longer rooms an unsettling letterbox feel. The increasing invasion of downlights, smoke detectors, air ducts and speakers that litter ceilings only increase this top-heavy feel. The good news is that high ceilings make small rooms feel generous and are an absolute must for large spaces. Big rooms with 2.4m ceilings feel squat. You can easily attain that feeling of grandeur by designing ceiling heights of at least 2.7m and preferably 2.9m. The extra materials used will add cost to the build but it's worth it for a luxurious feeling of space.





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A DRESSING ROOM

A master bedroom suite increasingly helps define a home's value — the people using these rooms are paying for the house, after all. Dressing rooms are a real luxury and don't have to use much extra space — a bedroom with less clutter can be smaller and still feel spacious.

>>> See more on master bedroom design on page 67

: OAKWRIGHTS; TOP FAR RIGHT: ANDREW LEE; ABOVE: SHUTTERSTOCK

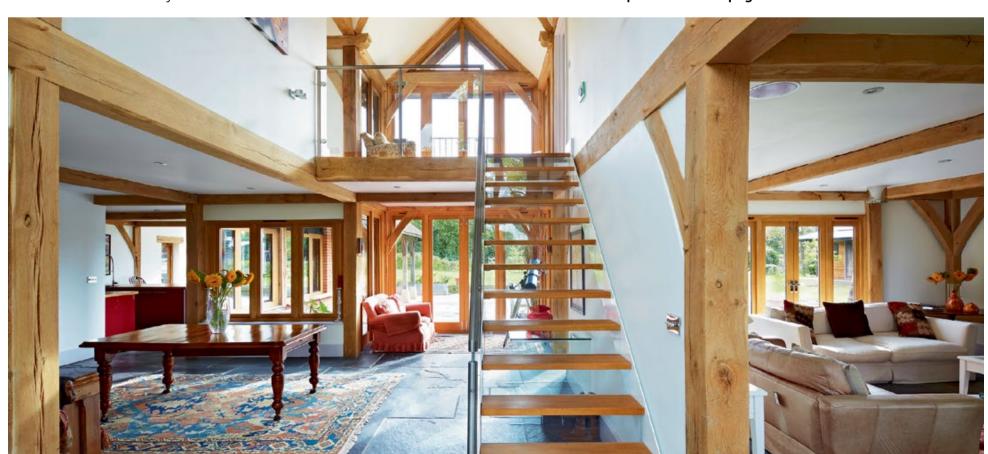
A LARGER HALLWAY

The impression you get when first entering a building sets the tone of a home. There is nothing worse than cramming into a small hall when you arrive at a house, so always be generous with your entrance. You only have to try and shuffle your family/friends in and out the door with bags, coats, dogs and wellies a few times before you understand how crucial the hall is.



A BIG FRONT DOOR As a central part of the arrival experience, the front door is always worth spending time and money on to get right. Much like the hall, it sets the tone. Go wide and go tall.

>>> See more on pivot doors on page 63



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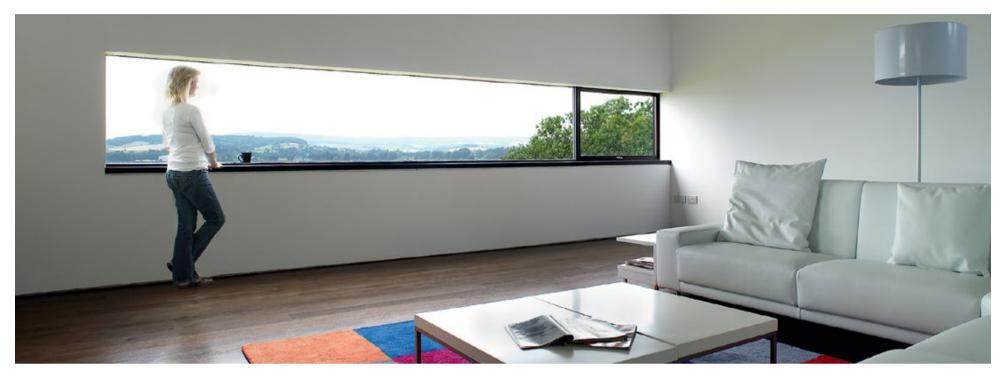


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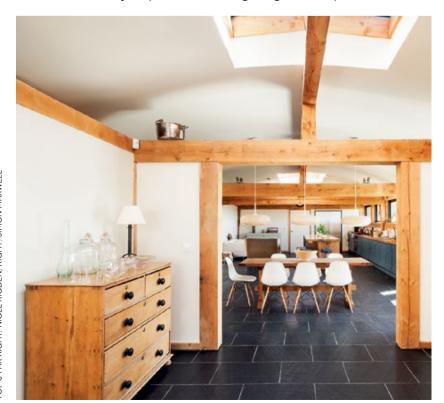


POSITION WINDOWS FROM INSIDE OUT

Far too often windows are placed to look symmetrical and neat on an elevation. The real function of windows is to create views and bring in light — not as a decoration for the exterior. I tend to start by placing windows from the inside out and then try to make the elevation work.

NO MORE TINY DOORS

Why do people stick to bland standard-sized doors when a large door blank and an extra set of hinges cost just a few extra pounds? Don't just go wider, go taller as it draws the eye up, accentuating height and space.





DOUBLE HEIGHT

There is huge pressure on self-builders and renovators – especially with the growing trend in valuing houses using floor area – to do away with double-height spaces. This is a mistake — double heights don't waste space, they make space. In many ways it is the perception of space rather than a measurement that defines how a home feels. I use every opportunity to connect the different levels in a building, with views and light creating interesting shapes, light effects and a dynamic experience.

FOP & FAR RIGHT: NIGEL RIGDEN; RIGHT: SIMON MAXWELL



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Modern Extensions

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Belsize Architects

A two storey addition with copper-tinted glazing transforms a listed Georgian home



Beam Cottage Architect

A glazed link offers a transition between this period cottage and its modern rear



AR Design Studio

Frameless glazing sits alongside period brickwork in this stunning project



Ellis Williams Architects

A convex two storey extension with glass façade wraps around this listed water tower



Self-designed

A dramatic first floor extension has turned this bungalow into a chalet-style home



Joanna Gray Design

A single storey extension and remodel lends to this home's Californian style



Penny Shankar Architects

From bungalow to brilliant — this timber frame first floor addition boasts wow-factor



Matt Maisuria Architects

This impressive modern addition almost doubles the size of the existing home



Riach Architects

A stylish basement extension offers open plan family space to a Victorian terrace



Matt Maisuria Architects

A boring bungalow becomes a Modernist masterpiece thanks to a two storey addition



Coffey Architects

Shards of glass lend to the futuristic feel of this flat-roof addition to a Victorian home



AR Design Studio

A series of boxes – one grey rendered, one timber clad – offers a splash of modern style



Andrew McAvoy Chartered Architect

This double-height Cor-ten steel-clad wedge offers striking contrast to a granite steading



Room Architects

A larch and stainless steel wing offers a dynamic contrast to this period farmhouse



PAD Studio

A timber frame box linked via glazed panels renders this 1970s home unrecognisable



Emrys Architects

This functional, frameless glazed link connects three buildings to form one home



Dan Brill Architects

A post-war property expanded thanks to a unique timber-clad corridor of bedrooms



Belsize Architects

This glazed box proves that extensions do not have to be huge to make a visual impact



51% Studios

Adding interest, this multistorey timber tower sits above a new light-filled base

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THE QUICK READ

- Michael and Katie Walker have built an oak frame home on a plot carved from Michael's parents' garden. Border Oak crafted and erected the oak frame, and finished the build to watertight stage; Michael took over from this point
- **⇒→** By taking on the project management, tasks such as sanding and finishing the oak frame, and bartering on material costs, the couple estimate that they saved £50,000 on the build cost
- **>>>** The couple recommend a healthy contingency fund their fund was quickly swallowed up by unexpected groundwork costs

or Michael Walker, the dream was always to move back to the place where he grew up, to a sleepy village in the heart of the Worcestershire countryside. But there was just one snag — finding a property that he could afford to buy was an issue.

After living close to Worcester city centre with his partner Katie, but increasingly desperate to escape to the country, Michael was inspired to build his own home after watching an episode of *Build*, *Buy*, *Restore* (presented by *Homebuilding & Renovating's* Michael Holmes). "The couple on the program were in exactly the same situation as us: they wanted to live in the countryside but couldn't afford to buy a house," says Michael. "They even looked at a plot just up the road from ours." And with that, the dye was cast.





Fortunately for Michael, his parents still live in the family home where he and his siblings were raised — and that same house just happened to have a rather large back garden. "After many discussions, we were given the go-ahead to use part of the garden to build a new home," he says.

An Oak Frame Build

"Ever since the idea of self-building entered my mind, I knew that I wanted to build a timber frame house, which suited the traditional village setting," continues Michael. Fortunately, his job as a graphic designer meant that he was able to sketch out a rudimental design, which he then took to Border Oak in Herefordshire, who specialise in green oak frame houses. "The team were great," says Michael, "they were really flexible and were happy to just make the house watertight, rather than do the whole build, which was important for us as we needed to be able to do a lot of the work ourselves in order to remain within budget."

With the design finalised, it was submitted to the planning department and also needed to pass the local parish council's strict guidelines. The house proved popular with all parties and work started on site in March 2012.

Once the footings were in place, Border Oak erected the oak frame and completed all of the external work, installing SIPs (structural insulated panels) and then exterior cladding around the frame, and adding the roof. From this point it was up to the Walkers to push the build along. Michael acted as project manager, taking on the task of booking the various contractors needed to install services on site and to plan and organise the first and second fix work.

Above & Left: Kitchen/Diner

The green oak frame aside, timber plays a big role in the interiors of this new home. Engineered wood flooring, oak veneered internal doors and oak worktops (the latter were both sourced from Howdens) feature in the kitchen. Michael specified the flooring and worktops unfinished in order to finish them with the same matt finish Osmo Polyx oil used for the interior oak frame — this gives continuity to all the timber. (Teak oil was used for the exterior oak). A lime green Smeg fridge freezer and pendant lights from the Electric Centre bring a bold splash of colour to this room

He also set himself the somewhat arduous job of sanding and then acid treating the oak. "Getting the frame finished was the longest process of the build. Every section needed to be sanded, treated and stained, which felt like it took forever. By the end of it I had gone through four electric sanders because they just kept burning out." It was all worth it though — Michael believes that by doing so much of the work himself, around £50,000 was shaved off the total build cost.

"I actually made the decision to leave my job for the last six months of the build. This was because it meant that I could do more work on the house, saving on labour costs," he says. "At one point our budget was starting to dwindle and we wanted to make sure we could finish the build to the level that we wanted. It did take over our lives though — we were on site every night and weekend, but it was definitely worth it in the end."

Ensuring the wood's colour continuity became a real labour of love for Michael, too. The engineered oak flooring and oak kitchen worktops were specified untreated so that they could be stained to match the frame. "I know it sounds obsessive, but I wanted everything to be perfectly finished. Building your own home is a once-in-a-lifetime opportunity, so it had to be right."

The Importance of a Contingency Fund

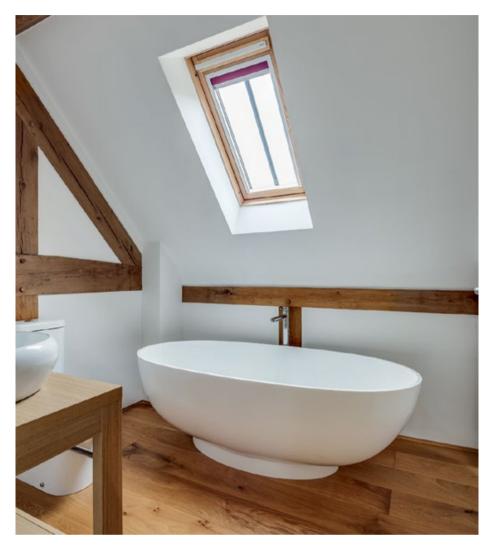
As soon as the couple hit ground, they hit an unexpected expense—the builders realised that the footings needed to be dug down a metre further than planned. The added time and resources hadn't been accounted for in the original budget and quickly ate into Michael and Katie's precious contingency fund.

Exposing the Oak Frame "This project illustrates the use of oak framing only where it benefits - downstairs the frame is minimal, functional and considered," says Border Oak's Merry Albright. "The biggest impact upstairs comes from allowing the oak frame to do what it does best by articulating the full vaulted height, giving the bedroom volume, architectural interest and an element of surprise."

Right: Master Bedroom

The vaulted ceiling makes for an impressive master bedroom, which also features an en suite (tucked beneath the roof of the weatherboarded section of the house). Two further bedrooms on the first floor share the family bathroom, where the exposed oak frame also makes an impressive appearance









"The major piece of advice I would offer to anyone is to be sure that you have a good contingency in place before you build. We had already set some money aside and that wasn't enough, as so much money went into the ground before the first brick had even been laid," advises Michael. "Luckily we were able to borrow a bit extra, but you really do need a buffer.

"Another area that cost more than expected was the driveway and lowering the pavement. As we had to use the council's contractors, we couldn't get lots of quotes so it ended up costing us around £4,000 all-in-all — far higher than we had anticipated, but it had to be done. Coupled with the extra money needed for the footings at the start of the build, if we hadn't had some spare money, we wouldn't have been able to finish everything to the standard that we have."

Small Design Changes Make a Big Impact

The couple tweaked the original design during the build. Instead of a window in the kitchen, they opened the space up with French doors, making the most of the stunning countryside scenery beyond. "The kitchen is probably my favourite room," says Katie. "We always end up gathering around the island to chat when friends come over and we're so pleased that we chose the French doors."

After visiting another oak frame home nearby, Katie also made the rather expensive decision to take the master bedroom ceiling right up to the rafters, exposing the beautiful frame. This involved adding extra insulation between the rafters and preparing and finishing the exposed oak frame, but the vaulted ceiling turned out to be a good decision — the room is now light and airy, with the additional height giving the illusion of extra space.

Another space-saving solution was installing underfloor heating throughout the property — doing away with the need for wall-cluttering radiators. With the whole village off-mains gas, Michael and Katie opted for an air-source heat pump, which powers the underfloor heating system throughout. There is also a woodburning stove in the living room that is so effective it warms the whole house.

All of the space in the house has been meticulously planned out, with each room providing a comfortable living space for the couple. A large utility room just off the kitchen houses all of the necessary appliances, as well as a walk-in shower room – ideal for when guests come to stay – and a further entrance. This room sits within the weatherboarded section of the build; it appears to be an 'extension', as if the cottage has evolved and been added to over time.

Not one to rest on his laurels, Michael has been firmly bitten by the building bug and has set his sights on adding a garage next to the house. "I loved building the house, so I'm excited to make a start on the garage. We're also in the process of submitting the plans for a conservatory, which will give us even more space," he says. "We don't plan on moving any time soon, but if we did we would certainly consider building again. It's all about having the confidence to self-build in the first place, but we would recommend it to anyone."

SEE MORE ON THIS HOME ONLINE

Watch HB&R's interview with Michael and Katie
Visit homebuildingawards.co.uk/pea-cottage



Far left: Living Room

French doors make the most of the countryside views, but also lend to the traditional cottage aesthetic of the living room (FAR LEFT); the opening will also allow a conservatory to be added with some ease in the future. A large inglenookstyle fireplace emulates the cottage feel and is home to a woodburning stove. Elsewhere, the large hall (TOP LEFT) is light-filled thanks for a strategically placed window above the oak staircase; the oak engineered flooring continues on the first floor in the family bathroom (TOP FAR LEFT)



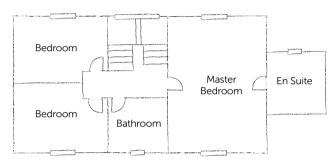
The Project



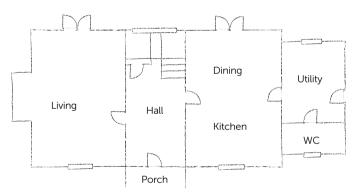
Michael & Katie Walker Homeowners

THE HOMEOWNERS' VIEW

Having looked at other layouts, we decided we wanted a grand entrance to include a large oak staircase, and a centrally placed kitchen was also important to us — this is the heart of the house. In addition, we wanted a large utility area and a decentsized en suite (this is directly above the utility), so having the weatherboarded section was a must.



FIRST FLOOR



GROUND FLOOR



Merry Albright Border Oak

THE OAK FRAME COMPANY'S VIEW

When building to a restricted footprint there are various 'tricks' that can help maximise the sense of space, and Michael and Katie's house is an excellent example of this. For example, the floorplan is deliberately simple — based around a central hall (with staircase and storage) which is generous enough to be welcoming and practical. Either side are two double-aspect main rooms – a kitchen and sitting room – which are proportional (which makes the space feel larger). You can also see from one end of the cottage to the other, which gives the impression of length and 'journey'. Outside, the distinctive, overscaled oak porch is both attractive and practical; it's big enough for storing wellies and logs but also adds to 'reception' space.

Adjacent to the kitchen is an independent weatherboarded section (without any oak frame), which works incredibly hard for the small footprint. It is typically where you would locate all the essentials such as the boiler, fuse box, washing machine etc. - household necessities that would really spoil the appearance of the main rooms.

PROJECT TIMELINE

Mar 12 Footings dug

Apr 12 Brickwork completed

May 12 Oak frame erected

Jun - Jul 12 Roof completed; first fix

electrics and plumbing

Aug - Sep 12 Build stops as couple marry

Oct - Nov 12 Preparation and acid

treating the oak frame

Dec 12 - Jan 13 Second fix, including

kitchen and bathrooms

Feb 13 Final decoration

Mar 13 Moved into the completed house

COST BREAKDOWN

House built to watertight	£139,000
stage, including oak frame	
and footings	
Driveway, entrance and	£10,000
additional footings	
Sewage treatment plant	£2,000
Air-source heat pump	£14,000
and underfloor heating	
Electrics and plumbing	£10,000
Kitchen and utility	£10,000
Bathroom, en suite and	£5,000
ground floor shower room	
Guttering and drainage	£2,000
Oak flooring and carpets	£4,000
Decorating and tool hire	£4,000
Total	£200,000

SUPPLIERS

Build to watertight stage, including oak frame supply and erection

Border Oakborderoak.com Sanitaryware Bathstore.. bathstore.com Oak veneered interior doors and worktops Howdens......howdens.com **Engineered wood flooring**

Green Apple Flooring 0800 002 9525 Worcester Bosch air-source heat pump BoilerCare (Worcester)...... 01905 621717

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JG Speedfit johnguest.com/speedfit **Bio-Pure Sewage Treatment Plant** We Build It Ltd.....webuildit-ltd.co.uk



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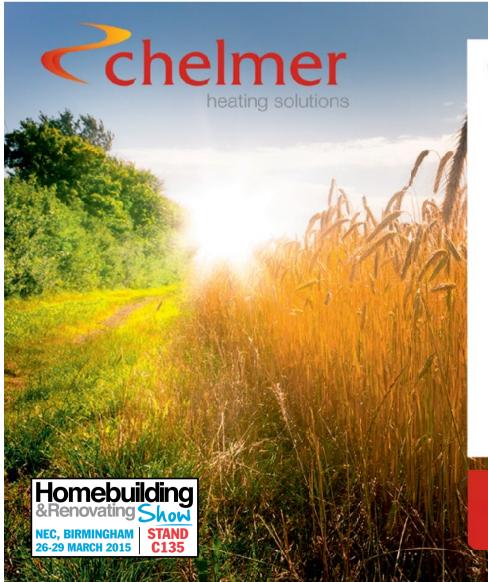












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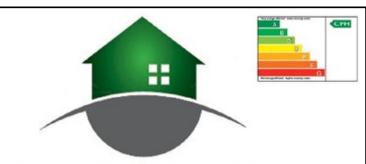
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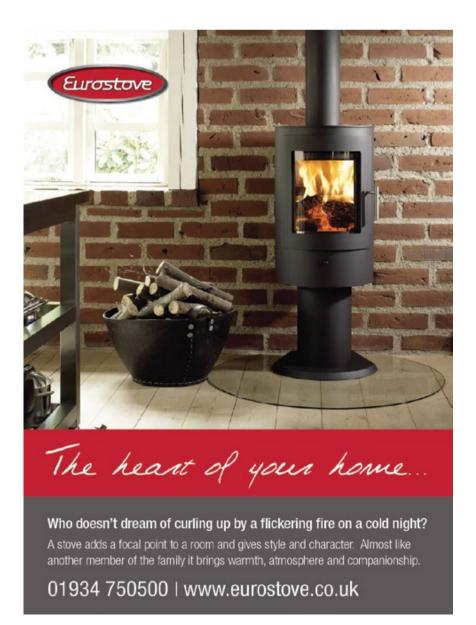
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s the element that tends to be responsible for anchoring the overall look of the entire façade of most homes, the front door has a big responsibility in creating a super stylish first impression.

In contemporary home design it is perhaps even harder to get the front door right; unlike period properties, there is no particular era to refer back to. However, an oversized pivot door opens up all sorts of possibilities in design terms. Not only can some really striking results be achieved with oversized doors, but they also make it possible for the door to be of much heavier construction than standard hinged doors — so steel and impressive great hunks of solid hardwood suddenly become viable options.

How Big Can They Be?

Pivot doors can be pretty much as big as you like, and certainly far bigger than a standard door. Urban Front supply doors up to 1,500mm wide and 3,000mm tall — in fact they have to be a minimum of 1,000mm wide to work.

"It's essential to keep in mind that a pivot hinge makes the actual opening size of a door smaller," says Urban Front designer Elizabeth Assaf. "Despite a door being, say, 1,200mm wide on a pivot, the actual opening size would be approximately 950mm. This is essential to bear in mind if you have to meet any Building Regulations with your front door."

Why Have One?

They make a very definite statement and tend to be much more suitable for contemporary homes than standard off-the-shelf doors, where the size limitations can mean things begin to look a little off proportionally.

"The real benefit of pivot hinges is the fact that you can have a very large, heavy door on them," explains Elizabeth Assaf. "Nowadays, I think a lot more people would rather have one large door instead of double doors because it looks much more contemporary and you do away with a 'slave' door you don't really need. Pivot doors also look great in glass curtain walling which is very popular these days on more contemporary building."

Safety

Those with young children should be aware that along with the usual worry of fingers getting trapped in any door, pivot doors do by their very nature have a small space between the door edge and the frame at the pivot side — a potential 'crush zone' if you like. However, with sensible parental guidance and avoiding swinging the door shut on children or pets when the door is open, problems can quite easily be avoided.

What Do They Cost?

The cost will very much depend on the material you opt for, as well as the size of the door — but pivot doors are not for those on a tiny budget. Doors from Urban Front start from £3,250 plus VAT for a pivot door in a painted finish. You also need to factor in installation costs. That said, your front door is a key design statement.

The real benefit... is that you can have a large, heavy door

HOW PIVOT DOORS WORK

Top pivot detail

1.112

View from above

244

Lower pivot detail

- Much like a traditional side-hinged door, the pivot hinges are placed at the top and bottom of the door, around 200mm from the edge of the door.
- ➡ The frame is fitted into the opening and then the door is secured to the frame with the hinges — some, such as those from Urban Front, come with finger-safe devices to avoid fingers becoming trapped in the opening.
- ➡ Although pivots come fitted, with just the frame being required to be secured into place, it tends to be best to leave the actual installation to the professionals or manufacturers as the doors are much heavier than standard doors to manoeuvre.
- Due to the nature of this type of door, weather seals can be a little trickier than with standard doors, as it is hard to get a continuous seal along the top and bottom. However, you can get doors with drop-down seals that are activated when the door closes. Still, it's wise to fit some form of porch over the door, particularly in exposed locations.

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INTERIOR ARCHITECTURE

Getting Master Bedrooms Right

From planning the space to its position in the house, Natasha Brinsmead explains how to design the perfect master bedroom — plus three experts share their top tips







For multi-tasking master suites to work – those that combine a sleeping area, en suite, dressing room and perhaps seating area – each zone should be clearly defined. Changes in floor or ceiling height are ideal, but if this is not possible then lighting, half-stud walls, wall colour changes or even different flooring types work well to separate these spaces. In rooms where the bathroom facilities are open plan to the sleeping area, separated only by partition walls, good extraction is key.

Avoid entering directly into the bedroom space, where possible.By adjusting the floorplan or adding in partition walls to create a

small lobby at the entrance of the master bedroom, not only will this increase the sense of privacy and avoid being viewed directly from the landing, but will also provide space for laundry baskets or an entrance to an en suite and/or dressing room — not to mention will add a grand sense of arrival to the main bedroom space.

>>> Designers on Master Suites



Hugo Tugman
is the founder of
Architect Your
Home and Interior
Your Home
architectyourhome.com

"Consider an Open Plan"

In too many cases, the rush to shoehorn in an en suite has both ruined a lovely bedroom and created a cramped, impractical bathroom — so approach these spaces with care.

If you are thinking of a loft conversion master suite, be careful not to squeeze the shower into an area where the ceiling slopes down below head height. It's a classic mistake as floorplans of proposed loft areas often imply much more space than the reality provides.

Rather than three small separate rooms, consider having part or even the whole suite open plan. Some people loathe the idea, but boutique hotels have blazed this trail and one combined suite space can often give a much more generous, spacious and light-filled result.





Matt White is the man behind award-winning Matt Architecture mattarchitecture .com

"Location is Key"

Have a good think about the location on the floorplan. I've worked for a few families where the mother has intuitively felt that the master suite should be between the children's bedrooms and the front door — the protective instinct at its most primal. Can you also get to the kitchen easily in the morning to make a cup of tea?

Remember that this space is mostly about routine — walk through it in your head for each user. Where is the bed? Does one of you always have to walk around the bed to the en suite? Does one of you get up before the other — can you shower and dress without waking your sleeping partner? If you have kids then who's closest to the kids' rooms — does that mean that they'll be the one who's always getting up in the night to check on them?



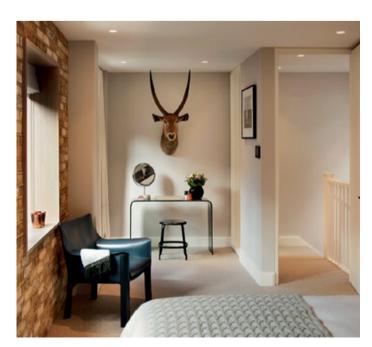


Thomas Griem is an interior architect at TG Studio tg-studio.co.uk

"Bed Size and Position is Key"

To create a master suite you will need three spaces: you should allow a minimum of 3x3m for the bedroom, 2.4x1.6m for the dressing room and 2.4x1.4m for the bathroom. Usually, an existing double bedroom is big enough to be divided into two of these areas, with an adjacent room used for the third.

The placement – and type – of bed is the most important aspect of the bedroom and this is a personal choice. In a master suite the bed should be big to justify the ancillary spaces of dressing room and en suite bathroom. To give it grandeur, I like using a wallpaper behind the bed head or a significant piece of art.











Locating your bedroom at the corner of the house means you can benefit from windows on two sides — a great idea both for crossventilation but also to draw in plenty of natural light and make the most of any views you might have.

Aim for your lighting scheme to highlight each separate area of your master bedroom and layer different types of lighting, to work either alone or in combination with one another. Ambient, accent and task lighting each have a role to play; use ambient – or background lighting – in the form of pendants or downlights, task lighting such as side lamps for reading or over mirrors, and accent lighting to highlight areas or features of note.

MORE MASTER BEDROOM PLANNING IDEAS

*** Master Bedroom Design Gallery

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BUYING MATERIALS

Cooker Hoods: The Five-Minute Expert

A quick guide to becoming an expert in kitchen extraction, plus five of the best new designs. By Natasha Brinsmead





Which Width?

If your hob measures up to 750mm wide, a cooker hood width of 900mm is advised, and if it measures up to 900mm wide, a width of 1,200mm is best. Hobs fall into two categories: 'cold', where the heat is generated in the pan, such as induction hobs, and 'hot', with a high-temperature flame, such as gas hobs. A cold hob works best with a hood that is wider than the hob as the vapours disperse over a wider area.

Ducting

You should be aware that most cooker hoods are not supplied with ducting — however, this is essential if you are opting for an extraction model. Ducting can usually be sourced from the supplier, but most DIY shops also sell kits. For the best airflow,

choose one with a 150mm diameter as opposed to 120mm, and opt for rigid ducting over flexible as the ridges in flexible ducting can slightly restrict the airflow. If investing in a downdraught extractor (one that rises from the worktop), ducting will run under the flooring or along the back of the units.

Extraction Rates

All cooker hoods have an extraction rate, and you must opt for a hood that allows for 12 changes of air per hour. To calculate this, work out the volume of the kitchen in cubic metres then multiply it by 12. For example, if your kitchen is $5m \log 3m$ wide and 2.5m high, multiply the length x width x height to find the cubic capacity (which in this case is $37.5m^3$). The extraction rate would therefore be $12 \times 37.5m^3$, which is $450m^3$.



- **1.** The D99L20N0GB AirDeLuxe chimney hood from Neff costs from £1,200 (neff.co.uk)
- **2.** Miele's DA2900 ceiling extractor communicates with the hob to ensure exact extraction. It costs around £2,400 (miele.com)
- **3.** Building an extractor hood into an existing chimney breast, as seen in this project by Kit Stone, is a popular and easy way to duct to outside. POA (kitstone.co.uk)
- **4.** The KDD90VX downdraught extractor from Smeg fits flush with the worktop when not in use. It costs £1,400 (smeguk.com)
- **5.** The CAST Line cooker hood by architect and designer Patricia Urquiola for Beko costs £879 (beko.co.uk)





How High?

Your hood should be placed at the recommended distance of between 650mm (for electric) or 750mm (for gas) above your hob. Do check your ceiling height. Although most wall-mounted chimney hoods and island hoods are adjustable, this is not always sufficient — and remember, standard cooker hoods will not work over kitchen islands.

To Extract or Recirculate?

Installing an extraction model (using ducting) is the best way to eliminate steam and smells. Don't forget to factor in the additional costs of ducting and installation. If ducting to an external wall is impossible, you'll need a recirculation model. They contain both grease and charcoal filters that remove the smells and smoke

from the air before releasing it back into the room. They do tend to be cheaper to buy and easier to install, but on the negative side, some of the steam can be released back into the kitchen, the charcoal filter has be replaced annually, and they tend to have a decreased airflow rate as the filter sits in front of the motor. $\ensuremath{\mathbf{0}}$

FOR MORE COOKER HOOD SUPPLIERS See page 247 or visit homebuilding.co.uk/directory

Double Vision

Spanning a period of 10 years, the Grant family's restoration and extension project has resulted in a home that retains the integrity of the original farmhouse, yet boasts the best of contemporary design and 21st-century living

Words: Caroline Ednie Photography: David Barbour









Steel Cladding Weathering steel – Corten is the trademark name for this group of steel alloys – naturally oxidises to form a stable rust finish — this means the material requires no finish when installed, and is low-maintenance throughout its life. The material references this house's agricultural past

THE QUICK READ

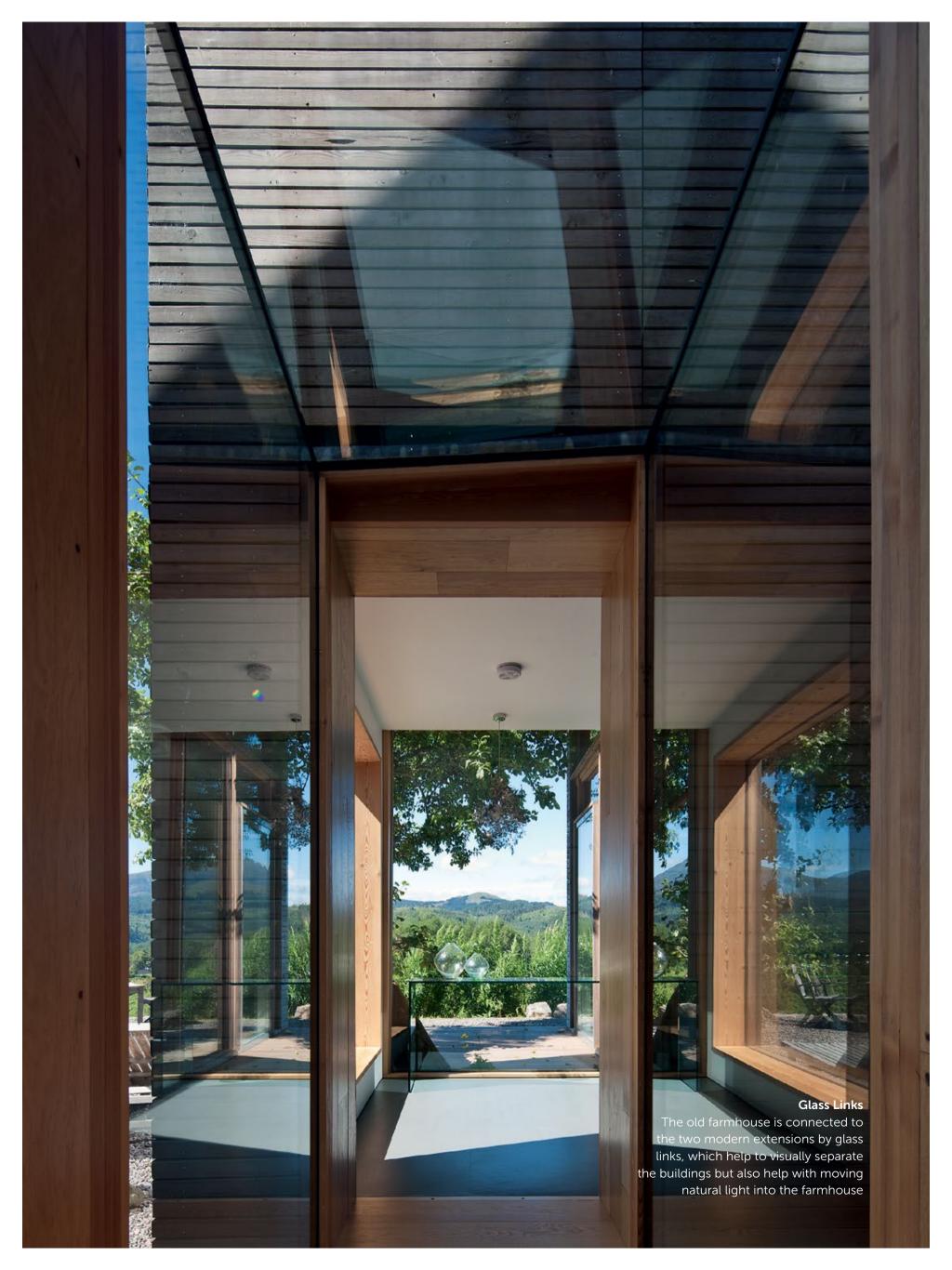
- ➡ Ken and Grace (LEFT) have renovated their Highland farmhouse, adding two 'barn'-style contemporary extensions to either side — effectively forming three wings, with one providing accommodation for visiting children and grandchildren
- The scheme was designed by the couple's daughter, architect Mhairi Grant, with much of the 10-year build undertaken by Ken his first major project with help from family members

s labour-of-love projects go, the Grants' reimagining of their family farmhouse at Invergarry makes for a lively tale, played out to great aplomb by various family members including retired owners Ken and Grace, who were responsible for constructing a great part of the build; daughter Mhairi who designed the scheme; and the whole extended family, who were drafted in to help. Taking place over the best part of 10 years, what finally emerged in 2014 is a remarkable contemporary farm 'complex' that manages to retain the integrity and charm of the 'Old Farmhouse'.

"The original cottage belonged to my grandparents, and my father was born and brought up there. Over the years it had accumulated various ad hoc extensions, flat-roofed dormers and a car port, and

Far Left: Kitchen

The roof of the old farmhouse has been removed and rebuilt to be 1m taller — creating a dramatic doubleheight kitchen diner inside as a result. A glazed link (right of shot) joins this old centre with one of two new extensions; glazing has been masterfully lined up so as to provide uninterrupted views. The Clearview Pioneer Oven stove — one of two stoves in the property — is a focal point between the glazing, and provides space for boiling the kettle and slow cooking, as well as throwing out enough heat to warm the entire room





Above: Exterior Elevation

One of the two extensions features a Cor-ten steel tower to the rear. Piled foundations were utilised to accommodate a 100-year-old apple tree on site

was physically attached to the cattle byre at the rear," explains Mhairi, who designed the new-look Old Farmhouse between 2003 and 2004, while becoming a chartered architect, with the detailed design being completed together with her husband Martin McCrae of Paper Igloo. "The existing farm buildings were a ramshackle arrangement, though not without their charm," adds Grace.

The Design

In terms of the 'new' family home, the couple agreed that, although they were downsizing, they weren't looking for anything small or poky. The house was to be the hub for their extended family of grown-up children and grandchildren. They were also keen for any new additions to be modern, yet sit sympathetically within the Highland landscape.

Central to Mhairi's design response was the retention and restoration of the original cottage externally, although in order to create a modern double-height space internally, the roof was removed and the walls built up by 1m before the roof was rebuilt. All the add-ons would be stripped away and the building separated from the byre. Two contemporary 'barn'-style buildings were designed to flank the farmhouse, connected via glazed links. "All of these new additions now create a 'backdrop' to the original house, and reinstate its significance at the heart of the scheme," says Mhairi. Although this was effectively Mhairi's first architectural project, the planners fully embraced her vision.

The farmhouse is now entirely occupied by the kitchen and dining area. The first 'barn' features the main living area and leads to the Cor-ten steel-clad circulation tower that houses Ken and Grace's book collection as well as their en suite bedroom on the upper level — and a top-level viewing platform. The other adjoining timber frame barn, built by Ken, features a ground-level family bathroom and utilities area as well as a lounge-cum-guest bedroom, with two additional en suite bedrooms and an office area above.

One particular challenge faced was incorporating a 100-year-old apple tree that stood in close proximity to the farmhouse. "We were keen to keep this element of the farm's history," says Mhairi. "The engineer came up with a solution for ground beams and piers for the tree roots. The piers are columns filled with concrete — like a concrete tower in the ground. The four piers create a square around the tree. The established roots can stay where they are and the new roots can grow through the piers; they have a clear path."

A 10-Year Build

At the time of inheriting the Old Farmhouse, Ken and Grace relocated from Glasgow to a neighbouring house on the site with a view to project managing. Once planning consent and building warrants were issued in early 2005, Ken, a retired doctor, was able to roll up his sleeves and take on what would be his first major building project — and one that certainly wasn't lacking in ambition.













Alex, an old school friend of Ken's, now a local contractor, was luckily on hand to help with the demolitions and clearing of the site, something that wasn't without its challenges: primarily, the discovery of 'blue stone', a type of stone that geologists identified as being 700-900 million years old, and being 40 per cent iron made it 30 per cent heavier than granite, and no small feat to remove.

"When Alex dug the trench for the underfloor heating, it took two days to remove one stone that weighed around seven tonnes,' says Ken. "We finally managed to drag it out with ramps." The other rubble collected from the site was then recycled to create the drystone retaining wall, built again by Ken, "and various family members press-ganged into helping!" he admits.

Ken, who learned most of his skills from his father at an early age growing up on the farm, admits that a pragmatic approach to the whole build certainly helped. "I was very much of the 'invent it as you go along' school of thought, whereas Mhairi was very precise with all the design details. In the end I deferred!"

Ken's methods were at times slightly unorthodox, though highly inventive considering the logistical difficulties of shipping materials directly to the site. "Access was challenging because of the narrow track to the house," says Mhairi. A lot of materials had to be delivered to the bottom cattle grid then collected and ferried to the house in a trailer or dumper (or indeed Ken's makeshift 'bogy' made from the axel of an old lawnmower). There could be no craning so everything had to be worked out in a back-to-basics way. "That's where Dad's eBay lift came in," says Mhairi.

"I bought a hand-operated motorised elevator and this helped install the four glulam beams in the new build. You could hoist them to the first floor and shuffle them across manually," says Ken.

Left: Flooring

Rubber flooring has been laid throughout the ground floor rooms (including the living rooms, FAR BOTTOM LEFT, and the family bathroom, LEFT) for a low-maintenance finish. "The rubber floor was seen as a compromise, as we wanted polished concrete originally, but now I prefer it as it's softer and more forgiving, which is ideal with young grandchildren," says Grace. "The other thing we didn't do was put a sealant on the rubber as we've learned that it can start peeling off"





Siberian Larch, a natural cladding choice for Paper Igloo on this farmhouse renovation project. We're experts with wood, always innovating, check out our new Charred Cladding, above, or see our bespoke range of oak flooring and parquet on our website.

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Indeed, Ken and Grace have no gripes about any aspect of the build, even the 10-year timetable. "We did have a hiatus of around two years, trying to sell our previous house, as we put it on the market on the verge of the economic turndown," says Grace. "However, in many ways the long process has worked out well as it would have cost us a lot more if we had stuck to a rigid timetable. And Ken really enjoyed doing it."

Cladding Choices

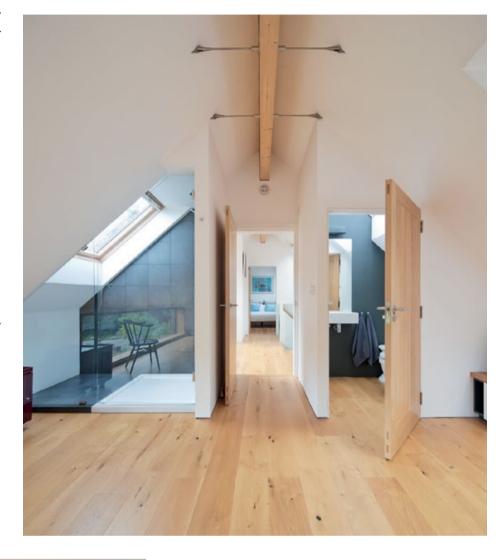
The simple choice and application of materials is central to the success of the new build elements, as Mhairi explains: "The Cor-ten steel echoes the agricultural/industrial feel; rust is quite intrinsic to many farm buildings, with old machinery and dilapidated buildings. Then I felt that the timber cladding is a natural and soft contrast to the hard finishes of the Cor-ten and harling of the original house."

Unusually, Mhairi has continued the larch onto the roof. "The timber roof keeps the language homogenous. We didn't want any fussy details, we wanted the shape to be simple and unfussy. The roof is ventilated so it can dry easily — it's no different in my opinion than a timber wall. At the time I designed this there were virtually no timber clad roofs in Scotland, but I think they're gaining in popularity. Ours is performing really well."

MORE INFORMATION ON TIMBER CLADDING ONLINE

Tomplete Guide to Timber Cladding

Visit homebuilding.co.uk/timber-cladding



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Left and Above: Glulam Beams

Glulam (glued laminated timber) beams are strong but lightweight, and well suited for creating large clear spans without the need for supporting columns. "I spent a lot of time sourcing the four glulam beams and the cheapest option I could find was to have them delivered from Holland," says Ken. The exposed stainless steel roof ties are by \$3i



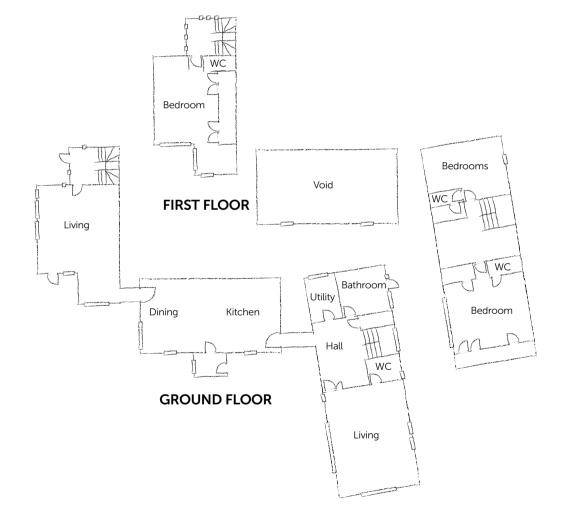
The Project



Mhairi Grant of Paper Igloo Architect

THE ARCHITECT'S VIEW

The idea behind the three separate areas is that the main living area and the farmhouse kitchen are the core spaces for Mum and Dad, especially as their bedroom is in this part of the house," says architect Mhairi Grant of the floorplan. "This means that they can keep cosy in winter and the other building can be secondary — it comes to life with all the visitors. But having the utilities and bathroom in this building means that it's always in use — it doesn't feel like an unused space.



KEY DATES

Aug 04 Planning permission granted
Jan 05 Applied for building warrant
Sep 05 Building warrant granted
Oct 05 Works began on site: trenches dug for farmhouse and 'barn 2' (right)
Dec 07 Barn 2 roof structure completed

Jan 08 Barn 1 (left) and tower foundation

excavations started

Apr 08 Excavation for ground-source heat pump and assembly of heat pump
Feb 10 Tower steelwork added
Dec 13 Building Warrant
Completion Certificate issued
Jan 14 Finishing touches

SUPPLIERS

Architect Paper Igloo
01786 870539; paperigloo.com
Structural engineer
Allen Gordon & Co01463 236516
Siberian larch rainscreen cladding
and larch for interior joinery
Russwood 01540 673 648
Cor-ten steel cladding
Glen Metals0113 254 0711
Windows (opening units)
Velfac01223 897100
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for site assembled) Highland Joinery and
Glazing01667 462946
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Heat pump Kensa Engineering
Morso (living area) and Clearview Pioneer
Oven (kitchen) woodburning stoves
Bonk & Co 0131 202 5081
Stainless steel roof ties s3l
01302 752 504

COSTS

Total

Preliminaries/demolitions Foundations External walls and cladding Internal walls Joinery and fittings Roof structure and covering Windows/blinds/doors Flooring Plumbing and heating Electrics Decorating Landscape/external works Ground-source heat pump and solar thermal panels Fees Labour	£5,000 £8,800 £35,000 £14,000 £13,500 £30,000 £45,000 £31,500 £24,000 £7,000 £5,000 £14,000 £14,000 £75,000
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£355,800









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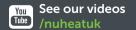
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WARM UNDERFOOT

TOP RIGHT: A
Nu-Heat underfloor
heating system
being installed in a
kitchen renovation.
BOTTOM RIGHT: This
diagram shows
how underfloor
heating works to
effectively heat a
room compared
to radiators

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Efficient Ways to Warm Your Home

Nu-Heat give an introduction to underfloor heating and heat pumps

ith more eco-friendly heating solutions becoming readily available and affordable, it makes sense to consider a different approach to heating. Many of us are making the move from radiators to underfloor heating and, for anyone building a home from scratch, it's becoming common to ditch the traditional boiler in favour of a heat pump — creating the perfect home heating partnership.

How does Underfloor Heating Work?

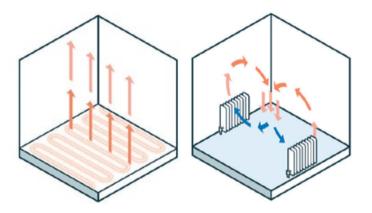
Underfloor heating works by pumping a controlled flow of warm water from a heat source, such as a boiler or heat pump, through tubing embedded in the floor. It can also be retrofitted, where the tube fits in slim panels sat on top of the existing floor.

What are the Benefits of Underfloor Heating?

Underfloor heating is suitable for virtually any property, is compatible with a wide range of floor coverings – from carpet to Amtico - and offers a host of benefits, including: a comfortable heating profile with no cold patches; low running costs — when paired with a heat pump, it is around 40 per cent more efficient than a radiator system; freedom to place furniture wherever you like as there's no radiators in the way; and it is easily affordable — particularly when installed as part of a new build.

Going Green with Heat Pumps

A heat pump is a great solution for homes without access to mains gas, providing significantly more energy than it uses.



There are two main types of heat pump – ground-source and air-source – which work by extracting the free supply of heat in the ground or air, using this for heating and hot water, and with the Government's Renewable Heat Incentive (RHI), many can reclaim the cost of installation over a seven year period.

The Benefits of a Heat Pump

Air-source heat pumps in particular are easy to locate and are practical for small and large homes alike. They can offer significantly lower fuel bills, because for every unit of electricity the heat pump uses it typically outputs at least three, and the RHI payments could bring in around £7,000, covering the initial cost of installation on top of the on-going fuel savings.

Top Tips for Creating your Perfect Heating Solution

Whether you're building or renovating, it's worth looking at all of the heating options for your project. Nu-Heat are able to offer helpful and honest advice, giving you the information you need to decide on a solution that will work for you and your home, from a bespoke design to technical support.

Going to the Homebuilding & Renovating Show at the NEC, Birmingham from 26-29 March? Visit Nu-Heat on stand E125 to ask all of your underfloor heating and heat pump questions.

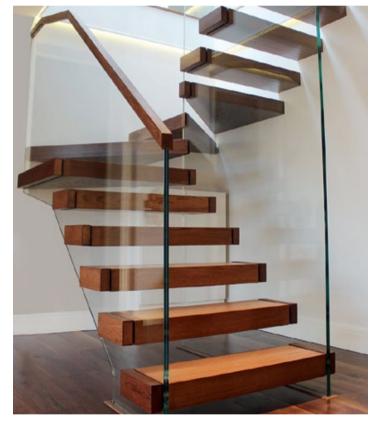


Can't make it to the show? There's plenty of information on <u>nu-heat.co.uk</u>, or you can give Nu-Heat a call to discuss your project on 01404 540650

QUICK IDEAS

Quick Ideas for Heavenly Stairways

Staircases need to be a mix of major design statement and practical functionary. Natasha Brinsmead reveals the ideas to take yours to another level (ahem)





CURVES

Spiral staircases are a great option for those tight on space — with diameters as little as 1,200mm being available.

If space is not an issue, centrally located sweeping, curved flights add a sense of grandeur and make the most of a spacious entrance hall — stone, such as limestone, hints to a Classical era.



FLOATING

Creating the illusion of treads that just hover, this is the perfect look for a contemporary home. The treads are attached on one side, either to the wall or to a stringer and are usually unsupported on the other. This type of staircase can be constructed from glass, timber or stone and need not be straight — curved and spiral designs work well with this look too.

TRANSPARENCY

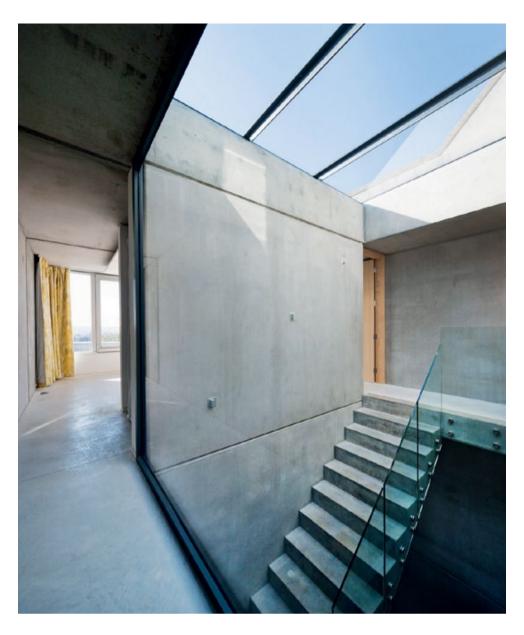
Glass staircases are particularly striking. Opt for one with non-slip treads and a diffused surface to ensure privacy from below. Combining glass with timber will warm up the look, while pairing it with a modern metal handrail keeps things sleek and shiny.





HANDRAILS

The look and feel of an elegant handrail can be a staircase's defining glory. You could go further too - refined underlit LED rails from Charles Crowson (ABOVE) introduce extra safety and ambience.



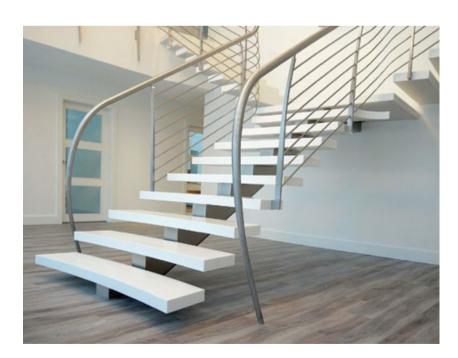


CONCRETE

Concrete staircases are perfect for adding industrial style – as this Adrian James Architects' project (ABOVE) goes to show – and can be constructed as one single piece off-site, or supplied as separate treads and risers. It is also possible for them to be cast in-situ — which is not as messy as it sounds.

CHUNKY TIMBER

Thick timber treads (like on this Hall + Bednarczyk project, ABOVE) can be created from several pieces of oak jointed together or from single pieces of timber — a cheaper option is to clad the treads and risers of an existing or more cost-effective staircase in solid hardwood. lacktriangle



WIDTH

Open plan hallways really benefit from wide staircases, where standard flights can look out of proportion and become visually lost. They also feel safer and provide a pleasing sense of luxury.

SPACE

Combining alternating treads with a steeper overall pitch, these are ideal for tight areas of the home and are often used for loft conversions. They are usually adjusted on site for an exact fit.



FOR SUPPLIER INFORMATION
See page 247 or visit homebuilding.co.uk/directory

CLOCKWISE FROM TOP LEFT: ADRIAN JAMES ARCHITECTS; SIMON MAXWELL; LOFT CENTRE; BISCA







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REMODELLING





Before & After

A 1920s dormer bungalow is transformed into a modern, accessible home

he client bought the existing 1920s dormer bungalow due to its pretty plot. However, the property hadn't been touched in 40 years and was in a desperate state of repair, with internal woodchip walls, and the exterior render and roof tiles past their best. Having previously suffered a serious injury, and presently living with a disabled father, accessibility was a key priority for the client.

In order to increase the ground floor accommodation, the house was extended to the side and rear, adding 40m² and allowing opportunity to open up the area at the back to become

an open plan kitchen/dining/living space. A separate utility and WC can be found at ground level, along with a study and bedroom. A large dormer was then introduced to the first floor, which resembles a gable end on the front elevation. This storey now boasts two guest bedrooms, a family bathroom and a master bedroom featuring an en suite wetroom and dressing room. Thanks to the rear extension, the master bedroom possesses a large sheltered balcony for the client to enjoy.

The exterior has been updated in a minimalist style using render, engineered

blue bricks, cedar cladding and grey modern slate tiles to the roof. Photovoltaic panels were also installed on the roof to meet the client's wish for an energy-efficient home.

We consulted the local authority's access officer to make

We consulted the local authority's access officer to make sure the plans were wheelchair-friendly. However, the client didn't want mobility issues to be on show, so everything is discreet, such as the slight inclines in level and bi-fold doors with flush floors. We also installed a lift to replace the stairs.

We've provided the client with a design that meets their requirements in terms of accessibility, and they now have a modern home that responds better to its surroundings. They

love the result — so much so that they say it's like being on holiday every day. lacktriangle



Lisa Raynes is a RIBA chartered architect and is Director of the practice Raynes Architecture in Manchester

KEY SUPPLIERS

Aluminium frames Express

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MACES: BUIL TBACEN



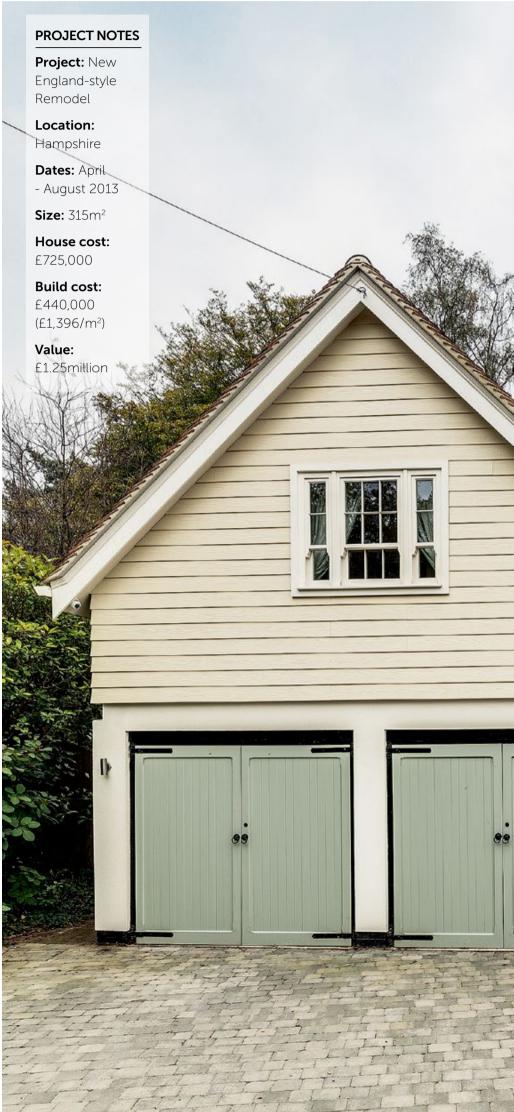
Above: New England-Inspired Makeover

The existing property has been rendered and clad in timber in a neutral colour palette to evoke New England style. New sliding sash windows from Bereco have been installed, as has a new oak frame porch and a new extension over the double garage

THE QUICK READ

- >>> Jon and Sheila enlisted architect Paul Gallie to renovate their Hampshire home while they were staying in Spain
- **>>>** Opening up the ground floor and adding a new orangery has allowed for much-needed light-filled entertaining space
- ▶ Despite going slightly over the initial budget, the project came in at £1,396/m² and was completed in just four months
 an impressive feat given the scope of the work both internally and externally







The extension and remodel of a Hampshire home pairs an East Coast-inspired exterior with open light-filled spaces

Words: Eleanor Price Photography: Simon Maxwell







Above: Remodelled Rear Elevation

Builders Moseley Green Bicknell Brown also took on the landscaping and have introduced a large patio terrace perfect for outdoor dining and barbecues in summer months. Transitioning from inside to out has also been made easier thanks to the new orangery, in addition to patio doors from Bereco

hen Sheila and Jon Osborne made the decision to move back to the UK from Dubai in 2005, they knew they wanted to return to Hampshire, where they'd lived previously. They were already familiar with the area and sought a spacious property that could become their new family home.

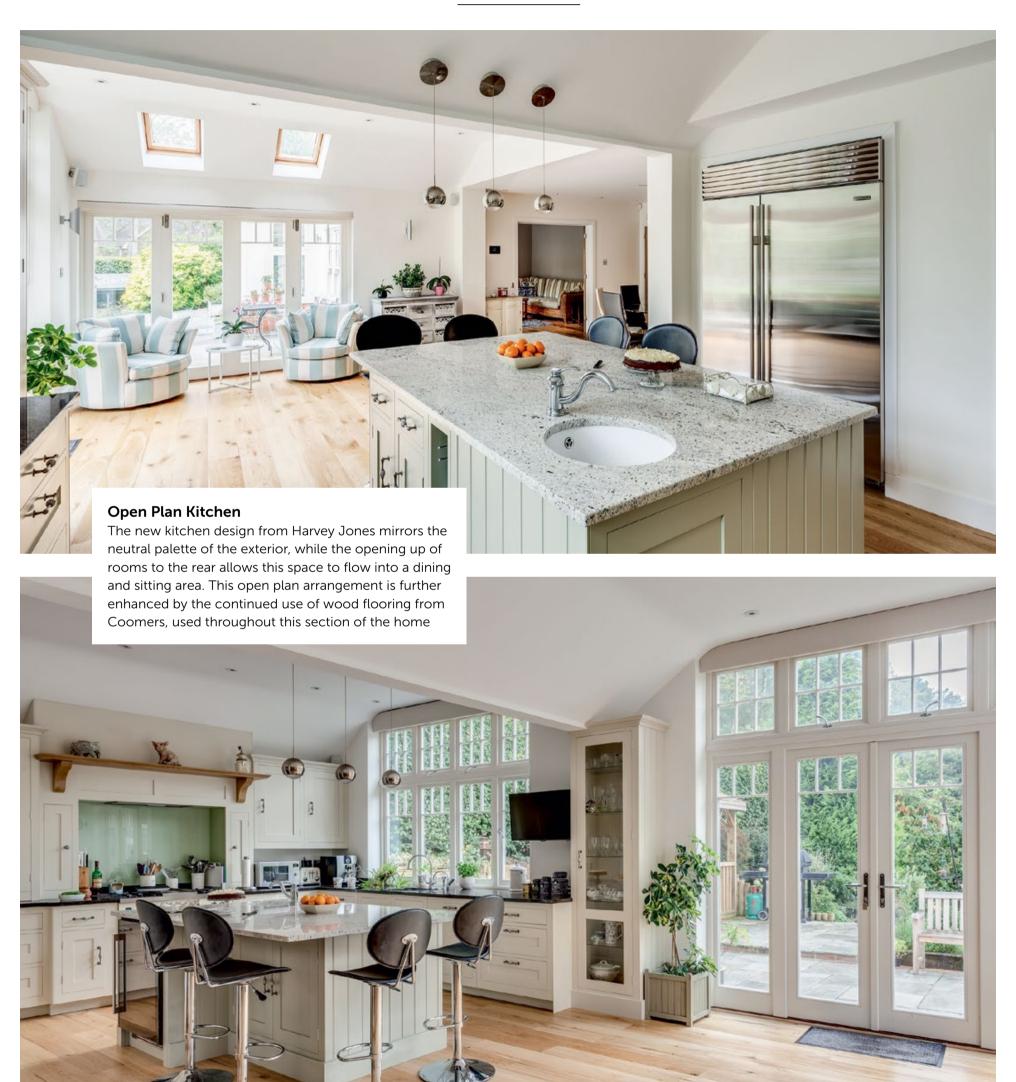
"We bought 'Chalfont' as we loved the location. It had already been extended at the time and we liked the open plan kitchen area and the south-facing garden," says Sheila. "However, as we lived in it, we found that we weren't using the house to its full potential and the space didn't flow properly. So in 2012 we decided to do something about it. We looked at what was on the market, but we had grown so fond of the location that we decided to see what we could do to the house, rather than move completely."

After selling shares in his business, Jon was confident that the time was right to make a start on the project and approached several architects. After choosing Paul Gallie from WSW Consultancy, who came recommended by a friend, a general specification was agreed, along with a project plan that included the design, planning, construction documents, contracts and project management. The architects put the project out to tender and came back with several quotes from local builders, choosing Moseley Green Bicknell Brown (MGBB) Services Ltd for their good reputation.

The Design Concept

The couple had a broad idea of what they hoped to achieve. "We wanted the kitchen changing round to face the garden and for it to be more open plan," Sheila says. "Before, we spent all of our ">>>

HOMES NEW ENGLAND-STYLE REMODEL







time in the kitchen, dining room and snug area, which was all in one room, so we never really used the rest of the house apart from at Christmas and Easter when we had friends and family over."

The fundamental plan was to make the whole house more open, creating a better sense of space, while also adding a separate lounge and a new orangery. "As we do a lot of entertaining, we wanted the kitchen to flow into the garden, which is why we opted for bifold doors leading out from the orangery and the kitchen. We also wanted to change the layout upstairs as a couple of the bedrooms were fairly small, and we required four double bedrooms and two new en suites, which could be done by utilising the space over the garage," Jon explains.

The Renovation Process

Once the build got underway in April 2013, the Osbornes made the decision to head to their holiday home in Spain for the duration of the project, leaving the builders and Paul the designer to get on with the task at hand. "We wanted to give them the space to get the work finished," explains Sheila. "We're pretty flexible, so they would Skype us and send videos from the site to keep us in the loop. I also came back to the UK a couple of times to check on the overall progress."

Charlie Brown from Moseley Green Bicknell Brown (MGBB) Services Ltd acted as project manager, working alongside Paul to keep the build on track. The company managed the necessary planning applications and building contracts needed for the new orangery and the bedroom and en suite over the garage too. A further planning application was then needed when the couple chose to render the old brick exterior of the house. "We hadn't intended to render the whole house, but the designer recommended it and we're so pleased that we did as it really adds to that New England look that we wanted to achieve," explains Sheila.

"The design of the exterior always needs to reflect the target value of the house," adds Paul Gallie of the new façade. "As the existing brickwork on Chalfont didn't reflect its value, we proposed an acrylic render from JUB to provide the necessary kerb appeal."

With the build time taking just four months, the couple moved back into the house in August 2013 and were thrilled with the new

layout. "When you go upstairs there's a real feeling of extra space as the small bedroom has been removed and the ceiling vaulted, which was another lovely suggestion by Paul," says Sheila. "He thought of a lot of the finishing touches really, like the windows, which were also his idea. The original design wouldn't have allowed me to leave the windows ajar, so Paul found an alternative from Bereco which works really well."

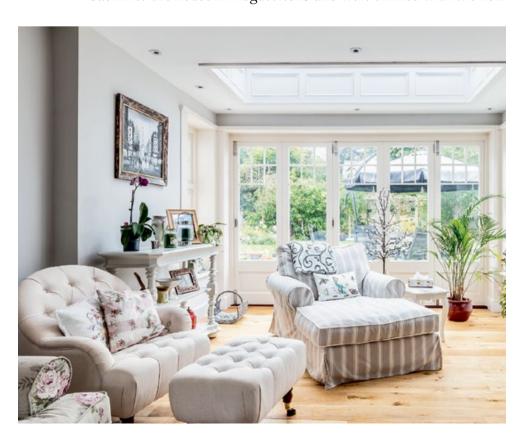
Paul takes up the story: "Windows and joinery are an important element to a property's façade. All of the opening sizes, style and proportions need to be considered from the offset to create a cohesive exterior design. Fanlights were initially proposed at Chalfont and while they are highly functional, they were traditionally intended for properties with tall ceilings as they offer a more attractive portrait proportion. As soon as you try and put fanlights into small windows with a standard 2.4m ceiling height you introduce a typical post-war style. Therefore to meet Jon and Sheila's needs we redesigned the elevations and introduced traditional sliding sash windows with lambs-tongue glazing bars to provide depth and further enhance the New England style."

Better Form, Better Function

For the couple, the decision to renovate their home was the right one, as Sheila says: "I love the kitchen area — the whole space just works now. All of the natural light and how each room flows into the other means that it feels so homely. There's not a part of the house that we don't like. We now also have four large bedrooms, two en suites and a family bathroom, so plenty of space for when friends and family come to stay and we really enjoy living here."

While the project was finished on time, the couple admit that they did go over their planned budget. "We decided to up the specification and we didn't want to scrimp on the finishes," says Sheila. "The actual build and kitchen were in line with what we budgeted for but we chose to spend a bit more on the windows. We're very happy though and we definitely feel that we had value for money."

Budget aside, the home's functionality has improved tremendously, and Sheila and Jon can now use the entire house for entertaining, rather than just the kitchen. "All we need is a bit of a sea view and we'd be very happy!" concludes Sheila. •



Left: Orangery

The bespoke orangery from Tommy Rooney of Oakhanger Joinery is an extension of the formal living space and, thanks to its impressive rooflight and triple-aspect glazing offering views of the garden, allows the room to be bathed in natural light





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HOMES NEW ENGLAND-STYLE REMODEL

The Project



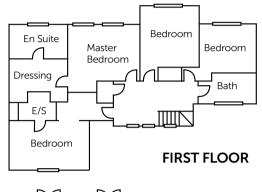
Paul GallieDesigner
WSW Consultancy

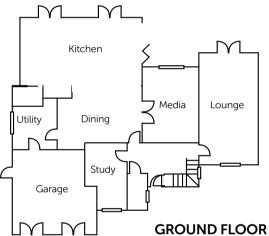
THE DESIGNER'S VIEW

The existing kitchen was a long galley and provided the only link to the study and rear extension — it was unsuitable to be the showpiece of the home. By reconfiguring the internal layout the new open plan kitchen now features an island with bar stools and an informal place to sit and chat to guests, with external doors connecting the outside space to a southerly spot, completing the alfresco lifestyle.

Adding the orangery and the bedroom over the garage has allowed for further flexibility with the layout and increased accommodation.

My advice for anyone doing something similar would be to start with the kitchen and make it count — the rest will follow. Layout is the most important element to get right and it should be without compromise.





SELECTED COSTS

Plumbing	£23,000
Electrics	£25,000
Glazing	£35,000
Underfloor heating	£11,000
Oak flooring	£50/m ²
Orangery	£30,000
Kitchen	£35,000
Bathrooms	£30,000
Landscaping	£20,000
Rendering	£10,000
Control4 and	£20,000
media system	

SUPPLIERS

Architectural design WSW Consultancy
01252 811011
Builders Moseley Green Bicknell Brown
(MGBB) Services Ltd01420 473162
Structural engineer Roy Gallie
roy@goodsonassociates.co.uk
Glazing Bereco01709 377406
Orangery Tommy Rooney of Oakhanger
Joinery01420 478090
Staircase Moseley Green Bicknell Brown
(MGBB) Services Ltd01420 473162
Kitchen Harvey Jones020 7483 1944

5
7
9
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4

PROJECT TIMELINE

Apr 13 Strip out of ceilings, internal walls, existing porch, garage roof and floor boards to ground floor; begin superstructure and form new internal walls; excavate strip footings for orangery; pour foundations and build up to damp-proof course.

May 13 First fix joinery; form suspended timber floor to orangery; replace floor joists to ground floor; form new gable wall

to landing; form new internal walls; timber frame walls to form study and WC; first fix plumbing, heating and electrics; weatherin roofs; add single-ply membrane to flat roof link to bedroom two and orangery. **Jun 13** Cladding to façades, soffits and bargeboards; install rainwater goods; insulate roofs and timber framing; dryline walls; orangery installed; plastering;

windows and doors installed; second fix bathrooms and kitchen.

Jul 13 Plastering; new oak balustrades and newel posts fitted to staircase; tiling to bathrooms and WC; external rendering; kitchen units and worktops installed; second fix electrics; decorating; engineered oak flooring laid to ground floor and carpets to first floor.

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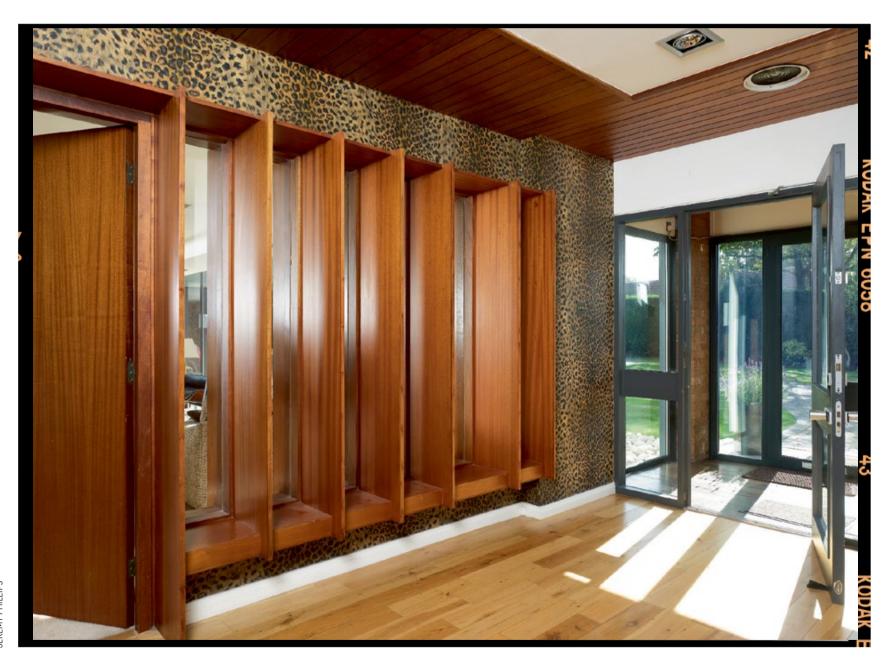


INTERIOR ARCHITECTURE

Ideas for Every Room

In this cut-out-and-keep gallery, Natasha Brinsmead offers the best spatial design ideas for all the elements of your new home

THE HALL

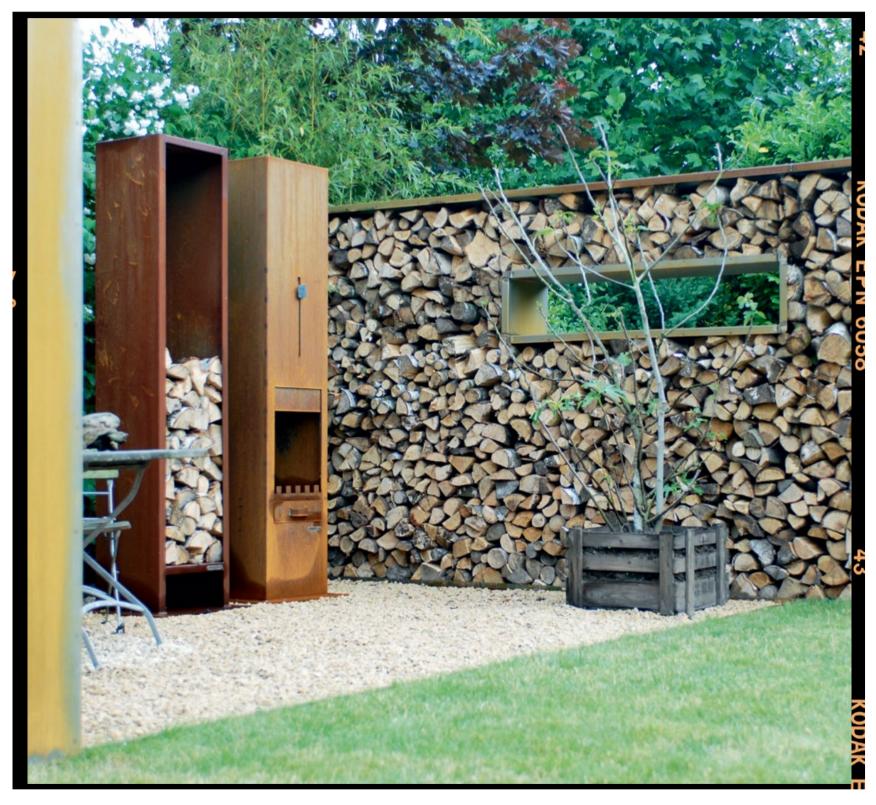


EDEMY DHILLIDS

Glazed Hall Partitions

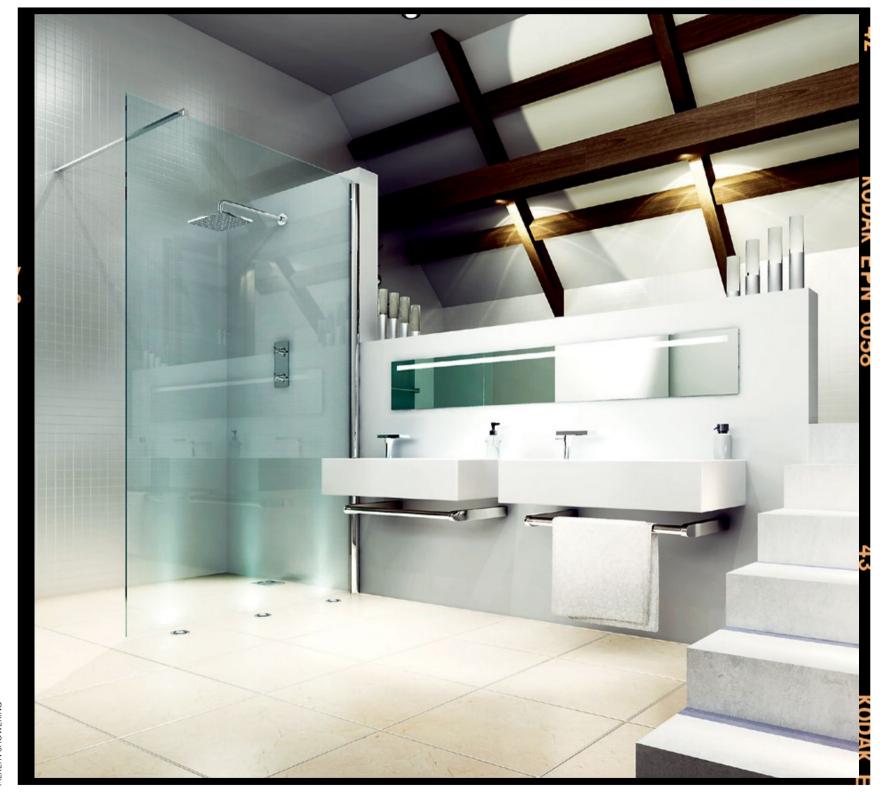
Create a visual connection between the hall and living areas – with all the benefits of light and flow – with internal glazing. Even better, chunky profiled frame louvres offer privacy at certain angles – as well as oozing reassuringly mid-century modern style (leopard-print wallpaper optional).

THE GARDEN



The Open Air Living Room
Introducing dividers is a good means of creating a 'room' outdoors; a space that evokes a cosy, tucked-away feeling, without walls or a ceiling. The Zeno divider here also provides useful log storage and is made from Cor-ten weathering steel to provide a low-maintenance finish, while the fireplace provides an attractive focal point.

THE BATHROOM



MERLYN SHOWERING

The Zoned Bathroom

Bathrooms are becoming more like living rooms — both in terms of the space they need and the importance we place on them for a bit of much-needed luxury. At the planning stage, consider a change in levels to separate out the more glamorous bathroom experiences from the more, er, functional.



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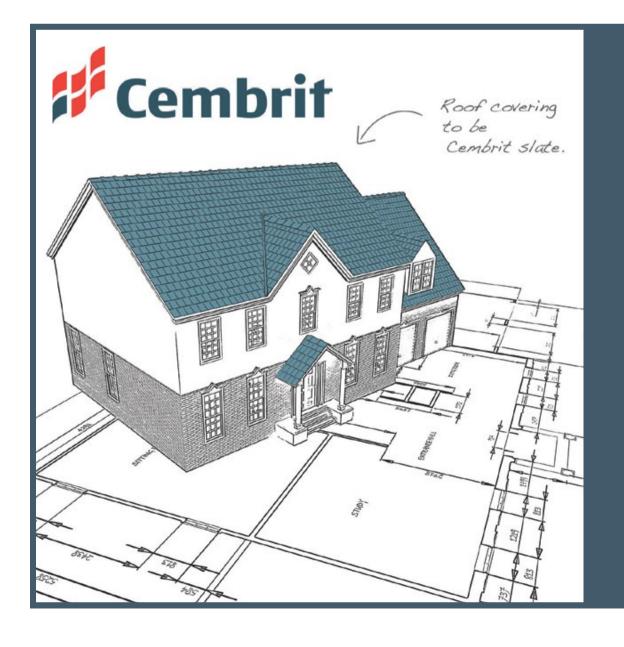


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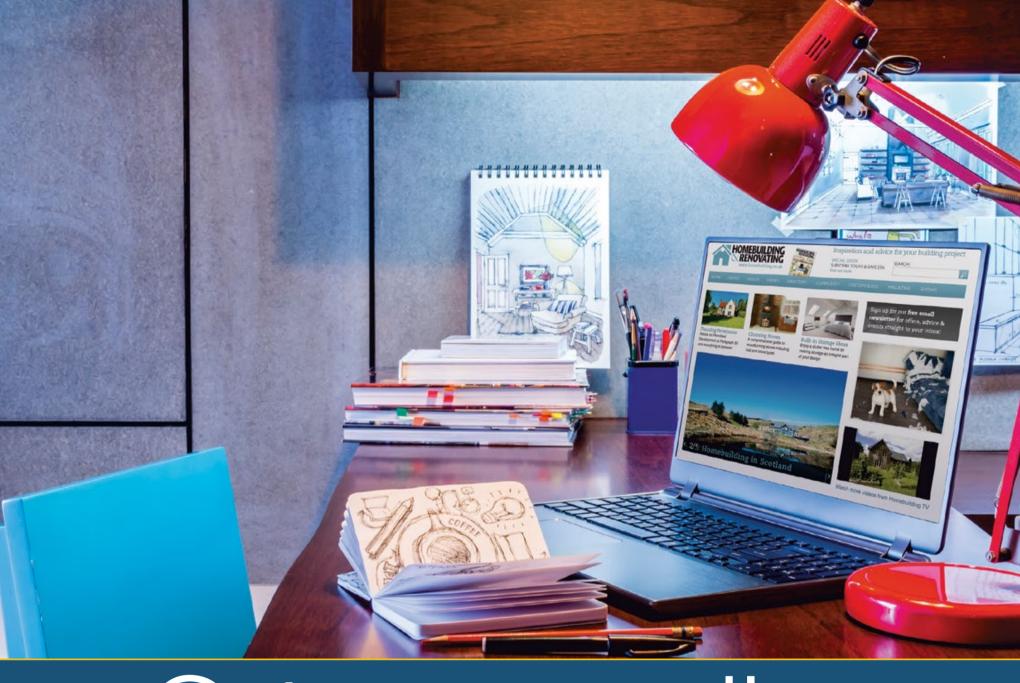












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In the Frame

We catch up with Emyr Davies, the Welsh Oak Frame designer behind this charming self-build in Norfolk





EMYR DAVIES Emyr Davies is the Design Manager at Welsh Oak Frame who specialise in designing and building oak frame homes and extensions (welshoakframe.com)

Above: Front Elevation

Thanks to the courtyard created by the L-shaped footprint, this could easily be mistaken for a rear garden. The front elevation features an integral garage, while a gate in the perimeter wall provides access to the courtyard and front door. Viewed from the road, brick features heavily to fit in with the surrounding properties, and a catslide roof keeps the property low

HB&R: How did the concept for the design come about?

Emyr Davies: The clients approached us at one of the Homebuilding & Renovating Shows; they were looking to replace a rundown 1930s bungalow on a small-ish corner plot. They gave us a fairly basic brief, specifying an open plan living space with vaulted ceilings - which really led the design - and an integral garage; we developed the rest of the design in-house and led the client through the process. Given the constraints of the tight plot, the idea was to provide a home which offered the client the space they needed while dealing with the issues the site presented.

The plot is overlooked on both sides and the existing house had a south-facing elevation next to the road. The trick was getting the new home to work on site. In order to overcome the problem of overlooking, we designed the home to keep the number of windows minimal on certain elevations. Given that the front elevation is south facing, we wanted to find a way of bringing in natural light ">>>



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THE DESIGNER'S VIEW OAK FRAME SELF-BUILD

without the house looking out on to the road, and so we designed an L-shaped footprint to create a courtyard and included full-height glazing here. Adding a new wall to the front perimeter enabled a barrier to be created between the house and courtyard and the road, offering privacy for when the homeowners sit outside.

Were there any key considerations to keep the planners on side?

We had to consider the surrounding houses, which feature a lot of brick and render. And so, to keep the planners happy we featured quite a bit of brick on the property, particularly on the ground floor facing the road. We then featured traditional rendered panels within the oak frame on the first floor to add interest. There are a lot of low-lying properties in the area too. This was also taken into consideration and the house has a catslide roof to keep the bulk of the 140m^2 property down.

How long did the build take, and were there any challenges on site?

The beauty of oak frame homes is that a lot of the work is done in the factory, so time is minimised on site. The oak for the frame was sourced from sustainable forests in northern France and the frame itself – a post and beam-style structure with rafters for the vaulted rooms – took around three weeks to build in our factory before it was shipped to the site. It was then erected within two to three weeks, after which the tiled roof was added.

The planning and the build was pretty straightforward, but the main challenge was the site itself. Given how tight the site was it created problems with the unloading of materials to erect the frame. From start to finish the project took about two years to complete.

How have the internal rooms been laid out to work effectively?

Given that the original house on site faced the road on the south-facing elevation, the key thing here was to orientate the new house to make the most of available natural light. The glazing within the house runs south to north, with the heavily glazed L-shape section allowing natural light to enter the home. As the clients wanted an integral garage we also had to plan the design so that the garage was situated at the main access point.

The clients were keen to have an open plan kitchen/dining/living space where they could spend most of their time and this has been arranged so as to open out onto the courtyard and benefits from

Below: Open Plan Living

Central to the home's design, the large open plan kitchen/living/dining space with vaulted ceilings provides space for everyday living, with triple-aspect glazing and a rooflight allowing the room to be filled with natural light. A woodburning stove here acts as a focal point



THE DESIGNER'S VIEW OAK FRAME SELF-BUILD



a triple aspect — a rooflight also allows natural light to reach the centre of the home. They also wanted a vaulted ceiling which we have designed above the living area to give this section a great sense of space. Behind the garage there's a study and a bedroom on the ground floor which has been purposefully planned for the future. Two bedrooms, one with an en suite, and a family bathroom are then placed on the first floor.

Was energy efficiency a consideration?

Making the home energy efficient was definitely something the client considered from the beginning of the project. An air-source heat pump has been installed, as have solar panels on the southfacing elevation, along with a lot of insulation within the walls and roof to keep U values low.

What has been the greatest achievement here?

I think how comfortably the house sits on the site is a real achievement – it's really lifted the neighbourhood up – and also how well the oak frame works within the existing area really goes to show how flexible oak frame homes are. The clients love it. •

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Left and Above: Exposing the Oak Frame

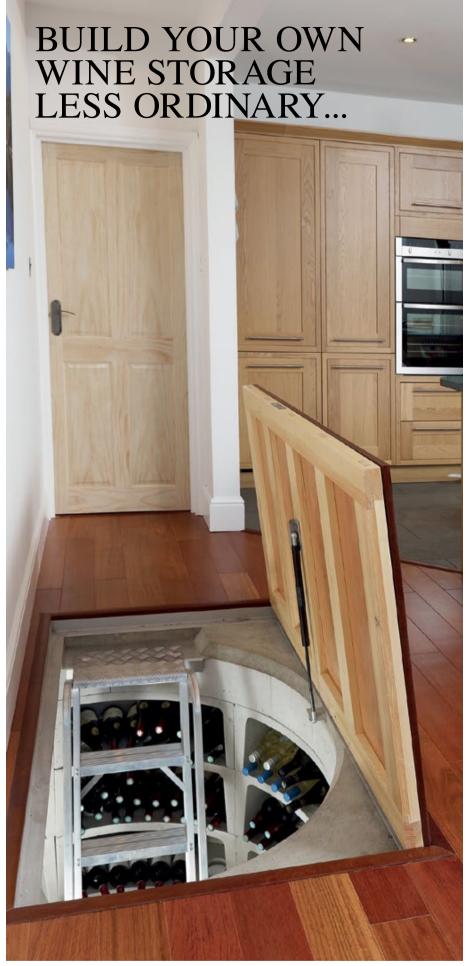
While the style of the frame is a typical post and beam structure, exposed rafters have been included to great effect. Oak windows and doors continue the theme throughout the home





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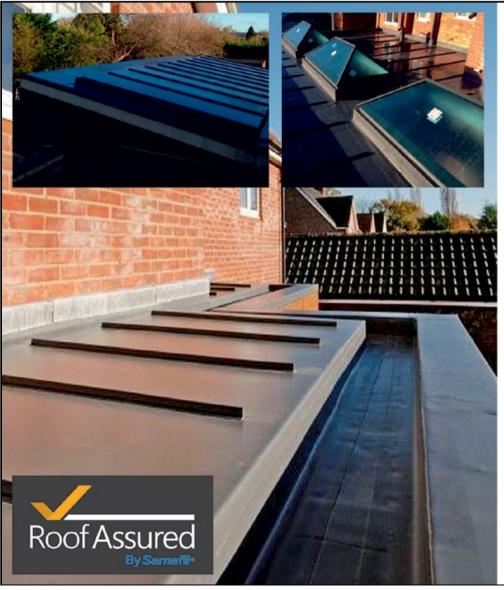
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Flat Roofs for Renovators

Flat roofs get an image makeover

rom small extensions to large scale new-build projects, the flat roof has ditched its 1960s image of awful designs and poor performance and reinvented itself into a stylish, sleek, high performance roofing choice. Roof Assured by Sarnafil provides a range of roofing systems developed by Sika Limited, the market leader in single ply membranes.

There's a lot to consider when specifying the roof for your project; cost, insulation, thermal values, building regulations, guarantees, space saving and, of course, looks. 80% of visitors to the Roof Assured stand at the Homebuilding & Renovating Shows come because their architects have specified a Sarnafil single ply membrane for a space saving, flat roof on their new build or refurbishment project.

What are the Benefits of a Single Ply Membrane?

A flat roof can be a thing of beauty and it's worth comparing the looks and high performance credentials of a single ply membrane against the more traditional felt and GRP options. The Sarnafil membranes are lightweight and dimensionally stable, so they can't stretch or lose shape. They have high UV resistance, so no chippings to protect them from the sun's rays. They're resistant to root growth and pollution can't harm them. They're vapour permeable so any moisture trapped beneath the membrane will evaporate, preventing the blistering or slump that's so common in traditional roofing felts. And when heat-welded, they form joints stronger than the membrane itself.

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Sarnafil membranes installed on buildings in the 1960s are still in use today and the British Board of Agrément has independently assessed the membrane and, in their opinion, they have a life expectancy in excess of 40 years with virtually no maintenance. Guarantees are important — which is why Roof Assured provides a 15 year materials guarantee covering both the membrane and ancillary products. You can also opt for a membrane and insulation package which is covered by the single point material guarantee. No more worries!

Flat Roof Design Options

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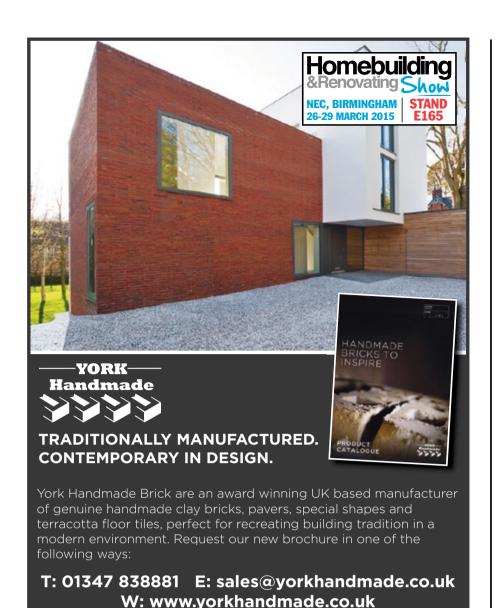
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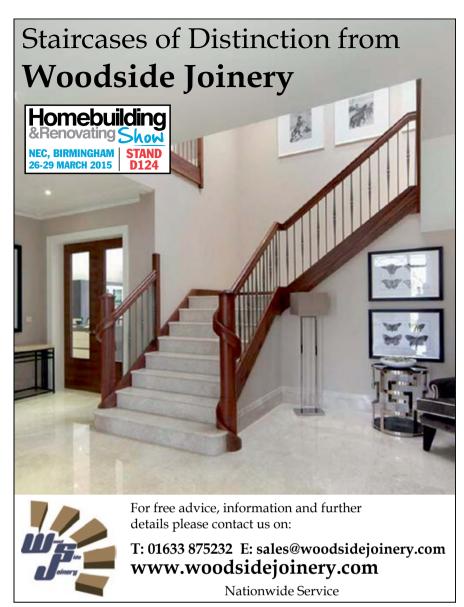
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HOMES GEORGIAN-STYLE SELF-BUILD



reating a well-executed new home in traditional style requires the services of a skilled designer and a willingness to stress about the details — and a not inconsiderable commitment to the challenge. Just one or two mistakes and the whole thing just feels 'off'. Luckily, that's what Dominic and Kate Fry had (in spades, it appears) when they tackled the build of a new Georgian-style home in a pretty Wiltshire village.

"We weren't architecture students when we started, but we became fully versed by the time we had finished," says Kate, rattling on about the Golden Ratio and Doric details (more of which later) as she shows HB&R around the new home she and Dominic created for their expanding family (of three children) with the help of hugely talented architect Alex Oliver.

"We were living in London and wanted to move out to the country," explains Kate, an IT project manager (Dominic's an investment banker — don't hold it against him). "Being in London all the time with busy lives, it wasn't easy to find somewhere so we employed a property finder. We hadn't really considered building from scratch but when the agent found a 1970s bungalow on this tucked-away one-acre site, we leapt at the chance. Location was so important."

Design and Planning

The bungalow was ripe for redevelopment. It had planning approval

THE QUICK READ

- ▶ Dominic and Kate hired a property finder when they decided to relocate from London to Wiltshire. The agent found this large site, which was occupied by a 1970s bungalow, with permission for replacement
- ➡ Initially suspicious of the look of new-build homes, they engaged architect Alex Oliver to create sketches of new Georgian-style designs. Following exacting proportions and classical style, the result is as good as old
- ▶→ Despite its traditional external styling and formal internal layout, the house functions as a flowing family home for the couple and their three children

Right: Hallway

Parquet flooring creates a fitting backdrop to the large entrance hall with a wide staircase, from Dibben Joinery, combining an elegantly thin handrail to perfectly capture a period feel. Doric order cornicing adds to the classical feel



HOMES GEORGIAN-STYLE SELF-BUILD







Above: Kitchen

The kitchen, from Neptune, features a large curved central island underlit with LED lighting and is separated from the breakfast space by a half-height partition, overlooking the garden. A family room can be part of the space or separated by bi-fold doors



to be extended with the site split into two and another house built next door. "I think as well at one stage the owner was applying to replace the bungalow with eight homes," says Kate. "When we bought it and put in an application for one, admittedly large, replacement, I think that there was some relief locally, particularly given the nature of the design. As the site is within not only an Area of Outstanding Natural Beauty and a Conservation Area, but a World Heritage Site, there was a lot of consultation."

Luckily for Dominic and Kate, they came across Alex Oliver, a Wiltshire-based architect who specialises in traditional schemes done well. "We saw his initial sketches and knew that this was the route we wanted to take," says Kate. "We really liked the feel of his work — it convinced us that building new meant that we could have something beautiful. The brief was for a spacious home that worked well for a modern family but complemented the location. After that, we put ourselves in the hands of Alex."

The scheme is undoubtedly grand – at 605m² it's rather difficult not to be – and is suitably formal, with a symmetrical front elevation, classical portico, well-proportioned sashes, lovely eaves detailing and much more. It's Georgian grandeur all the way inside too, with a double-height entrance hall, sweeping wide staircase, impressive cornicing, parquet floors, 3m-high ceilings and formal room shapes. Kate left the majority of the design work in Alex's obviously capable hands (he produced 3D CAD visualisations to enable Dominic and Kate to get a good idea of the spaces), although they did make some layout adjustments at an early stage ("we moved the kitchen from the front to the back to ensure views over the garden," says Kate) and handled a lot of the interior finishes.

"We were particularly keen on future flexibility," adds Kate. A third attic storey provides self-contained guest accommodation which could easily become a teenagers' suite. The simple fact is that a house this large doesn't struggle to have rooms and spaces that can change as required and be grown into. What would have traditionally been servants' quarters will inevitably be used in the spirit of giving family members space and privacy, accommodating visitors (we met a touring cricketer who had been put up in a »







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HOMES GEORGIAN-STYLE SELF-BUILD



Above: Front Elevation

The main house is constructed in a combination of natural dressed limestone with lime rendered masonry and painted timber joinery under a roof of natural slate. The single storey ancillary wing is clad in brick with flint banding. Roof hips and dormer windows are of lead

self-contained space for the summer) and much more. Space helps enormously, but the Georgian formality has been adapted with flexible modern living in mind.

The Build

Kate and Dominic used a main contractor for the construction with a project manager (MEA Consult), who acted as a form of quantity surveyor (QS), as their point of contact on site — all supervised by Alex Oliver. "Architects always tend to give you an idea of costs that are perhaps slightly on the positive side, which is why we were keen to have a QS on board," says Kate. "Their cost predictions turned out to be almost exact. Having experts working with us really helped to make it a relatively stress-free experience." Kate recalls a six-week delay which, over a 13-month build time, is pretty good going to say the least.

"It's amazing how many decisions you have to make with a project like this," concludes Kate. "Everything needed our call, or a referral back to Alex, in order for it to be right. We're delighted with what we've ended up with, particularly considering we hadn't really thought about building our own home at first. The house is much warmer and less draughty than the type of home we might have bought instead, and it looks like it has been here for centuries."

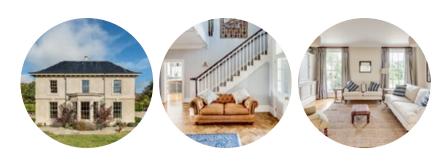






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HOMES GEORGIAN-STYLE SELF-BUILD

The Project

Q&A WITH THE ARCHITECT, ALEX OLIVER



Alex Oliver Architect, Alex Oliver Associates

How did Kate and Dominic influence the final layout?

Kate and Dominic wanted a house that would work well for a young family. Convenient room adjacencies suit the needs of a hard-working mother of young children.

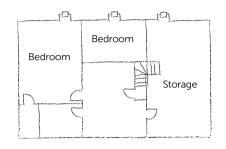
The kitchen/diner needs to be large and light, and immediately adjacent to the family/play room, to allow informal supervision of the children from the kitchen. Large folding doors between the two spaces allow flexible approaches to either screening the potentially messy space, or being open entirely.

What aspects of the layout work especially well?

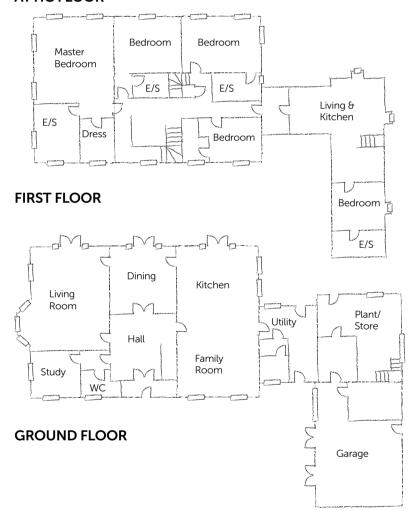
Although a large house, careful planning has avoided long corridors or wasteful circulation space. The rooms in the main house are gathered around a double-height hall that forms the 'circulation hub' of the house, while also providing a dramatic entrance feature. This entrance hall/circulation space is a 'cube' in volume, and the stairs and galleried landing wrap around all four sides. By 'pooling' the necessary circulation in this way, a generous space is created that is a practical solution and architectural feature. There is an added benefit in that it will also be a great theatrical 'party space'.

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>>> Watch HB&R's Video Interview with Alex Oliver



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HOMES GEORGIAN-STYLE SELF-BUILD

Getting Georgian Right

Everyone loves Georgian-style homes, but so few self-builders and even renovators manage to get the style details just right. Jason Orme explains



eorgian design appeals to a lot of people wanting to build new homes in the traditional style. Not least the larger housing developers, whose estate homes attempt to imitate Georgian style because they consider it a) the most popular of all the 'styles' and b) the cheapest to build because of its simple rectangular form leading to simple roof shapes and minimal levels of intricate detailing.

However, the discerning homeowner looking to build a new individual home in the Georgian style should aspire to higher ambitions. An understanding of the key tenets of great Georgian design principles helps to get things off on the right foot.

Roof

The shallower the roof, the more dominant the façade, meaning that the Georgians – who really valued kerb appeal – tended to either opt for a very shallow pitch or they would cover part of it with a parapet — either way, reducing its impact.

Interiors

Successful Georgian interior design is all about proportions. In general, the ceiling heights on the ground floor should be taller than those on the first floor; those on the first taller than those on the second (which may have been originally servants' quarters) — this is one of the key characteristics that marks Georgian architecture out from, say, Victorian homes. Concentrate too on a grand staircase, preferably with a long, winding handrail, as well as classically derived mouldings.

Above: Rear Elevation

A shallow-pitch roof, perfectly proportioned window sizes and positions as well as a charming, simple symmetry are the essence of Georgian style on this new self-build

Windows

Developers get Georgian wrong in several ways, but the easiest to spot is the windows, for three reasons: they are usually the wrong size and shape; they are positioned incorrectly; and they are rarely even sash style. Window choice is critical: they must have thin, refined glazing bars and deeper than standard reveals (the way the window is inset against the wall — in too many modern houses it is almost flush).

Above all, of course, unless you've got the time and desire to take an intensive course in Georgian design principles, you're best to invest in design and find an accomplished designer. That's easier said than done, of course, but it's worth checking out designers who have handled projects in sensitive locations or dealt with particular planning restrictions. RIBA's service might help, and Robert Adam and, of course, Alex Oliver are two great names to start. •

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Right:

A teenager's TV room/den was one of two spaces created in this house when an unused loft was converted, also adding a home office for mum and dad

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Q&A Loft Conversions

Get informed before your project with these key points from conversion specialist

Q. What will a loft conversion cost?

A. 'There's no such thing as a typical, one-size-fits-all conversion, so the cost will vary,' explains Econoloft director Rebecca Tibbert. 'Econoloft works with homeowners to develop a space that fits the personality of the house and the people who live in it. In Greater London and the south of England, expect a full loft conversion to take 8-10 weeks to complete and be priced between £30,000 and £40,000, excluding the cost of bathroom suites, decoration and flooring.

'A loft conversion is often cheaper than moving home,' she adds, 'and most property experts agree that it is the home improvement that will increase the market value of your house most, adding up to 15-30 per cent, depending on where you live.'

Q. Why use a professional loft conversion company?

A. 'If you get it right, your loft conversion will add value to your home, but getting it wrong could detract from your property's value or, even worse, make it unsafe,' says Rebecca. 'Planning is still a crucial part of the process even though most lofts can be converted under permitted development.

Properties in Conservation Areas must still file for planning permission and many will be affected by The Party Wall etc Act 1996. Using Econoloft will help to ensure you don't make any costly mistakes.'

Q. How can I get the most out of my loft space?



A. 'With its highly experienced team, Econoloft can help you to maximise the space available to you by advising not simply on the best type of conversion for your loft, but also on how you can design and use the space,' says Rebecca. 'For example, using Velux windows or adding a Juliet balcony could bring in lots of natural light. Our clients are always amazed at how an unused and unloved loft can be transformed into a light, bright, spacious room.'

Q. How do I know if my loft is suitable for conversion?

A. 'Most homes are suitable. As a rule, the ideal loft space measurement starts from 2.4 metres at the highest point (apex). A free feasibility study will make it apparent whether a conversion is suitable.'

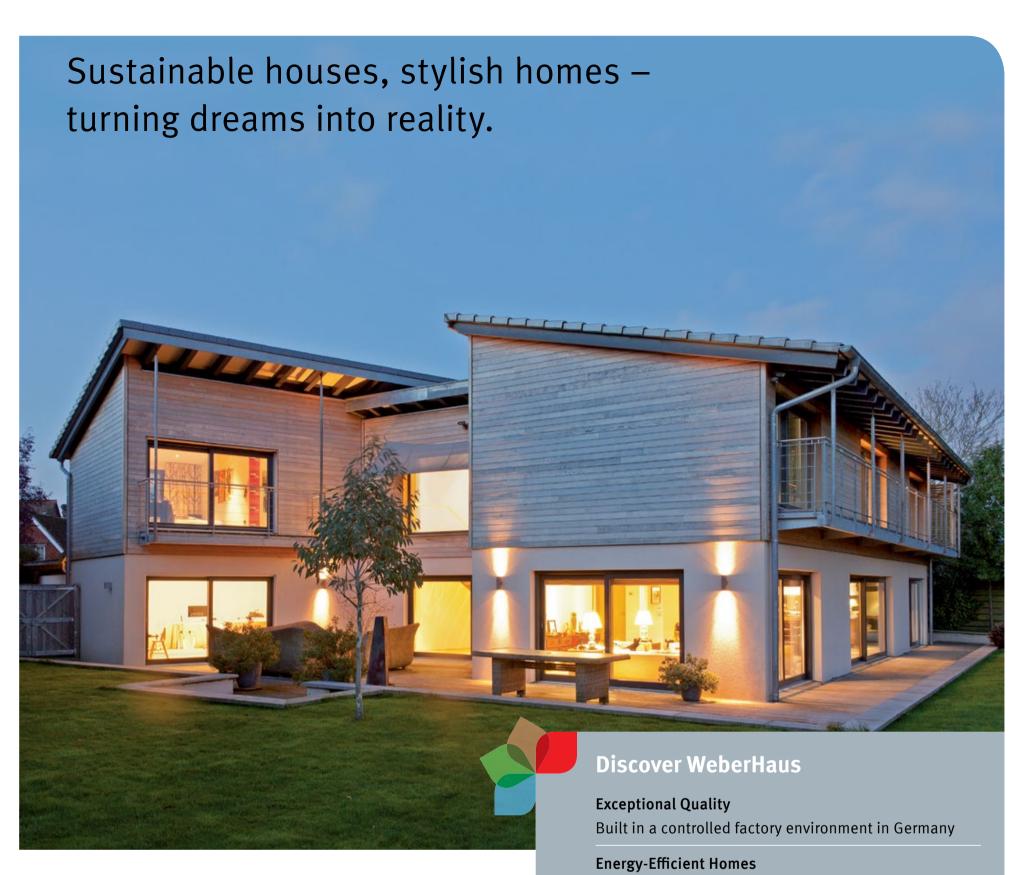
Right: This dormer conversion has created a bedroom

with en suite

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Building & Renovating

This section: All the practical expert advice you need to get your project underway



Advice

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Advice

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Advice

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FEATURE FOR BEGINNERS

The A-Z of Self-Build

Building your own home can be a daunting prospect for first-timers. Jason Orme provides a walkthrough of how it works for beginners



JASON ORME

is the longtime Editor of Homebuilding & Renovating. He self-built at the age of 27 and is currently in the middle of another sleepless-nights-inducing project

is for Architects

The design of your home is the most important thing of all, so don't scrimp on it. 'Architect' is a term devoted to a type of designer who has passed all their qualifications and is registered with the Architects' Registration Board, so be careful on terminology — not all house designers are architects and not all architects are (good) house designers. Choose the person rather than the title. Many designers will offer a full project management service, likely to be costed as a percentage (around 7-12%) of the total build. Some will operate on a fixed-fee service for designs only. Others offer supervision and stage sign-offs.

is for Bricks With the exception of the several stone belts running through areas like the Cotswolds, brick remains the cladding material of choice for most people building one-off homes something like two-thirds of self-built houses use brick in some form. Remember that the brick outer skin is not structural, and homes finished in brick can be constructed using any system, including timber frame. For calculation purposes, bricks laid in a regular bond (stretchers, the long face) will cover at a rate of 60/m² (facing). Bricks are usually priced on a cost per 1,000 basis, and the typical home will need in the region of 10-20,000 bricks. Prices vary hugely, from £150/1,000 for basic 'engineering' bricks up to well over £1,000 for handmades. The other key variance is in the laying pattern (bond), which can be any combination of stretchers and headers.

is for Costs

Estimating a build cost without a detailed set of plans and a specification will, of course, result in a generalised answer. Check out our build cost calculator (for new builds on page 148, for extensions online at <a href="https://hones.ncbi.org

is for DIY
Only around 9% of people who build their own home actually take on DIY to any significant degree. The majority will take on smaller tasks, such as decorating, towards the end of the project. With labourer rates in the £100-150 per day range, it's tempting to do what you can; bear in mind that the danger is you'll hold up the project with slower work and not do as good a job as the pros — in which case it's best to stick to tasks outside of the critical path (i.e. on which other tasks aren't dependent). That said, with labour costs accounting for around 45-50% of your overall spend, the savings can be huge.

is for Eco

It has become something of a meaningless term — all new homes are to an extent 'eco' but defining it is a moving feast. For the most part, people building their own home wish to minimise their home's energy use and put in place systems that generate the energy their home needs in the most efficient manner. Insulation and good windows remain the key starting points for the 'eco' home, with airtightness, orientation (all the better to pick up passive heat from the sun) and ventilation all part of the considerations. When it comes to energy generation, renewables (such as solar panels, heat pumps and biomass boilers) make more sense for those living off the main gas grid, although the high capital cost of such systems has been (in most cases more than) offset by the Government's Renewable Heat Incentive, which pays out a handsome tariff over seven years.



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FEATURE FOR BEGINNERS

is for Finance

The number and value of mortgages available for self-builders is at its highest level since 2008, with loan to values (the size of the loan as a percentage of the actual price/cost) up to 80-90% in many cases. Self-build funding works in exactly the same way as a regular house mortgage for the plot purchase, while the 'build' element of the mortgage is the same except that the loan is drawn down in stages rather than at the point of purchase. So, if you're taking on a mortgage for the build project itself, you'll get a certain percentage of the total for the foundations, another 20% or so for the walls, and so on — it's usually six stages (and, thanks to the Accelerator mortgage available from Buildstore, in advance of the stages being completed).

is for Groundworks
This is part of the foundations process and the start of any project. You'll need to get soil and land cleared (ideally to another part of the site to be used later for land-scaping), any existing services relocated and new ones installed and, finally, trenches dug for the new house foundations. Most firms calling themselves 'groundworkers' actually offer a full foundations package, building up blocks (or using another foundation system such as piling) to get your house ready to 'slab' or 'oversite' stage — ready for the builders to get going.

is for Heating
More complex than ever, your home's heating system is one of the major decisions you'll need to wrestle with. First of all, do you have mains gas or not? If not, then renewables such as heat pumps and biomass boilers become viable options for the choice of fuel source. That is only a third of the heating trinity, however – the others being the controls (increasingly sophisticated, as they can reduce your bills significantly) and the emitter – it usually comes down to a choice between radiators or underfloor heating. It all starts with working out how much heat your home needs, so this consideration really should be a fundamental part of the design process and planned in from the start.

is for Insurance
You'll need specialist self-build insurance for your project. Ideally it should include cover for the site itself – including loss and theft of building materials, and public liability – if, for example, someone wanders onto your building site and injures themselves. You may also need employer's liability cover if you are running your own project. You would also want an insurance product to cover the works as they are constructed, along with any legal cover you might need along the way.

- is for Joists

Joists are a supporting timber (although they can be made of steel or concrete, too) that runs horizontally to support a floor or ceiling. There has been significant innovation in this often humdrum product area in recent years to eliminate the key issues people faced, namely occasionally squeaky floors, limited span length and the requirement to drill into them for services (e.g. running electrical cables). Look out for brand names such as TJI, I-Joist and Posi-Joist.

is for Kits
The concept of 'kit' homes has become popular in recent years. The general principle is that almost all of the construction work is carried out

days lost to weather). All of this tends to come at a price, of

most all of the construction work is carried out off site in a factory and the home is delivered to site ready to put together, flatpack-style, in a matter of days. It has significant advantages in terms of standardising work quality, reducing the requirement for local tradespeople, as well as minimising time spent on site (meaning less

course, and there is the added disadvantage of not being able to change your mind once factory work has started.

is for Landscaping

The classic self-builder's mistake is to treat land-scaping as an afterthought for both budget and design purposes. It's not always easy, but try and include at least a driveway/entrance scheme in your design as well as some basic landscaping — you'll be surprised at how easy it is once the diggers are on site for other reasons. Plus, if you carry out the landscaping as per the approved scheme on your planning permission, you can reclaim the VAT (see V) on it — a huge incentive.



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FEATURE FOR BEGINNERS

is for Merchant
Despite many of the materials that self-builders specify being supplied directly, it's still vital to engage with a local builders' merchant if you're managing your own self-build project. At the very least you'll need a reliable and fast supply of sand and other building sundries in the construction stages of the project. Check out a few of your local merchants and establish an account with the one with the best terms—perhaps 30 or 60 days' credit, and a set discount.

is for Neighbours Politically important and expedient to a happy and successful site; on the other hand, many self-builders go through plot purchase to planning consent and the construction of a new home without a friendly smile or kind words with their neighbours. Thankfully for those unfortunate few whose experience is closer to the latter, although neighbours are consulted on planning applications, any objections they may have only carry weight on certain issues — so things like boundary disputes, loss of house value and the construction works themselves are not 'material considerations' and therefore not taken into account. However, if you can, try to keep neighbours on side and fully informed of your plans. If nothing else, a friendly neighbour can help with water supply and more besides.

is for Oak

Not many oak frame homes are self-built each year – probably around 100-200 – but it's fair to say that those that are end up being some of the more beautiful, perfectly replicating the charm of their medieval ancestors. Oak frame homes are usually supplied by specialist package companies, because the design of the house needs to reflect the unique qualities and structural issues that building with oak entails. While many new oak frame homes still have oak visible on the outside, an increasing number of oak frames are only visible internally, wrapped in a super-insulating shell of structural insulated panels.

is for Plot

The first, and by far the most difficult, hurdle on the track to getting your own project underway. The price of plots depends on the local housing market and you should aim for a plot of at least around 0.2 of an acre (for a guide, the homes on most housing estates have plot sizes around 0.08-0.10 of an acre), although most self-builds are on much larger sites than this. In actual fact, fewer self-builds these days take place on virgin green plots (usually garden sites) than in the place of an existing dwelling. With demolition costs low, planning not usually so much of an issue and the ability to utilise existing utility connections,

replacement is just as good a way of finding your dream 'plot'.

is for Quantity Surveyor
Many self-builders use quantity surveyors (QS) on their building project. Traditionally a fixture of large commercial projects, a good QS can help you establish a detailed specification document for builders to ensure you are not receiving inflated quotes for works, provide a detailed cost breakdown of your project to assist with planning and cashflows and, best of all, give advice on project management and budget controls. In many cases, homeowners who have engaged with a QS early on in their project insist that they have saved more in removing unnecessary costs than their fees, which tend to be a (low) percentage of the overall build cost, although some fixed-fee services are available.

is for Regulations

All construction work on new homes must comply with the Building Regulations — a set of standards that apply to everything from foundations to window efficiency. The usual course of events to gain approval is to submit your detailed building drawings to the local authority Building Control department and wait for its conditional approval. You'll then get a series of inspections at key stages of the project to ensure that the work you've carried out meets your original plans and, therefore, the regulations. You can view the Building Regulations in full online at planningportal.gov.uk.

one of the more confusing parts of the building world for beginners is the sizes referred to by builders and designers. For guideline purposes, a typical three/four bedroom detached house on a new developer estate will be around 120-140m². A small terraced house is likely to be nearer 70m². Self-built homes tend to be roomier, and so a typical four bedroom self-build will be in the region of 200m². The size refers to a measure called Net Floor Area — it's everything measured from the inside of the external walls (and includes partition walls). So a square, two storey house where the external walls measure 9x9m, will actually measure 8.4x8.4m (the 600mm reduction being because the thickness of both external walls has been removed) x 2 (for two storeys): 141m².

FEATURE FOR BEGINNERS

is for Tax One of the more confusing but potentially more attractive parts of the self-build process. There are two elements to the tax issue — Capital Gains Tax (CGT) and Value Added Tax (VAT). The VAT rules are simple — anyone building their own home can claim back the VAT paid on most labour and materials, usually amounting to a five-figure rebate at the end of the process. See VAT Notice 431NB (available at homebuilding.co.uk) for more information and the fine details on how to manage your claim. As your principal private residence is exempt from CGT, you won't pay it on the sale of your self-build (assuming it's your only home). The only way it could be charged is if you're lucky enough to be able to sell off a large (i.e. more than half a hectare) part of your garden for a building plot. One of the other benefits of self-build is that it's a fairly smart way around the stamp duty burden — you'll only pay stamp duty on a property purchase, which means that you'll pay on the plot but not the total build cost.

is for Underfloor Heating Underfloor heating (UFH) has been around in one form or another since Roman times, but it is self-builders who have brought it into the mainstream of today's housing stock. The key benefits of having warm water pipes in your floor structure are that, because it turns the floor effectively into a giant radiator, the required water temperature you'll need to generate is much lower than with radiators. Also, people seem to enjoy the benefits of not having hot-to-the-touch radiators (particularly with young children around) and freed-up wall space. Costs are coming down and whole-house systems cost around the same as top-end radiators. As no joints are buried underground, UFH systems are incredibly reliable and largely maintenance-free. They work best when the floor is covered with tiles, rather than carpet (with thicker underlay acting as an insulator stopping the heat getting up).

is for Ventilation Such are the high levels of airtightness in most self-built homes (particularly those built using timber and insulated concrete formwork construction) that maintaining a flow of fresh air is an important consideration - just as important as making sure warm air doesn't escape. Ventilation was traditionally something that happened to a home without much intervention (if you have an older home, you'll know that areas around windows tend to be quite draughty). More modern requirements insisted that trickle vents were placed into window designs to ensure air flow. However, more and more people want to manage their ventilation (to ensure greater control over warm air being lost as well as fresh air coming in) and the installation of mechanical ventilation (often with heat recovery) systems is beginning to become commonplace in self-build projects — and they are much more sophisticated than the traditional bathroom fan. There are alternatives, too — passive ventilation is another area to look into which in itself has a huge variety of offerings.

is for Warranties

You're not legally required to take out a structural warranty on your project, but you would be very wise to do so. If there is any possibility that you might sell your home then a solicitor will ask for the warranty details; any potential mortgage lender will also require evidence of a structural warranty.

is for You By far the biggest culture shock for first-time self-builders is the emphasis that the whole process places on them. You'll be the one making all of the key decisions and the best projects (i.e. the ones that are built most cost-effectively and are just what the homeowner wanted) are the ones where the self-builder has engaged with every decision. So get started now — there are plenty of them, from positions of garages and trees to construction and heating systems; from who is going to build the house and how much will you spend, to the positions of windows and the colour of the roof tiles. Experts will be able to help you with all of those decisions but if you're not excited about making them, then think again.

is for Zero Carbon

The Government has exempted sites with fewer than 10 units (including individual self-builds) from the need to achieve so-called 'zero carbon' standards. This standard tried to match the amount of CO₂ required to run the house with the amount of energy it produces. In many ways self-builders would be wise to come as close to zero carbon as possible. The additional cost of extra insulation and airtightness is minimal and the higher capital cost of renewables has been offset for the most part thanks to generous Government incentive schemes.







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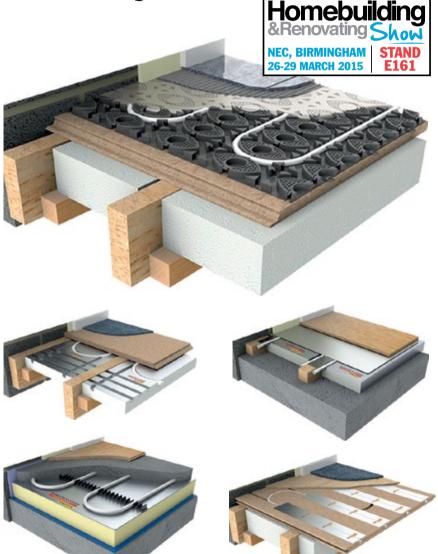


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PLOTS & PLANNING

Planning Permission: The Process Explained

If you've never done it before, applying for planning permission can be confusing. David Snell explains how it works



DAVID SNELL

The author of Building Your Own Home, David Snell is a 13-time self-builder and has been building homes for 50 years

ou'll have to apply for planning approval in almost all cases if you're carrying out a major remodelling, extension or self-build project. There are exceptions – work of a scale or scope that is small enough to fall within so-called Permitted Development (see homebuilding.co.uk/planning) - but the first-timer will likely need to know how the process of applying for and (hopefully) receiving planning approval works.

The Design

Drive around your area to see the types and styles of homes that find favour with the planners and get built. Most one-off homes and larger extensions will live or die by the standard of their design — make sure you present the scheme attractively.

Before you Apply

Wherever possible, try to make an appointment to see the planning officer for an off-the-cuff appraisal of your proposals. Use that meeting to assess your chances of success and to ascertain any additional documents or surveys (ecology, flood risk and so on) that might be necessary to validate the application.

Some local authorities will charge (there is no nationally fixed fee but expect to pay £50-£100) for pre-application advice. Those that do tend to treat this as a more formal additional tier in the whole application process may

require quite a lot more information.

Be aware, though, that nothing given out by the planners as part of pre-application advice is binding on the final decision.

Engage With the Neighbours

Neighbours will be fearful about what's going to happen and how it will affect their You are entitled to lobby members of the committee

THE QUICK READ

- >>> It's generally advisable to engage with your local authority before applying — known as 'pre-application' advice. It helps you to gain the best chance of success later on
- >>> In most cases your designer/architect will manage your application on your behalf
- >> Applications are determined either by the local authority planning committee (in the case of more controversial applications including almost all new builds) or under powers delegated to the case planning officer (usually for minor schemes)

property. Try to meet with them and explain what you are planning. Make it clear that you are going to be their neighbour and, in order to head off objections, consider whether you can amend your plans to take their worries into account. Bear in mind though that the more spurious objections of neighbours will not affect your chances of success.

Make the Application

The biggest expense is going to be the preparation of the plans, the commissioning of the necessary surveys and reports, and the collation of it all into one single package. The planning application fee of £385 (for a new build; £172 for an application which covers extensions and remodels) will be a very minor part of that overall expense.

The preparation of a cogent Design & Access Statement, which sets out the logic behind the design and the justification for it in both architectural terms and in the context of local planning policy is important; as is the accompanying letter, which should refer to any meetings or discussions that have

preceded the application.

Once You've Applied

Providing everything is in order, you will receive a letter giving you the reference number and a date (eight weeks for minor applications, 13 weeks for larger) by which you should have received a decision in writing. It will advise you that if you do not »

PLOTS & PLANNING THE PLANNING PROCESS EXPLAINED

have that determination within the allotted timescale, you have the right to extend the period (almost always a good idea) or seek to appeal against their non-determination.

In the meantime, the local authority will send out what is known as their 'consultations' to bodies such as the Highways,

Environment Agency, parish council, special interest groups and so on — some will respond, others won't.

Try to talk to the planning officer assigned to your case once the three-week consultation period is over so that they can chase up those that are late. In some local authorities, officers will be willing to discuss applications and make suggestions. In others, they are reluctant to enter into negotiations and will simply process the application to recommendation stage. When you ring, always start any conversation with the question, "What is the state of my application?", thus inviting the officer to make comments. If they have none, then leave it at that.

IN THE KNOW

- Outline or full? An outline permission gives approval in principle for a scheme with most details (matters) to be reserved until a second, later application. Most people go straight in for full approvals.
- Anyone can make an application you don't have to be a professional and you can now make them online at planningportal.gov.uk.

Committee or Delegated?

Most single home applications are granted approval by the case officers using delegated powers. Where there are other issues or a large number of valid objections, the planning committee of elected officials will make the determination. Both will take the recommendations of the officer dealing with the application into account but need not necessarily abide by them.

You are entitled to lobby members of the committee for support, which they may or may not give. Some local authorities will allow you to address the committee directly. If you do, make it short, cover all of the main points in favour and avoid rhetoric and inflammatory statements.

What if it is Refused?

Firstly, if it's obvious the application is going to fail, withdraw it. If you withdraw prior to the refusal being issued, then no refusal will be noted against the plot.

Consider an appeal. A small majority of appeals succeed but it is a long-winded process. If you can take on board the reasons for refusal and adjust a design to take them into account, it is often better to make a fresh (and free) application.

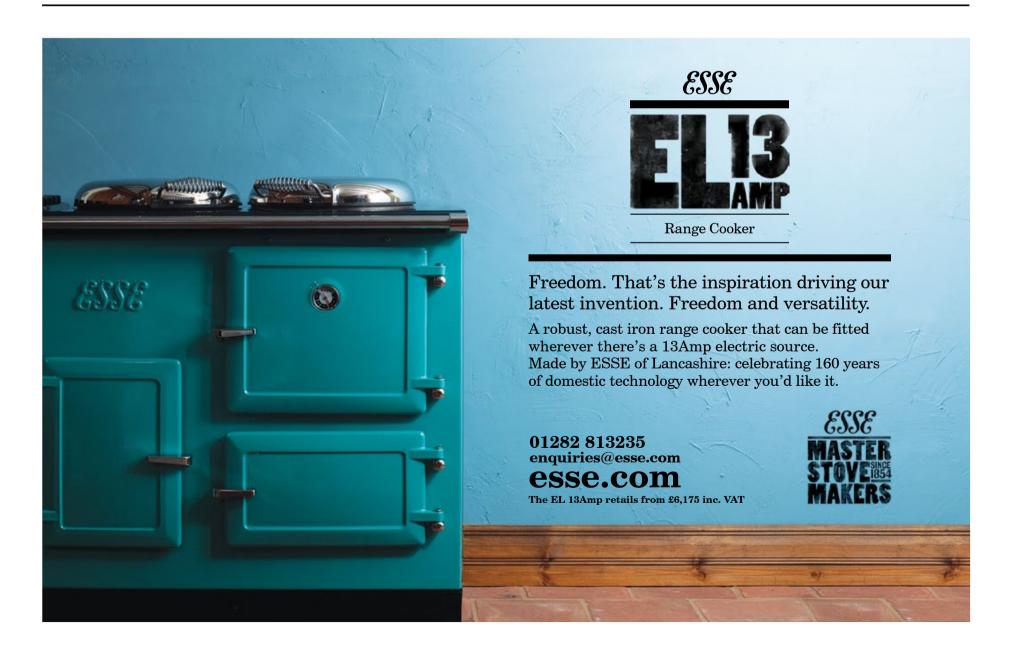
A PLANNING PERMISSION CHECK-CHART Get a design Do I need planning? YES NO Consider a certificate of lawful use, but you're good to go! (You may still need Building Contact the local planners for pre-Regulations app advice approval) (amend plans if required) Make a formal planning application **Planning** committee assess application after consultations and **Assessed under** site visit delegated powers by the case planning officer Decision made. This should be within • eight weeks of application for minor schemes **APPROVED!** REFUSED! Work must be The refusal notice will outline the reacommenced within three years of the sons for the refusal date of approval. The in the context of loapproval usually comes cal planning policy with conditions which must be discharged prior to work starting Resubmit your Appeal the amended decision. scheme free Visit <u>planning</u> of charge portal.gov.uk for more

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→ Do I have a chance? → Permitted Development guide

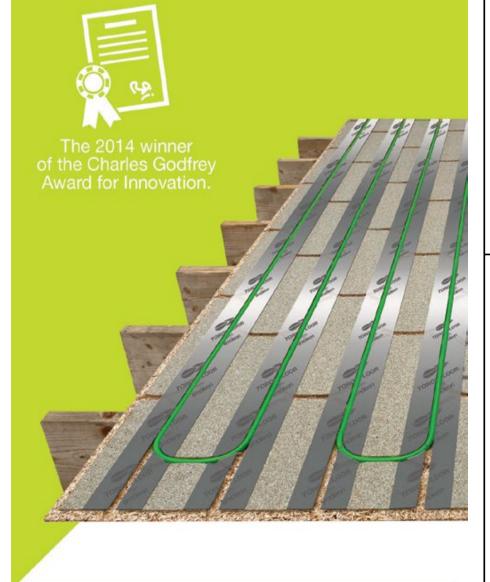
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- Heat pumps



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PROJECT PLANNER SELF-BUILD STEP-BY-STEP

Self-build Project Planner

However you're getting it built, you'll need to know how a house is constructed. Here it is, week-by-week — along with a checklist of things not to forget

SIX WEEKS PRIOR

- ⇒→ Obtain quotations from service suppliers, pay them and book them
- **>>>** Organise warranty
- → Arrange site insurance
- ➡ Inform all prospective

tradespeople of your schedule

- >>> Construct lockable insulated box and fix water standpipe
- → Check lead-in times

for main orders

- → Identify plant providers
- **>>>** Identify tipping facilities
- → Advise Building Control and warranty inspectors of commencement
- ⇒ Ensure electricity and water is on site (usually arranged months in advance)



PREPARE SITE

⇒ Groundworkers create site access

≫→ Clear site

and strip vegetable soil; stacking material to be retained out of the way

- ⇒ Set up site hut and equip with drawings and safety equipment
- **■→** Set up toilet
- ⇒ Secure lock-up/lorry container (hired in or purchased) to be positioned
- **>>→** Water board to bring supply to stopcock on boundary
- → Plumber to connect water standpipe
- ⇒ Surveyor marks out building on cleared site and transfers the lines to profiles well clear of any construction work
- ⇒ Bring in bricks and blocks and stack clear of future construction
- ⇒→ Set up mixer station close to cement store and sand heap



FOUNDATIONS/ OVERSITE

- ➡ Groundworkers excavate foundations
- **■→** Wait for approval

of Building Control and warranty inspectors

→ Position any reinforcement bars, mesh or cages in the trenches

⇒→ Position any compressible material or slip membranes required within the trenches

- ⇒ Lay ducts for services to enter through the foundations
- Arrange foot scaffold if necessary and shutter for any steps in the foundations
- → Pour concrete footings and tamp to level
- **⇒→** Obtain approval from building/ warranty inspectors to proceed
- ⇒ Bricklayers build up foundation blockwork to damp-proof course
- **>> Install cranked air vents**
- → Install drainage exit lintels
- ⇒ Fill cavities with lean-mix concrete to level with external ground level
- ⇒ Bed and lay damp-proof courses, linking these with any Radon membranes or barriers



START SUPER-STRUCTURE

⇒ Groundworkers to dig service trenches and lay pipes and

ducts to proposed stopcock/meter positions

⇒ Load out concrete floor beams to each bay and position

- → Install drainage and vent pipes, proud of the oversite
- pipes, proud of the oversite

 Infill floor beams with blocks
- → Lay coursing blocks and position ventilator grilles
- **■→** Brush grout
- ⇒ Arrange for Building Control/ warranty inspection
- Commence building superstructure
- >> Install templates for future windows and doors, etc.
- >>> First lift of scaffolding required



SUPERSTRUCTURE

⇒ Bricklayers continue superstructure brickwork and blockwork

including work on any chimneys

- >> Install and bed lintels including fireplace lintels
- >> Install flue liners as work proceeds
- >>> Build in meter boxes for gas and electricity
- ⇒ Electrician to install temporary consumer unit within electricity meter box
- ⇒→ Service suppliers to carry out their work to the boundary
- → Plumber to reroute water supply to stopcock position
- **⇒→** Electricity providers to install meter and connect
- ⇒→ Second scaffolding lift required
- Arrange crane to lift first floor beams onto each bay and position
- ➡ Position plasterboard batten clips
- Lay infill blocks



SUPER-STRUCTURE

- ⇒ Continue building superstructure to wallplate level
- ⇒ Third and then fourth lift of scaffolding required
- → Wallplate to be scarfed, bedded and tied down with proprietary wallplate straps
- >> Warranty inspection sometimes required
- Trusses as templates
- The Continue building up gable ends and chimney
- → Additional lifts of scaffolding required at the gable ends
- **→** Plumber to fit lead flashings, trays and skirts to chimney
- >>> Plumber to install vent pipes and flashing skirts as they come through the roof
- ➡ Bricklayers to top out and fit chimney pot
- ➡ Bricklayers to point chimney flashings



CONSTRUCT ROOF

Carpenters to sling roof trusses, and

trusses to be fixed down to wallplate

→ All binders and bracing to be fixed at node points

- **>>>** Dormers to be constructed at this point
- **▶→** Fascia and soffit to be fixed together with any necessary ventilation grilles or strips
- ■→ Warranty inspection sometimes required
- **>>>** Any roof tanks must be installed at this point



ROOF COVERING

begin to cut and lav

undercloaking to the verges

- » Roofers to felt and batten
- **>>>** Tiles/slates to be laid
- **>>>** Ridge/hip tiles to be laid and bedded
- >>> Valley tiles to be laid, or fibreglass or lead valleys to be laid
- » Plumber to dress down flashings and skirtings
- facias, soffits and barges



EXTERIOR & INTERIOR **FITTINGS**

→ Plumbers to fix guttering

>>> Window suppliers to fit external joinery

- → Plasterers to carry out any external rendering
- **■→** Scaffolding to come down
- → Plumbers to fit downpipes and connect to drainage upstands/gullies
- **External decoration**
- first fix by fitting door linings, building any studwork partitioning and fixing window boards
- **>>>** Carpenters to fix plasterboard noggings and box in vent pipes
- >>> Plumber and carpenter to liaise with building of any necessary stands in roof
- **>>>** Carpenter to fix loft trap



FIRST FIX

→ Plumbers to lay flooring membrane and insulation,

taping all joints and sealing up to the damp-proof course

- → Underfloor heating (UFH) loops to be laid and fixed
- → All first fix plumbing for hot and cold and waste within floor zones to be laid
- >> Internal gas pipework installed
- ⇒ UFH pipework to be brought to manifolds and outlet positions
- Supply and fix company to pump in and lay level floor screed and leave for three days
- → Protective hardboard/ cardboard to be laid on screed
- **■→ Electrician to fix carcass wiring** for lighting and power circuits together with all backplates
- to be positioned
- ⇒ Wiring taken to external lighting points
- → TV aerial/satellite cables to be installed to required positions
- **>>>** Internal telephone wiring to be installed to required positions
- → Home entertainment/smart systems/alarms to be carcassed



DRAINAGE/ EXTERNAL

→ Groundworkers to begin digging

the trenches for drainage runs

- Trenches backfilled to 150mm with pea shingle
- ⇒ Drains laid to required falls
- **>>>** Brick/concrete section manholes constructed, or purpose-made manholes, rodding eyes and gullies set in runs
- ■→ Building inspector to approve laid drains
- **■→** Drains haunched over with pea shingle
- → Drainage trenches backfilled
- **>>>** Work to connect to main sewer in road to be carried out by approved contractors
- Carpenter to finish boxings and noggings ready for plasterer
- Groundworkers to commence driveways and pathways
- ➡ Bricklayer to build any fireplaces and hearths
- **■→** Gas meter to be installed and connected
- → Plumbers and electricians to liaise on all cross bonding and earthing



CEILINGS/ DRY LINING

to be fitted by the carpenter

and protectively covered

- Dryliners/plasterers tack ceilings
- → All external and blockwork walls lined with plasterboard on dots and dabs
- → All studwork walls and pipe boxings tacked with plasterboard
- » All joints and angles filled and scrim taped
- **>>>** All abutments of differential materials jointed with mesh
- → All joinery to be sealed internally and externally with mastic
- **>>>** Dryliners/plasterers to skim coat all walls and ceilings
- → Decorator to paint/treat backs of all skirting and architraves
- **>>>** All roofing insulation to be installed



SECOND FIX CARPENTRY

- internal doors
- **■→ Skirting and**

architrave to be fitted by carpenters

- Bottom tread of staircase to be fitted. balustrading and handrails to be fitted, as well as linen cupboard shelving
- >>> Final fit of loft trap door and ladder
- Timber floors to be laid by carpenters or specialists and protected
- Ceramic floor tiles to be laid by specialist tilers and protected
- >> Carpenters/specialist suppliers to fit/build built-in bedroom and bathroom furniture
- Kitchen units to be fitted



SECOND FIX

→ All wiring connected

>>>

- to consumer unit
- **≫→** Boiler to be positioned,

plumbed and then wired in

- ⇒ Sink units to be plumbed in, earthed and cross bonded
- >> All sanitaryware to be fitted and plumbed in
- → Radiators and towel rails to be fitted and plumbed in
- → Underfloor heating loops to be connected to manifolds
- Electrician to check cross bonding and earthing to all sanitaryware, sinks, radiators, etc.
- ⇒ Boiler to be wired in; control systems and room thermostats to be wired in
- → Plumber and electrician to attend firing up and commissioning of boiler
- → All pipework and connections to be flushed through and pressure tested
- Central heating to be left on 'test'

PROJECT PLANNER SELF-BUILD STEP-BY-STEP

21-23

DECORATING

⇒ Worktops, made from the previously taken templates, to be fitted

→ House to be thoroughly cleaned with all debris and dust removed to outside

- ⇒ Decorators to snag any holes, blemishes or rough patches on walls, making good
- ⇒ Internal timber to be sanded smooth or rubbed down with wire wool
- ⇒ Decorators to paint all walls and ceilings, mist plus two coats of emulsion
- ⇒ Internal timber to be knotted, painted, primed, undercoated and top coat glazed, or internal timber to be two-coat stained
- ⇒ Specialist tilers to fix ceramic wall tiles to kitchen and utility rooms
- ⇒ Baths to be filled, in order to settle, before tilers fix any wall/splashback tiles
- >>> Water meter to be installed

23-4

LANDSCAPING

⇒→ Groundworkers or landscape gardeners to level the

ground and prepare

Topsoil from storage to be placed where required, with extra shipped if necessary

- ⇒→ Site hut to be removed or re-sited if intended for use as a garden shed
- **⇒→** Secure site storage to be sold off or returned to hirers
- → Groundworkers to complete driveway surface
- → Patio slabs to be laid
- ⇒ Bricklayers to build any required dwarf/decorative walling
- ⇒ Lawned areas to be levelled ready for seeding or turfed
- → Approved contractors to complete any bellmouth and kerbing to road
- **>>>** Telephone company to connect
- → Contractors to install TV aerials and/or satellite dishes
- → All trades return for any snags



COMPLETION

- >> Whole house to be thoroughly cleaned out
- **■→ All windows**

polished and all labels removed from glass and appliances

- → All polystyrene packing to be removed from cookers
- All stabilising bolts to be removed from washing machines/driers
- ⇒→ Site toilet and any remaining plant on hire to be off-hired
- » Readings to be taken on all meters
- >>> Central heating switched to 'run'
- ⇒ Local authority to be advised of completion to arrange for Council Tax valuation
- ⇒ Energy Performance Certificate to be prepared and sent to Building Control
- **>>→** Building Control final inspection and issuing of Completion Certificate
- → Warranty inspectors final inspection and issuing of warranty
- **⇒** Arrange protective covering for floor surfaces prior to delivery of furniture
- ⇒→ Switch self-build site insurance policy to homeowners' policy **①**

A Self-builder's Checklist

Things to make sure you do — before and after you start

- Ensure that planning permission has been obtained prior to commencement of works
- Do not arrange to start work until all conditions within the consent have been discharged
- ⇒ Do not start work until/ unless a Building Regulations application has been lodged
- ⇒→ Send off for quotations for services and utilities as soon as possible
- When you get the quotations, accept them and agree a timescale for their work
- If you can't get mains water in time, arrange a hosepipe with a neighbour or hire a bowser
- Organise hire of any plant, lock-ups and toilets
- Create accounts with local builders' merchants and readymixed concrete suppliers
- Check lead-in times for materials and add them to your project planning
- Theck availability of chosen trades/builders and plan your project accordingly

- Arrange self-build site insurance
- Arrange warranty providers
- Send in notice of commencement of work to Building Control and warranty providers
- Ascertain where and how spoil will be disposed of
- Identify plant hire outlets, including concrete pumps
- ⇒→ Be aware that reinforcement may be required in the foundations. Mesh and bar are easily obtainable but madeup cages will have a lead-in time
- Plan where materials will be stored on site
- >>> Set up the mixer station in a position where it can be replenished with sand and cement
- Order the floor beams well in advance
- Arrange the scaffolders in good time
- Start to choose second fix items and kitchens etc. by at least week 11
- >>> Finalise electrical outlet positions etc. by at least week 13
- Identify and commission an approved contractor for any

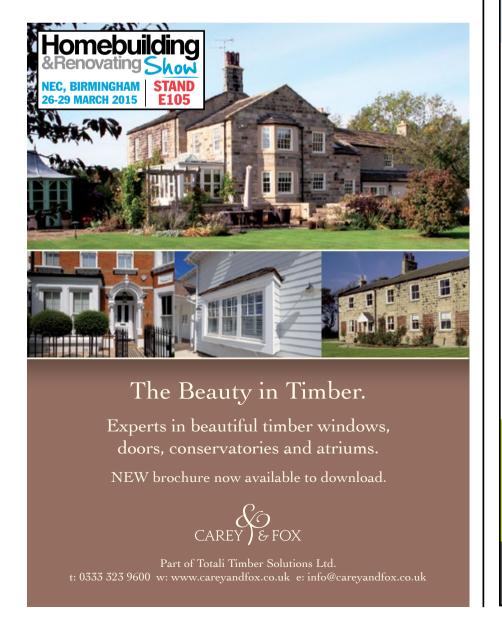
work within the Highway

- Don't forget that board or trestle scaffolding will be needed internally by the plasterers
- Run central heating on a low 'test' setting when installed
- ⇒→ Don't let the painters and decorators start or continue work in a dirty house — clean it thoroughly beforehand
- Badger all trades to get back before completion to snag their work and hold final payment until they do
- Off-hire plant and toilets as soon as practicable
- ** Your last tranche of mortgage money will depend on the provision of an Energy Performance Certificate, a Completion Certificate from Building Control and a Warranty Certificate from the providers
- Take meter readings before moving in and switch central heating to 'run' when moving in
- ➡ Inform your local authority when you move in and arrange for a Council Tax valuation



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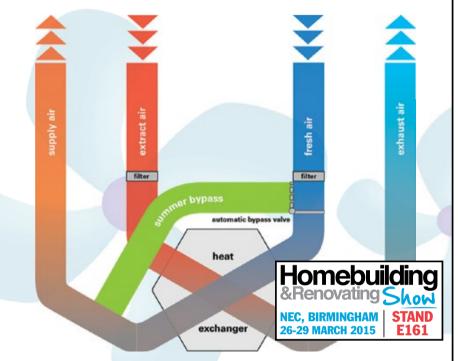


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ADVERTORIAL PHASELINE

Phaseline Renewables' Heat Pump expert Steve Bancroft explains

what you need to know

haseline Renewables are one of the UK's largest installers of renewable energy. They are a government-accredited designer and installer of renewable heating systems, and all of their installations conform to the strict RHI qualification criteria.

What is a heat pump? What is it used for?

A heat pump is fundamentally an energy transfer machine. It takes low grade energy from the ground, air or water source and condenses this energy into usable heat for your space heating and hot water requirements.

Where would a heat pump be best suited?

It makes environmental and economic sense to have a heat pump installed if you are using oil or LPG as your primary heating fuel. Ideally your property should be well insulated to utilise the heat that is generated efficiently.

What are the benefits?

There are many benefits of heat pump systems over traditional fossil fuelled heating systems including:

- Zero local emissions electrical supply means no smoke, ash, or refuelling
- Significant Fuel savings When compared to fuel oil or LPG
- RHI payments for seven years on domestic installations and 20 years for non-domestic installations

How much could you typically save on energy bills?

When compared with typical oil or LPG systems the energy savings can be up to 50%.

The systems are designed to meet criteria for the Renewable Heat Incentive. How does that work?

This means the design and installation of your heat pump system will meet and often exceed the requirements of MCS who award the RHI payments. The RHI scheme will then make quarterly payments to the owner of the heat pump system.

STEVE BANCROFT

Worked in many departments from technical and manufacturing to training and design He was part of the heat pump working group involving members from industry, academia and government responsible for compiling and publishing the MIS3005 literature for heat pump compliance. He has designed systems for Rio Ferdinand, Sean Wright Philips and Julian Clary to name but a few.





Left: Danfoss Air Source Heat pump We only install quality

products with the latest technological advances and manufacturer backed warranties for our installations.

Typical domestic annual payments will range between £600 and £7,000 depending on the property size.

What would you say to anyone considering a heat pump installation?

I'd stress how important it is to work with industry professionals. An MCS accredited company such as Phaseline will advise you on the most suitable system for your individual requirements. We provide aftercare for the life time of the installation and offer versatile service contracts to suit customer requirements.

We've been established for almost 10 years, we are MCS accredited and we only install systems that are eligible for the RHI. Our designs and quotations are free of charge with no obligation to order. Why? Because we are confident that our company will provide you with the source to a greener, cleaner and cheaper energy.



MORE INFORMATION? If you would like more information on heat pumps, biomass or any other renewable energy advice call us on 01142 945500 or visit www.phaselinerenewables.co.uk



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RENOVATION DIY

Plumbing & Electrics for Keen DIYers

There is a lot of conflicting advice out there on what you can and can't do yourself when carrying out a renovation. Natasha Brinsmead explains the options



NATASHA BRINSMEAD
is our Associate Editor and an
experienced renovator. She's in the
middle of a major renovation and
extension of an Edwardian home
— a lot of it DIY

kills and time allowing, there is no reason why the majority of a renovation project could not be carried out by the homeowner on a DIY basis. The cost savings can be huge (around 50 per cent of build costs are accounted for by labour) and there is a much better feeling of connection with the end result if you're heavily involved in the construction.

However, there are certain stages of a project which either have to be left to a registered professional or probably should be — meaning they are particularly hard to get right unless you are in the trade. The danger is that money you were planning on saving actually gets washed down the drain as you pay for someone to put right your mistakes or pay to replace expensive materials ruined through a lack of experience. The two key areas of interest are the ones with the most likely threat of accident if done badly — electrics and plumbing. (It's worth pointing out, rather morbidly, that all elements of building work carry danger — falling in particular is a major threat for everyone from brickies to plasterers.)

Electrics

Perhaps surprisingly, homeowners can carry out pretty much whatever electrical work they like themselves. Good news? Well, sort of. If you decide to go down the DIY electrics route

then you need to be aware that unless you are a 'registered competent person' who can self-certify compliance with the Building Regulations, certain (notifiable) work will need to be inspected, approved and certificated by either your local authority, a private approved inspector or an electrician who is a 'registered third-party certifier.' In addition, you will also

Second fix work... is safer in terms of what can go wrong

have to notify whoever is going to be certifying the work before the work is undertaken.

The jobs identified as 'notifiable' are:

- The installation of a new consumer unit or fuse box;
- The installation of a complete new circuit (such as a lighting circuit or a new circuit for a cooker);
- Alterations to existing circuits (namely around baths and showers in England, but also in the kitchen and outdoors if you live in Wales).

Bear in mind that any electrical work you carry out on a DIY basis must comply with the requirements set out in Part P of the Building Regulations, that you will have to pay to have the work certified and that many electricians can refuse to certify work carried out by homeowners.

Finally, ask almost any electrician and they will have a story to tell of the time they were called out to put right the wrongs of an enthusiastic DIY electrician, and watch on as they wince when they tell you what it ended up costing the homeowner. Then decide how you might like to proceed.

Plumbing

Providing the plumbing work you have your eye on does not in any way involve gas, then you can give it a go — in fact the use of plastic pipes and connectors (meaning no tricky welding) has made many plumbing tasks more achievable for the competent DIYer. It is even possible to find DIY warehouses and plumbers' merchants offering short courses aimed specifically at DIY enthusiasts, which could prove beneficial.

If you are unsure of your skills, it is worth noting that many homeowners choose to leave the more tricky first fix work to their plumber — mistakes that have been tiled or plastered over, for example, are more costly to put right than those which are more easily accessible. Second fix work, such as

installing sanitaryware and taps, is safer in terms of what can go wrong and also tend to be simpler.

When it comes to gas, leave it well alone. You must hire an approved tradesperson registered with Gas Safe (who replaced CORGI as the relevant body). They can self-certify all work and issue you with a certificate.







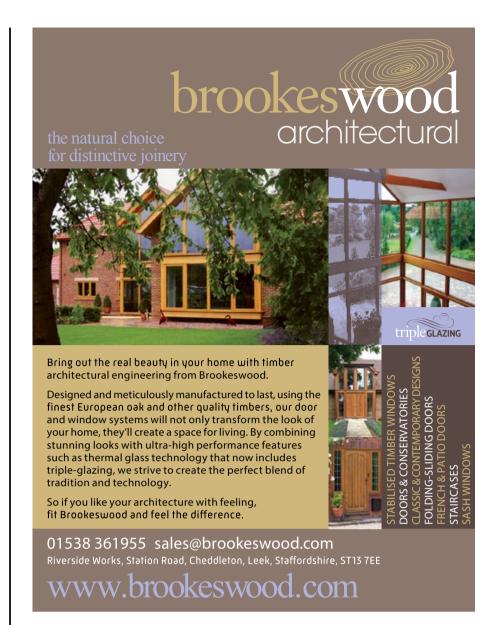
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BUILD COSTS

How Much Will My Windows Cost?

Whether it's a single replacement or a whole-house fit-out, David Snell analyses how to estimate window costs

THE QUICK READ

- The big list prices shown in joinery brochures are RRP only and you should be able to manage a discount of between 20-60 per cent on these prices through a merchant (or in some cases direct)
- Typical-sized individual windows will cost between £200-£1,000 depending on factors such as material choice
- The best ways to minimise
 costs involve using off-the-shelf
 sizes (although some suppliers only make made-toorder) and potentially finishing them yourself

etting a handle on window costs is tricky. The problem is that there are so many different window styles, opening configurations, glazing options and materials — all of which can affect the price. Add to this mix a complicated and far-from-transparent approach to pricing (hardly unique in the building industry it should be noted), it can feel all but impossible to establish a budget for a single replacement window, nevermind a whole-house fit-out.

How to Get a Price

The brochures and price lists published by the big joinery companies will provide prices — however these are rendered virtually meaningless by the application of discounts, which can vary from 20-60 per cent. So what discount should you aim for? Well, that depends. According to Tony Pell from JELD-WEN: "We mainly sell through builders' merchants who receive a discount on the RRP. They pass this saving onto customers who have a trade account, so we would recommend setting up an account with your local merchant." In the end it does seem that the only true cost is the one that is accepted, following production of a full schedule and specification.

Off-the-shelf windows are obviously cheaper than bespoke (made-to-order). At the cheapest end of the market are the unpainted softwood timber windows where a 1,200x1,200mm casement window with one opening light can be found for



DAVID SNELL
David is the author of Building Your
Own Home, a 13-time self-builder and
has been building homes for 50 years

around £170. At the top end of the market are the bespoke windows in composite timber with aluminium or PVCu cladding, where a likely price would be in the region of £550, while sliding sashes in hardwood, according to Chris Forbes from Lomax+Wood, cost from around £800-£900. And somewhere in the middle are the most popular ranges of PVCu joinery where a fully finished unit would come in at around £240. Switching to triple glazing might lead to a 50 per cent increase in these prices.

What Affects the Price?

Order more, order simple, and order off-the-shelf is the mantra if you want to keep costs down. The choice of material is perhaps the biggest factor with increases in price, followed by the configuration and method of opening. The very cheapest windows have butts (hinges) and so do the most expensive bespoke options. Most have friction swivel hinges, where the opening light swings clear of the casement.

Price is also affected by your total order. "All the prices are of course determined by economies of scale," says Chris Lomax. "The larger the number of made-to-order windows of a similar size and specification, the lower the unit cost. The more windows which are the same the easier it is to manufacture and thus lower the unit price."

How to Reduce Costs

You might think that buying cheap timber windows, fitting them yourself and painting them would save money, but not necessarily. It only costs around £55 for a tradesperson to fit the window, but the paint for each window would cost around another £38 — and if you costed in the labour for that, it would equate to more than the PVCu standard range option. So the best way to reduce real costs is to stay in the middle ranges and to use standard joinery configurations.

FIND OUT MORE OVER THE PAGE The Build Cost Calculator

The Build Cost Calculator

A simple cost-estimating guide for people building their own home

BUILD ROUTE A

ne of the most important aspects when planning your self-build or home renovation/extension project is working out how much it is going to cost.

This figure will depend on the size and shape of the house, the level of your own involvement, where in the country you intend to build, and the materials you're going to use. If you can make even rough decisions about these factors, then you can begin to work out how much it is going to cost.

As a very general rule of thumb, expect a building plot to cost between a third and a half of the end value of the finished house. The costs of building a house will then depend on the variables listed above. All building work is usually quoted on a cost/m² basis. For example, a typical new four bedroom self-built home is around 200m² (with 100m² on two storeys) and usually varies between £900-£1,500/m² (although self-builders achieve costs between £300-£3,000/m²).

Renovation costs are more difficult to establish as they involve many variables, but allow at least £1,000-£1,300/m² for work. This, added to the cost of the plot/house and with a 10-30 per cent contingency, should result in less than the final end value of the house.

The table below, based on information from the Build Cost

BUILD ROUTE C

Information Service (part of RICS), is updated monthly to help you work out a more accurate estimate (note, however, that these figures are for build costs only and do not account for VAT, which is not charged for self-build projects). There is an interactive online version at homebuilding.co.uk/costs which guides you through the process.

BUILD ROUTE D

HOW TO USE THE TABLE

1. Identify your build route from the four options; 2. Identify your expected level of specification: 'standard', 'good' or 'excellent'; 3. Identify the estimated size of your finished house (either single or two/ more storeys); 4. Choose your location; **5.** Multiply the figure by your house size

BUILD ROUTE B

			DOILD ROOTLA			DOILD MOOTED			20.22 312 0		DOILD ROOTED		
		(DIY + Subbies)			Subbies)			(Builder/Subbies)			(Main Contractor)		
SINGLE STOREY		Standard	Good	Excellent	Standard	Good	Excellent	Standard	Good	Excellent	Standard	Good	Excellent
>90m²	Greater London	1175	1359	1634	1244	1439	1730	1313	1519	1827	1382	1599	1923
	South-East	1030	1192	1433	1091	1262	1518	1151	1332	1602	1212	1403	1687
	NW, SW, East & Scotland	937	1085	1304	992	1149	1381	1047	1213	1458	1102	1276	1534
	Mids, Yorks, NE & Wales	896	1037	1247	949	1098	1320	1001	1159	1394	1054	1220	1467
91-160m²	Greater London	1076	1305	1696	1139	1382	1796	1202	1459	1896	1265	1536	1995
	South-East	944	1144	1487	999	1212	1575	1055	1279	1662	1110	1346	1750
	NW, SW, East & Scotland	859	1042	1354	909	1103	1434	960	1164	1514	1010	1226	1593
	Mids, Yorks, NE & Wales	821	996	1295	870	1055	1371	918	1113	1447	966	1172	1523
161m²+	Greater London	958	1256	1576	1014	1330	1669	1070	1404	1761	1127	1478	1854
	South-East	840	1101	1382	889	1166	1464	939	1231	1545	988	1296	1626
	NW, SW, East & Scotland	764	1002	1259	809	1061	1333	854	1120	1407	899	1179	1481
	Mids, Yorks, NE & Wales	730	959	1203	773	1015	1273	816	1072	1344	859	1128	1415
TWO STOREY													
90-130m ²	Greater London	1130	1308	1606	1197	1385	1701	1263	1462	1795	1330	1538	1890
	South-East	992	1147	1409	1050	1214	1492	1108	1282	1575	1167	1349	1658
	NW, SW, East & Scotland	902	1044	1283	955	1105	1359	1008	1167	1434	1061	1228	1510
	Mids, Yorks, NE & Wales	862	999	1226	913	1057	1298	963	1116	1370	1014	1175	1442
131-220m ²	Greater London	952	1153	1462	1008	1220	1548	1064	1288	1634	1120	1356	1720
	South-East	835	1011	1282	884	1071	1357	934	1130	1433	983	1190	1508
	NW, SW, East & Scotland	759	920	1167	804	975	1235	849	1029	1304	893	1083	1372
	Mids, Yorks, NE & Wales	727	880	1115	770	931	1181	812	983	1246	855	1035	1312
221m²+	Greater London	878	1125	1412	930	1191	1495	982	1257	1578	1033	1323	1661
	South-East	771	986	1239	816	1044	1312	862	1102	1385	907	1160	1457
	NW, SW, East & Scotland	701	897	1127	742	950	1193	784	1003	1259	825	1055	1326
	Mids, Yorks, NE & Wales	671	857	1078	710	908	1141	750	958	1205	789	1009	1268

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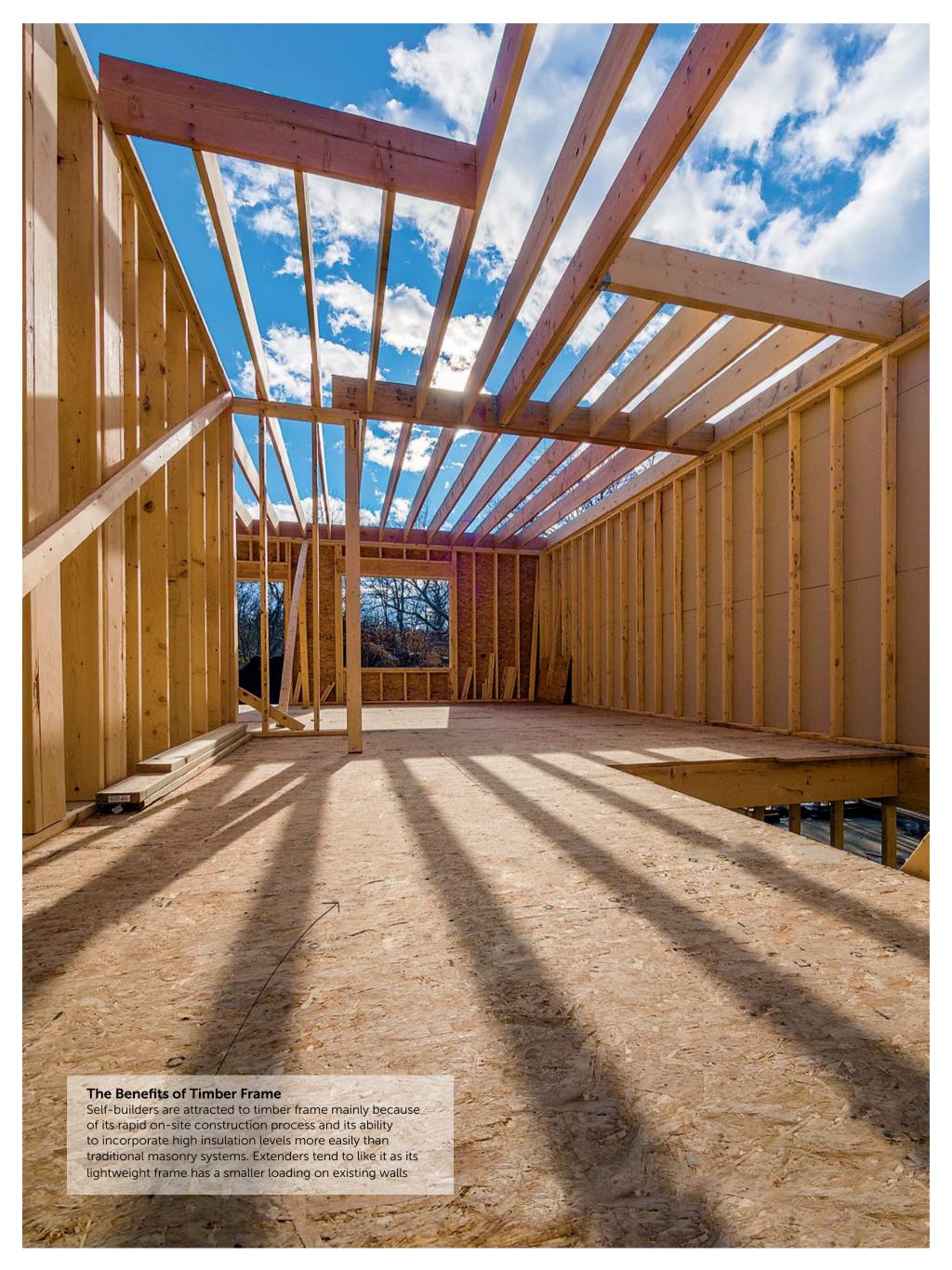


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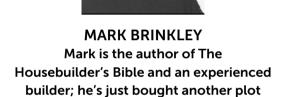


How to Choose a Timber Frame System

So you want to build or extend using timber? As Mark Brinkley explains, you'll have plenty of decisions still to make

THE QUICK READ

- Timber frame systems enjoy a popular niche among self-builders looking for a fast build time on site and factory standards
- There are several different types of timber frame system, from open 'stick-built' systems through to panels delivered to site with insulation, wiring and plumbing pre-fitted
- Most innovation is based around using engineered timber to achieve bigger spans and greater factory finishing for better airtichtness in many value the recent lever II.



imber frame is the dominant form of housebuild-

imber frame is the dominant form of housebuilding in northerly latitudes throughout the world. Wherever there are lots of conifer trees, the locals use them to construct their homes. The further north you go, the more prevalent timber building becomes and, not surprisingly, the acknowledged experts are the Canadians and the Scandinavians. We see this northerly bias even within the British Isles where there is a marked preference for timber frame in Scotland, whereas south of the border it has only ever been a minority pursuit.

The Scottish experience is instructive. Almost all timber used for housing in the UK is imported, so the reason the Scots have taken to it isn't because it's conveniently growing in their backyard. Instead they appreciate that timber framed buildings don't need time to dry out and are very quick to build. These qualities are invaluable when the weather is wild and the hours of winter daylight few. Timber frames also have a well-earned reputation for delivering warm, comfortable homes.

Traditionally, a large number of UK-wide self-builders have seen things in much the same way as the Scots. Whereas most professional developers south of the border take little interest in moving away from their tried and tested methods, self-builders are more open to new ideas and have long embraced timber frame as an excellent

The new emphasis is on achieving high airtightness levels

way to build. Statistics are hard to come by, but anecdotally we reckon that around a third of UK self-builders use timber frame construction, or one of its related methods. For timber frame is no longer a homogeneous product — it has evolved through the years so that its customers are now faced with a range of choices.

Open-Panel Systems

At its most basic, timber frame walls consist of timber studwork fixed in place with sheets of plywood or, more usually, orientated strand board (OSB). The studwork

doesn't have to be that thick — 38x90mm is usually structurally adequate for a two storey house. The strength and rigidity is supplied by the board, which, when nailed to the studwork, makes a very rigid box known as an open-panel, into which you add insulation on site. The frame is wrapped on the outside with a waterproof barrier and then wrapped around this are the external wall elements, which can be either built up out of the ground (brick or stone), or hung off the timber frame walls — as would happen with timber cladding or tiles.

The timber frame factory produces these panels, leaving holes where the doors and windows will be placed later, and then ships them off to site where, together with flooring elements and roof trusses, the superstructure of the house is erected in a few days. The roof is left with a waterproof covering and, once the frame erectors have finished, work can commence both inside and outside of the house. It's very speedy and you can work in the wet: you can see why the Scots love it.

Open-panel timber frame became the standardised way of doing things in the UK in the 1970s and it's still widely used, though the timber sections tend to be rather wider than 90mm

these days because the insulation standards have risen. Today, most timber framers now use either a 140mm or 180mm frame depth.

Closed-Panel Systems

While open-panel framing is quick and flexible compared with on-site construction, it still leaves a lot to be done on site.





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INSIGHT TIMBER FRAMES

In countries such as Sweden, Germany and Switzerland, where self-build is the prevalent way of delivering family homes, there are many housebuilders who have taken the process to another level so the walls are virtually finished in the factory — hence the term closed-panel. The floors and the roof are also delivered in semi-finished panels and even the electrical wiring and the plumbing is pre-installed so that there is very little to do on site after the house is delivered. The more work that is carried out in the factory, the less time is spent on site.

As with many things in timber frame, there is no clear-cut distinction between open-panel and closed-panel. Many people interested in closed-panel homes gravitate towards Scandinavian and German businesses working in the UK market, but homegrown options are appearing. One such is The Timber Frame Company (TTFC), whose sales manager Leigh Porter commented that the distinction is "usually drawn by whether pre-glazed joinery is pre-fitted into the panels in the factory". If it is, then the erection service has to switch to cranes and, once cranes are used, the panel sizes can get much bigger. Again, the more work that is done in the factory, the less time is spent on site.

Structural Insulated Panels (SIPs)

SIPs construction is sometimes referred to as timber frame without the timber. The strength of the panels derives from bonding insulation within an inner and outer skin of board to make a very rigid, highly insulated shell. It's a technique originally developed in the USA in the 1950s and has occupied a small but thriving niche within the wider timber frame industry — principally selling to people wanting higher levels of insulation and airtightness. One area where SIPs have proved especially adept is in providing open or vaulted roof spaces, where the panels are laid over beams.

More and more, we are seeing established timber frame businesses like Kingspan Potton offer their customers not only a choice of house types, but also building methods. Customers can elect for a SIPs build, which is usually 5-10 per cent more expensive but offers lower heating costs. SIPs homes are always fitted with mechanical ventilation systems, whereas with traditional timber frame it remains an additional option.

Other timber frame businesses, such as Scotframe and Flight Timber, are now producing pre-insulated walls with several different elements and it's no longer easy to tell where timber frame ends and SIPs begin. Technically, if the load is borne by the vertical timbers, then it's timber frame, but most SIPs systems have timber elements encased within them.

Where is the Innovation?

The demand for ever lower U values is driving the industry forward and is the reason behind innovations in wall techniques. Currently, the UK regulations seem to be happy with a U value of around 0.19, but this is expected to fall to 0.15 in a couple of years, which is very close to PassivHaus level. There is really very little point in building to even lower U values than this because the added energy savings are so small that it doesn't justify the extra cost, the extra material use or the added wall width. Instead, the new emphasis is on achieving very high airtightness levels — something that SIPs and closed-panel systems are inherently good at.

THE DIFFERENT SYSTEMS

The variables between the different systems are more shades of grey than black and white.

Here are some examples of the key systems:



Structural Insulated Panels

Pre-cut structural OSB sandwich panels with either polystyrene or polyurethane insulation factory-fitted.



Open-Panel

After being erected and panellised, the frame is fitted with insulation and then 'closed'.



FRUCTURAL TIMBER ASSOCIATIC

Cross-Laminated Timber

Super-strong engineered timber can be used in panels or for posts and beams.

INSIGHT TIMBER FRAMES

Cross-Laminated Timber (CLT)

If SIPs are niche, CLT is positively cliquey. Here, the walls are made up of solid timber, albeit cross-laminated or engineered timber panels. It's a style of timber building that has grown in popularity, mainly in Austria, and is mostly used for larger buildings like schools and blocks of flats, where structural strength is more important. There are a few architects in the UK, like Mole Architects in Cambridge, who have specified it on family homes and it makes for a stunning structure where the timber can be shown off to its best advantage. But unlike the frame systems, the insulation isn't embedded within the walls and so it has to all be built up externally on site. CLT has to date been used on very contemporary designs and it has a growing fan base — so much so that moves are afoot to start manufacture in Scotland using native timber.

How to Choose

In terms of cost, it's the original open-panel systems that remain the cheapest to produce, but as the requirements for lower U values and better airtightness levels increase, the cost differentials are being narrowed. The SIPs and closed-panel options tend to cost something like 10-15 per cent more for the frame, but offer better performance and less site-time in compensation. Bear in

Timber frame tends to work best with simpler-shaped structures

mind that the timber frame element of a house is rarely more than 30 per cent of the overall budget, so the added costs may fall to as little as 3-5 per cent on the overall build total — which is little different to what you might spend on a more luxurious kitchen or a whole-house lighting scheme.

Perhaps of more interest to self-builders is how timber frame stacks up against traditional masonry builds. In terms of cost, there isn't a clear winner. The cost of masonry builds tends to go up and down with market conditions — sometimes bricks are hard to come by and bricklayers hit the headlines for charging £1,000 a week. In contrast, timber frame prices tend to vary much less. In terms of buildability, timber frame tends to work best with simpler-shaped structures and it really comes into its own when combined with lightweight wall claddings like timber, tiles or render on boarding. This can reduce wall widths by up to 150mm, which adds a surprising amount to internal floor areas.

MORE TIMBER FRAME ADVICE ONLINE

Timber Frame Repairs SIPs Guide

Visit homebuilding.co.uk/timber-frames

THE DIFFERENT SYSTEMS



Oak Frame

A traditional type of post and beam framing, the oak is now commonly encapsulated in timber panels.



Closed-Panel Innovations

Frame Wise's Wise Wall system is effectively a twin frame full-filled with insulation (similar in principle to a full-filled cavity wall). At a depth of 270mm it can achieve U values of 0.09 kW/m².



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PLOTS & PLANNING

106 Exemption Hits a Little Local Difficulty

Local authorities are in open revolt over the Government's recently announced exemption for self-builders from Section 106 payments. Sally Tagg advises



SALLY TAGG
Planning consultant Sally Tagg
(foxleytaggplanning.co.uk) specialises
in self-build issues and advises the
DCLG and local authorities on policy

hat happens when your local authority acts against national planning guidance? Self-builders are about to find out, as many local authorities are refusing to implement the changes that allow self-builders (and anyone building 10 units or less) exemption from Section 106 payments.

Back in December 2014, the Housing & Planning Minister Brandon Lewis announced the exemption, however many self-builders currently applying for planning permission have been informed that these contributions will still be required to gain permission — some totalling £10,000s.

Discussions with some of the local authorities that are still seeking these contributions have highlighted a range of justifications as to why the Section 106 charges continue. These include assertions that the "changes are only guidance", and "a viability assessment is required when submitting the application for eligibility purposes."

In many ways, it is still early days — not to mention the local implementation of national planning policy often takes months to 'settle down' after interpretations and implementation (and appeals!). Dialogue between local government lawyers and the Department for Communities and Local Government (DCLG) is ongoing. Indeed, West Berkshire and Reading

councils are the first to (jointly) challenge the Government with a judicial review the outcome of which will have important and significant consequences.

Those local planning authorities with recently adopted local plans appear to be taking a more bullish approach and are arguing that new local plan documents take precedence over this policy change.

If the local authority is resolute... an appeal should be considered

THE QUICK READ

- The Housing Minister recently announced that selfbuilders will no longer have to make Section 106 payments (fees towards local infrastructure)
- >>> However, many local authorities are refusing to implement the change and insisting that self-builders pay up
- ⇒→ Self-builders in this position have several options. The outcomes of the judicial reviews recently launched will have a major bearing — so if you can wait for them, do so. Your other options are to pay up or, preferably, request a review on viability grounds. You could also appeal the charge, but the process is lengthy, potentially expensive, and you aren't guaranteed to win

So What Do You Do?

This uncertainty is understandably confusing, but the problem in giving advice is that Section 106 charges are not being consistently sought in the same way across the country.

Generally speaking, there are a number of options available to those who have been asked for the charges but have yet to pay since the new policy has come into force. Even after an agreement has been reached, an option is available for a request for review on certain grounds such as viability. As such, due thought should be given to the timing of any payment.

If the local authority's legal team is still reviewing its policy, ask your planning officer to delay your Section 106 agreement until it is resolved. If, however, the local authority is resolute, then an appeal should be considered. Although this process can be lengthy, the benefits of winning could be considerable.

If you have received permission and agreed a Section 106

before the changes were announced, then you can apply to have this removed if payment has not been made.

It's certainly not an easy situation. The hope is that clarity will come in the coming months but, for now, try and avoid paying where absolutely possible because, once you've paid, it will be difficult to get a refund.



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HEATING & PLUMBING SOLAR: THE OPTIONS

Which Solar Panel: Thermal or PV?

You've decided on solar panels, but which type — hot water or electricity — is best for your home? Tim Pullen weighs up the pros and cons of both options



TIM PULLEN
An expert in sustainable
building and energy
efficiency, Tim runs the
green home consultancy
Weather Works

ight as a form of energy needs converting to heat or electricity in order to be of use in running a home. Solar thermal panels convert light to heat (more specifically, hot water) and photovoltaic (PV) panels convert it to electricity. Light is available to us every day, to a greater or lesser extent, and both thermal and PV panels produce energy every day, to a greater or lesser extent. So how do you choose between the two? First of all, we need to look at how both systems work.

How Does Solar Thermal Work?

Solar thermal systems come in two forms: flat plate and evacuated tubes. Both produce hot water, yet evacuated tubes are more efficient than flat plate — and more expensive. Flat plate panels can be mounted on-roof (i.e. fixed on top of existing tiles) or in-roof (i.e. replacing roof tiles to maintain the overall roof shape), or be ground-mounted on a purpose-built frame; tubes can be similarly mounted, but cannot be mounted in-roof.

A typical solar thermal system will comprise of: two flat panels (4m² in total size), or 20 to 30 tubes; a fluid to deliver the heat; pumps; a large (200 litre or larger) hot water cylinder; and a control system. The cost will be in the order of £3,000-£5,000 (including VAT at 5%). The total price will depend on factors such as whether tubes or flat plates are specified, the mounting arrangement and the supplier.

A domestic system will typically produce 1,800kWh to 2,000kWh per year. The Renewable Heat

Incentive (RHI) pays 19.2p/kWh – which is around £345 per year – increasing with RPI, and will also save around £100 in gas bills.

One factor to bear in mind is installation. This is relatively straightforward when starting from scratch with the heating and

The suitability of the roof is a big issue

THE QUICK READ

- ⇒→ Solar PV panels (which generate electricity) need more roof space than solar thermal (which generate hot water)
 a 4kWp PV system requires 32m² of unshaded roof space
- The price of PV panels has fallen in recent years; now there is little to choose between PV and solar thermal in terms of capital cost. They provide a similar return, too
- The roof pitch and orientation are particularly critical when it comes to citing solar PV
- >>> In retrofit projects, PV is typically easier to install than solar thermal; the latter requires a hot water cyclinder

plumbing in a new build. However, solar thermal systems need a hot water cylinder, and they need to be separated from an existing space heating system if they are to benefit from the RHI (more on this later) — which complicates retrofit installations.

And Photovoltaic Panels?

Photovoltaic technology is far more complex than solar thermal, meaning that there is more variation in appearance, performance and price between panels. This also means that there is more room for research and development; as a result, the price of PV has plummeted in the past few years.

The Feed-in Tariff (FiT) is an important factor when it comes to PV. Under the FiT structure, 4kWp is the largest solar PV system that can typically be installed on a domestic property. If you opt for a 4kWp system you will need 32m² of unshaded roof space. It will cost in the range of £6,000-£7,000 (including VAT at 5%) and will produce between 3,000kWh and 3,400kWh per year, depending on the quality of the system and where you are in the country. The Feed-in Tariff pays 13.88p per kWh

(as of 1 January 2015), and so a typical system will return about £450 each year, increasing with RPI. It will likely save in the region of £160 on electricity bills. The export tariff is currently 4.2p/kWh, so the system could produce a further £130 from exported excess electricity.

}

THE WARMER HOME SOLAR THERMAL VS. PV

There are a lot of claims made about how much Grid electricity consumption a PV system will save. The major factor is how the house is occupied. A normal work/school occupation pattern implies that there is no one at home to use the electricity when it is produced during daylight. Those working from home or retired can, obviously, use a lot more of the electricity produced by PV.

For budgeting purposes, a figure of 40% of the total production is the generally accepted norm. So around 1,280kWh will be used from a 4kWp system that produces 3,200kWh per year.

Why Orientation and Inclination are Critical

It's important to consider that with solar PV, the kWp (i.e. 4kWp) is the rating of the system, not its output. The 'p' stands for peak and denotes the maximum that the system can produce in ideal conditions. For instance, the system might produce 4kW at midday on 21 June, on a cloudless day and where the system is installed facing exactly true south at an inclination of 42° from horizontal. For the rest of the year it will produce something less than 4kW — mostly a lot less. With PV, the performance starts to drop off quite sharply with an orientation north of south-east or south-west.

The same is true for solar thermal, but to a lesser extent. Solar thermal systems, especially in evacuated tube form, are more tolerant of orientations other than south, and there are flat plate panels available specifically for flat roofs, too. Having said that, there must be some 'south' in the orientation. Anything north of due east or west is of no use.

What Can the Energy be Used for?

Solar thermal systems produce only hot water. The Government imposes further restrictions, in that RHI eligibility rules require that the hot water can only be used for sanitary purposes; that is, it has to come out of a tap or shower. It can not be used for space heating or for heating swimming pools.

That presents an obvious problem with how the hot water cylinder distinguishes between sanitary and heating uses. There are one or two cylinders that can do this, such as the Chelmer Ecocat, but if you do not have one of these, this can mean significant changes to an existing boiler and plumbing system.

PV systems usually produce fairly small amounts of electricity and that is only in daylight hours. So, again, the uses are limited typically to low-load, continuously used items like fridges and freezers. PV is, however, increasingly being used to heat water using a control system such as Immersun or 4Eco, which diverts excess electricity to the immersion heater. The problem is that the immersion heater needs at least 3kW to power it and the PV system will seldom produce that. There are ways round this issue through the use of transformers to enable 110v rather than 240v (try powerreducer.co.uk). These systems cost anywhere between £50-£400 plus installation.

IN THE KNOW

Flanning consent for a system mounted on an existing roof is not usually needed, but it is always worth checking. Usually a phone call (seldom a quick call) to the local planning authority is all that is needed. If the building is listed or in a Conservation Area then consent is almost certainly needed.

Solar tiles are designed to be used in place of ordinary roof tiles. A tile system will typically cost about twice as much as an equivalent panel system to produce the same amount of heat energy. As a consequence, tile systems are normally only considered where panels are not an option for aesthetic or planning reasons (i.e. Conservation **Areas and listed** buildings).

A good PV array with a good control system is said to meet the whole of a modern house's heating and hot water needs through spring and summer. It's quite a claim, but for an additional cost of £400+ it's a better idea than a solar thermal system.

Is a Combined System (PVT) Worth Considering?

Installing both PV and solar thermal is difficult to justify in financial terms alone. A better alternative is PVT (photovoltaic thermal). As the name implies, this system produces both electricity and hot water from the same panel.

The capital cost of such systems is about the same as solar thermal and PV combined to achieve the same amount of energy, and starts at around £5,000. As yet, the technology only benefits from the FiTs scheme, not RHI, but there are adaptations and additions to the technology that make it an exciting opportunity for new build projects.

So Which Should You Choose?

The suitability of the roof is the big issue. Investing in a compass and looking at the roof at different times and in different light conditions will help you to establish the orientation and the likelihood of shadowing. Websites such as uksolarenergy.org.uk are a useful tool in calculating what the efficiency impacts are likely to be.

The fall in the price of PV in recent years means that now, in terms of upfront costs, there is little to choose between PV and solar thermal — the capital cost of both is similar, and both offer a return on investment of a little over 11%. Both have broadly the same maintenance issues and both are subject to similar failures (pumps on the solar thermal system and inverters on the PV system).

PV needs a lot more roof space, more careful orientation, and adds absolutely nothing (being generous) to the aesthetic value of the house. Thermal systems take up less space, orientation is less critical, but they are still not pretty to look at.

And yet, solar energy is constant and predictable. Solar systems also have a long life -25 years plus. There is no good reason why a newly built house cannot design in some form of solar system. There is more possibility that an existing roof might not be suitable, but even that is rare; adapting an existing plumbing system for a solar thermal system is more likely to be an issue. $\ensuremath{\mathbf{G}}$

➤→ For a list of suppliers, see page 247 or visit homebuilding.co.uk/directory

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PROJECT PLANNER EXTENSIONS

Extension Project Step-by-Step Planner

What does a typical extension project look like? What are the critical paths and construction schedule? Here's our week-by-week guide and checklist

BEFORE WORK STARTS

- Find trades, obtain quotes and inform them of your schedule
- ⇒ Check lead-in times for materials to avoid delays
- → Advise Building Control of commencement
- **>>→** Arrange/amend insurance
- ⇒ If living on site, put measures in place to keep the building work separate from your living spaces
- Arrange toilet facilities for trades if necessary



PREPARATION WORKS

- ➤→ Ensure clear access to site

blocks and associated materials delivered to site and stacked in place

- ⇒ Hire mixer and digger this is only necessary if you are project managing, otherwise your builders or contractors will organise this on your behalf
- **⇒** Ensure the site is safe, particularly if you have small children



GROUNDWORKS

- **>>>** Builders arrive on site
- → Groundworkers dig foundations
- **⇒** Building Control visit to approve the foundations
- Reinforcement laid within foundations, if required
- **⇒** Pipework, drainage or services laid within foundations
- → Concrete footing poured and levelled
- **■→ Building Control visits to approve**



SUPERSTRUCTURE

- ⇒ Bricklayers to build up to dampproof course

and trenches dug for associated pipework

- ⇒ Insert concrete lintels into brickwork if a drain run requires it
- **>>>** Sand is then laid before damp-proof membrane is put down
- **>>>** Concrete slab poured
- → Arrange for Building Control inspection



EXTERNAL WALLS BUILT

→ Check that the required materials

are on site for the superstructure to commence, including lintels, door and window frames and wall ties

- ⇒→ Whether the brickwork or blockwork is built first will depend on your builder, but work now starts on the superstructure
- **>>** Cavity wall insulation fitted
- >>> Wall ties inserted to fix the new walls to the existing
- >>> Lintels for windows and doors fitted
- ⇒ Door and window frames should be inserted as the walls go up



INTERNAL WALLS BUILT

- ➡ Internal walls are constructed

such as windows, roof tiles, etc., which can sometimes have long lead times of up to five weeks

⇒ Check that the carpenter is all set for the following week and all materials are ready — including lead



ROOF STRUCTURE

- ⇒ The carpenter will start building the roof structure
- or in some cases prefabricated roof trusses may be used
- ⇒ If you are having rooflights, the carpenter is usually in charge of fitting these at this stage
- ⇒ Dormers will be constructed if they are being introduced



ROOF COVERINGS

→ Roofing membrane is laid over

the newly built rafters

- ⇒ Roof battens cut and fitted over membrane
- **■→ Tiles/slates laid**
- ➡ Ridge/hip tiles laid and bedded
- >> Valley tiles laid, along with finishing details, flashings, etc.
- → Fascias, soffits and verges primed/ stained/painted
- **■→ Floor screed laid**



WINDOWS AND DOORS

- ⇒ External rendering if required
- ⇒ Windows and doors fitted into linings and frames that were (hopefully) put in place when walls were being built
- **>>** Guttering and downpipes fitted
- ⇒→ First fix carpentry, plumbing and electrics
- ⇒ Studwork walls built, door linings fitted and pipes boxed in

Right: Superstructure

The trick with building extensions is to delay breaking through to the existing house to as late as possible in the build schedule. Here, existing bricks have been removed ready to take the new junction



AGE : JEREMY PHILLIP

TO WEEK

BREAKINGTHROUGH

Now is a good time to ensure you get sealed off from

the building work as things will get messy

⇒ Steels are put into place, along with padstones — sizes should have already been approved by Building Control



PLASTERING

>> Walls are boarded, with insulation placed between battens on

existing un-insulated external walls

⇒ Plastering — followed by a period of drying out (around a week before decorating can begin)



SECOND FIX

⇒→ Second fix electrics carried out (sockets made live,

switches put in place, lights fitted, etc.)

- ⇒ Second fix plumbing (taps, connections, etc.)
- >>> Flooring laid (sometimes people choose to lay flooring after the kitchen is fitted)
- **⇒** Kitchen units installed (if this is a kitchen extension)



SNAGGING

⇒ Leaks, electrical problems, heating system issues, sticking

doors and windows — report them all to the relevant trades as soon as possible after finishing $oldsymbol{\Theta}$

Extension Checklist

Make sure your project runs smoothly with our handy 'don't forget' checklist

- Obtain planning permission, if required, prior to works commencing
- Submit application to your local Building Control
- Arrange access for delivery lorries and consider where skips can be placed
- **■→** Get quotes from trades
- If living on site, arrange schedules to minimise impact on day-to-day living
- Agree timescales and schedules with trades to avoid delays on site
- Arrange or amend insurances as necessary (you may need a new policy)
- >> Inform neighbours of work commencing
- Organise the hire of plant, toilets, etc.
- Set up accounts with your local builders' merchants

- Theck lead-in times for materials and order where necessary
- Notify Building Control that you are commencing works
- Make space available to store materials safely on site
- Make sure water will be available for cement mixer (and later plastering) where it will cause minimal mess inside
- Arrange scaffolding if required
- Make second fix decisions (such as the position of lights and sockets) as early as possible
- Build in time for plaster to dry out before decorating commences
- Make sure plasterers and other trades know if you are carrying out aspects of their jobs on a DIY basis







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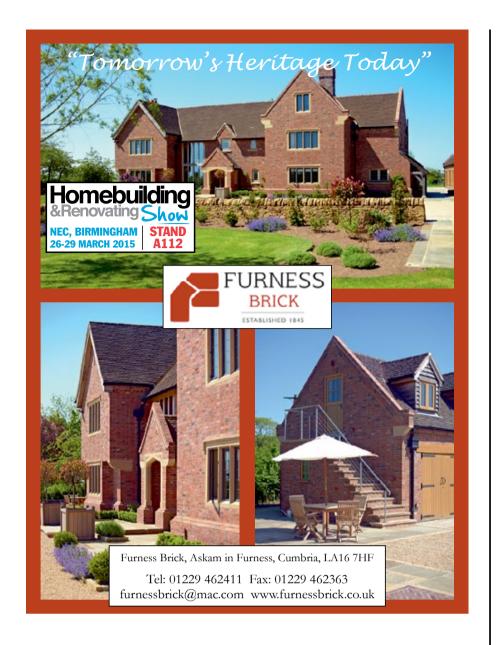
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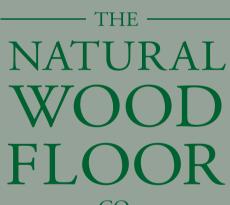
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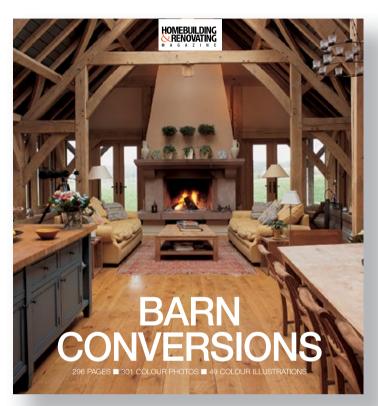


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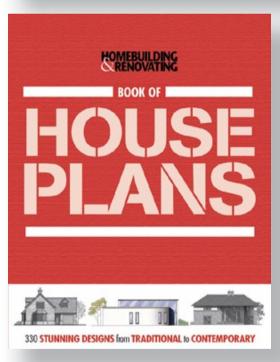
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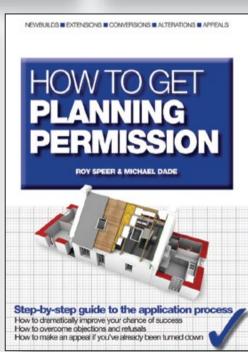
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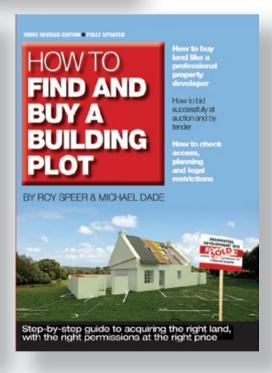
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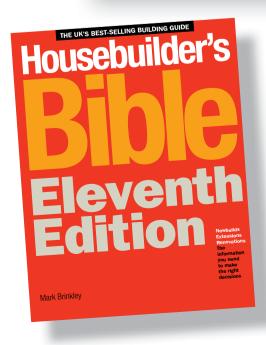












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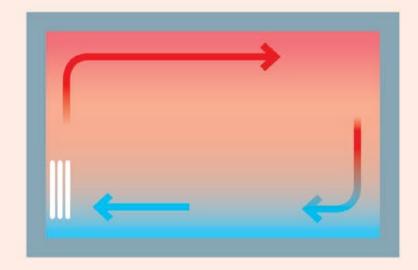
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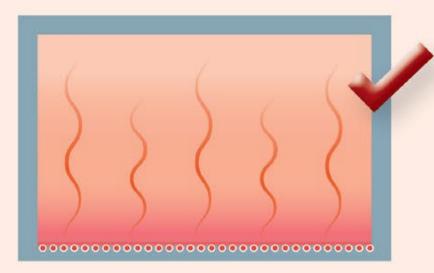




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PROJECTS

What to Expect From a House Designer

...in addition to a house design, hopefully. But in what detail? How much will they plan your project for you? Bob Branscombe explains how the relationship works



BOB BRANSCOMBE

Bob is a managing building surveyor with almost 30 years' experience running a mix of residential and commercial projects. He has particular expertise in cost estimation and project scheduling

hances are that you've already got a very good idea of what you would want your new home or extension to look like. You may indeed have spent many months diligently scrapbooking ideas, working up sketches, perhaps even using drawing software. Why then would you want to pay someone else to design your project?

The answer to this lies in two main areas — interpretation and implementation. In commercial schemes it is not unusual to have

a concept designer, and a technical designer who expands the design to ensure technical excellence, compliance with Building Regulations, and supply chain management concerns. In simple terms, the artistic element is dealt with by the concept guy, and the nuts and bolts and practicality is dealt with by the bloke with the set square and CAD skills.

You need at first to decide how you fit into this — are you the concept guy, confident in your 'big picture' vision, or do you need assistance with this? And then, are you able to translate this vision into a practical scheme, capable of being built? In practice, as commissioners of buildings we tend to fall far more in to the conceptualisation camp, and if truth be told, can often do with a hand in this area too to base our vision in practical possibilities!

All this leads to the conclusion that you need a designer. The range of skills and level of involvement you need is dependent on the level of assistance/leadership you require, but generally falls in to four main areas of contribution.

Concept Design

While you may think the scheme that you have

THE QUICK READ

- >> Whether you are undertaking a self-build, renovation or extension project, consulting a designer is the best way to translate your ideas not to mention their experience will be invaluable
- Having designed the project, they are better placed to project manage the works, can impress planners by justifying the project in design terms, and can work up Building Regulations drawings
- Designers are not specialists in gaining planning permission you will need to engage a planning consultant who understands local planning policy if the scheme is controversial

spent many evenings lovingly creating is beyond compare, don't fool yourself. You wouldn't design a car, or even a new suit — so why do you think you can design a house without help? Good design is worth investing in and a set of 'fresh eyes'

to the project – particularly an experienced set – can provide clever solutions and touches that you could never have imagined. It's a bit like the old Henry Ford quote (let's ignore the fact that he probably never said it): "If I'd asked people what they wanted, they would have said faster horses." Innovation is key and every site is unique.

The value of a good conceptual designer is to always keep referring to first principles (what is the building for? What is the budget? How large should it be? How many bedrooms?) even if this means the design is sometimes completely different to your first thoughts. If nothing else, you are hiring a designer for their experience as much as their future vision.

PROS: It's the cheapest way to bring in professional design expertise to your project, and in many ways you're getting the best of the designer – their key skill set – if you're using them just for the concept.

CONS: Conceptual plans are less likely to be tangible (and practical) than ones that have the

TYPICAL COSTS

- Concept designs would be a fixed-fee service with costs from £1,000-£3,000
- >> To get you through planning, increase this to £3,000-£15,000
- Building Regulations drawings would cost £500-£2,000 depending on the complexity
- Design and project service packages are between 8-15 per cent of the total build cost

PROJECTS USING HOUSE DESIGNERS

critical process of needing to go through planning and Building Regulations and actually end up getting built. Also, an isolated conceptual design will require much more detail later on in the process, and might be open to interpretation if your original designer is not retained.

Planning Permission

The value of your architect/designer in this area cannot be exaggerated — particularly if they are familiar with the local issues, the rules and regulations and the 'rules of thumb' which are an essential part of the planning application rigmarole. Having an informed partner when the application is drawn up, submitted and then battled is invaluable, and certainly enhances your credibility with the planning authority. Too many applications are little more than floorplans, and often let themselves down as a consequence.

PROS: A good designer will create an attractive presentation which will hopefully impress upon the committee/planning officers with a good justification for the project in design terms. Also, it enables amendments to be made and kept within the same expert team.

CONS: Designers are not specialists in gaining planning permission, particularly on more controversial sites. That's the preserve of the planning consultant, and if you want someone with a deep understanding of local planning policy and the ability to navigate you through a difficult process deftly, a designer may not be enough.

Construction Information

This stage takes the approved planning drawings and adds additional drawings specification information and performance requirements to enable accurate and credible tenders to be sought, and then the works built. Remember from my many previous bleats in this respect, the certainty and robustness of your fixed price is entirely based upon the contract documents — loopholes, omissions and assumptions always cost you, the client, money. Money spent getting your design detailed and ready for construction is vital.

These drawings are also used to obtain full plans Building Regulations approval, which enables the project to be pre-approved by Building Control prior to you starting on site. This enables any technical queries to be thrashed out before there are delays or changes (and therefore costs) on site!

PROS: Using the designer for the construction information (Building Regulations drawings) allows for a seamless process and leaves things less open to interpretation. The design can also be altered with 'best' building technique in mind — allowing engineering to meet design in the best way.

CONS: Not all designers have the ability to produce Building Regulations drawings, and they're not always the best people to know how houses are put together. If you're using a main contractor, they may prefer to have construction drawings produced by someone they are familiar with.

Project Management/Client Representative

The levels of involvement noted previously take your project to the point where it is ready to be tendered and then built. In many cases, self-builders and renovators are keen to take over, but they also have the option to retain a designer to act as the manager for the process through to completion. This includes ensuring that the work is built as per the drawings, dealing with queries, issuing change instructions, interpreting any site feedback to you, and being a general source of advice and guidance as the work proceeds. In addition to managing the contractors, a (good) project manager will manage you, too — to ensure you don't hold up the process through poor decision making.

They are also best placed to manage work as per their design — if it doesn't work on site, they can evolve the design to suit. You can see the problem if they have been 'stood down' as you start on site, and the design has errors. Ignoring the responsibility issue, the time delay likely is greater! Professional project management usually involves fees of between 8-15 per cent (of the total build costs) and if you're retaining your designer to take this on, you should budget for this approach.

PROS: The key benefit is that no one is better placed to manage your project than the person who designed it, and therefore they should be able to answer all of the contractor's questions and ensure what's built matches the original vision. It also takes a tier of responsibility out of the equation, making the whole process quicker and more direct (i.e. rather than a builder asking a project manager who then asks the designer to produce details, the interaction is direct).

CONS: One argument against it is that good designers aren't necessarily good project managers. Small one-man-band design firms may have problems juggling the demands of many clients and successful project management relies on organisation and planning.

The services above are generally contained in the 'scope of services' element of any letter/appointment you (should) receive from a prospective designer. When selecting the assistance you require, usually a hybrid of the above services is normal for a self-builder who carries out a level of project management themselves. The simple rule is to be clear and establish fees and what level of service you require from the start.

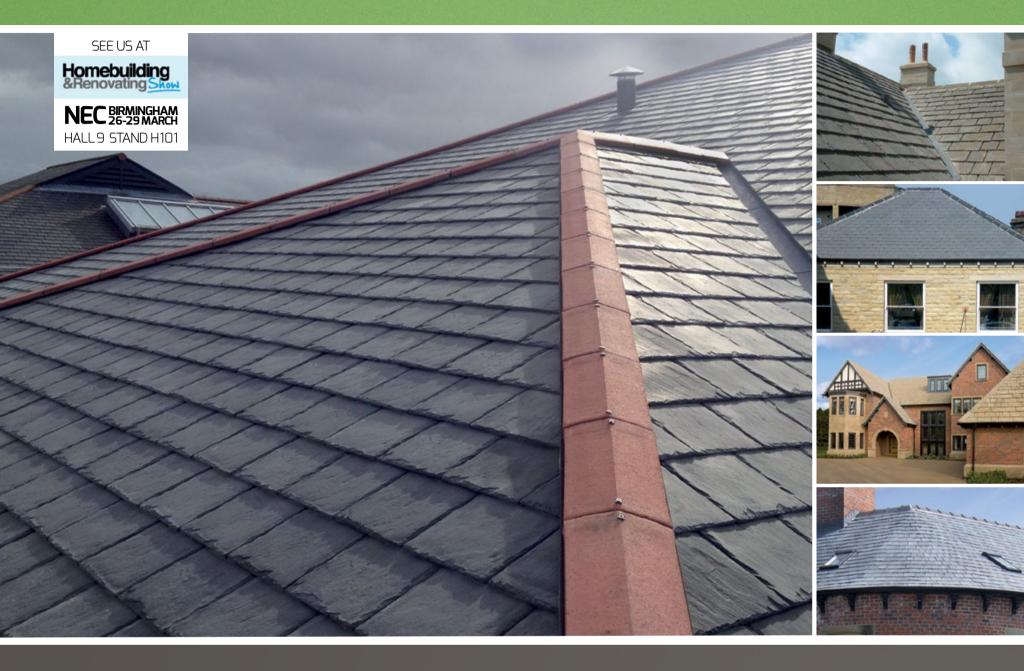
A word on titles: The title of architect is protected by law and should only be used by someone who has completed all the training and is registered with the Architects Registration Board. You need a designer — you could use an architect, or an architectural technologist, or a draughtsman or someone calling themselves an architectural designer. It doesn't matter. What you need is experience, and skill, and someone who is able to communicate well. And that's another story.

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THE WARMER HOME

How to Insulate a Pitched Roof (Properly)

Homes can lose a lot of heat through their roofs. Tony Millichap explains how to insulate to achieve the best possible performance



TONY MILLICHAP
Tony is Head of Technical at Kingspan
Insulation and is one of the UK's
leading experts on insulation

ne of the biggest areas of progress in insulation standards in recent years has been for pitched roofs. Warm air rises, of course, and more and more designers and energy-efficiency experts are understanding that creating a well-insulated roof structure is critical in reducing heat loss. For those looking to retrofit (i.e. not re-covering the roof), the options tend to be limited to insulating between existing rafters (which in itself is still well worth doing), but if you're building a new pitched roof as part of an extension or new build project, you have the opportunity to create a high-performing structure with high-performance rafter-level insulation. Not only that, but the Building Regulations will now require that you insulate your new pitched roof to a certain standard.

What Thermal Performance to Target?

The Building Regulations that set out the thermal performance requirements for new homes vary depending on whether you are in England, Wales, Northern Ireland or Scotland.

All of the documents that form these regulations within each country use variations on a 'whole building approach' to keep calculated ${\rm CO_2}$ emissions below a maximum allowable level. The methodologies used to calculate compliance consider a number of factors, including (but not limited to):

airtightness; linear thermal bridging; and the thermal performance of the floors, walls and in the roof.

There is, essentially, an unlimited number of ways in which a building can comply with these requirements, but modelling has suggested that the best roof U value to aim for as a basis for compliance throughout the UK is 0.11.

Sometimes rafter depths will need to be increased

THE QUICK READ

- >> If you're building a new pitched roof, you will have to insulate either between and over the top of the rafters, or between and underneath them
- >> In most cases, if you're building from scratch, insulating between and over is the best way to achieve excellent U values, maximum airtightness and minimum cold bridging
- ⇒ Between-and-under-rafter insulation will achieve the regulations and a good level of performance but will have implications in terms of reduced head-height — it's also slightly more difficult to install

Where to Insulate?

The best method of achieving a U value of 0.11 on a new pitched roof is to insulate between and over the rafters (for clarity's sake, rafters are the sloping timbers that hold the roof up). This approach creates an unventilated roof structure, which research has shown can improve the thermal efficiency of the building by minimising cold air intrusion. It features no insulation below the rafters – which maximises headroom under the roof – while at the same time giving a continuous substrate for the breather membrane. This facilitates its effective sealing and reduces thermal bridging because the over-rafter layer of insulation is continuous.

Phenolic insulation (in simple terms a rigid foam sandwiched by two flexible layers) can help to further simplify between-and-over-rafter installations. The boards are rigid, lightweight, and easy to handle and cut to size. Their premium thermal performance also ensures that any required U value can be achieved with a minimal insulation thickness.

An alternative approach for pitched roofs is to fit the insulation between and under the rafters. However, this is not typically recommended when insulating to a high level, as under-rafter insulation reduces headroom and, sometimes, rafter depths will need to be increased in order to provide the required space for the insulation.

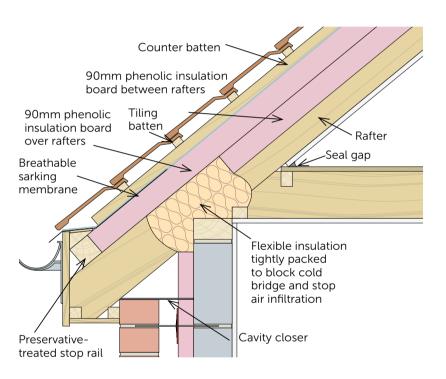
THE WARMER HOME INSULATING ROOFS

>>> Pitched Roof Insulation Techniques

Here are the typical build-ups for the two main approaches

Between and Over

Assuming 150mm-deep rafters at 600mm centres, 90mm of phenolic insulation is installed between the rafters and supported on nailable sarking clips. A further 90mm layer of phenolic insulation is then installed over the rafters. Care should be taken to ensure that any vertical joints between over-rafter insulation boards coincide with the rafters.



Above: Between-and-over pitched roof insulation typical build-up

A breathable sarking membrane should then be fitted above the insulation in horizontal runs. All joints should be lapped and sealed with 75mm double-sided acrylic adhesive tape. The depth of the lap is dependent on the roof pitch. Timber counter battens and tile/slate battens are then installed and fixed. For increased airtightness, a further breather membrane can also be installed between the two layers of insulation.

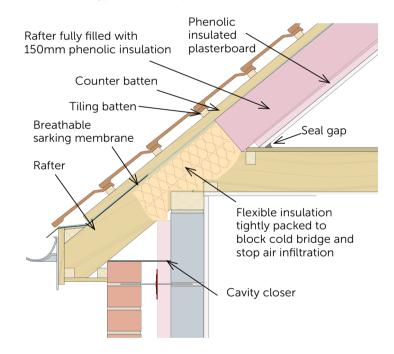
Between and Under

If between-and-under insulation for the roof is chosen, and assuming 150mm-deep rafters at 600mm centres, a 150mm thickness of phenolic insulation should be fitted between the rafters and then supported on nailable sarking clips. This 'fully filled' rafter gives a continuous substrate for the breather membrane (which facilitates its effective sealing as previously mentioned). A breathable sarking membrane should then be fitted above the insulation and laid in horizontal runs. All joints should be lapped and sealed with 75mm double-sided acrylic adhesive tape. The depth of the lap is dependent on

the pitch of the roof. Timber counter battens and tile/slate battens are then installed and fixed.

An 82.5mm thickness of phenolic insulated plasterboard is fitted, with the long edges of the boards running horizontally across the rafters. All joints should coincide with rafters or noggins, and boards should lap them by at least 19mm either side of the joint. This layer helps the roof achieve the required level of thermal performance while also limiting cold bridging through the rafters. Insulated plasterboards are fixed in place with drywall screws at a maximum of 225mm centres, and no less than 10mm from the edge of the board at bound edges

Below: Between-and-under pitched roof insulation typical build-up



(paper bound) or 13mm from non-bound or cut edges. The screws should be long enough to penetrate at least 25mm into the timber rafters/noggins without being overdriven.

For dwarf walls, a recommended starting point is a U value of 0.16. To meet this, 90mm of phenolic insulation is installed between the studs (assuming studs at 600mm centres). A 'stop' should also be fixed to the outer surface of the stud to ensure the insulation boards remain flush with the inner surface of the timber studs. A 62.5mm thickness of phenolic insulated plasterboard should then be fitted internally. •

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Toolkit: Single Storey Homes



IMAGE: DARREN CHUNG

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SINGLE STOREY HOMES



The Bungalow is Back

A staple of Britain's housing stock, single storey homes are not to be sniffed at

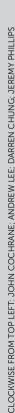
hink 'bungalow' and images of suburban streets lined with squat brick boxes spring to mind. The single storey home has, however, undergone somewhat of a reinvention in the 21st century. Individually designed new build bungalows are no longer box-like—the challenge of creating a home all on one storey has flexed the creative muscle of many a house designer and architect, spurring on some very inventive results (the above examples are case in point). For those tackling a project on an existing bungalow,

the appeals – typically detached and located upon a large plot – are being married with clever design solutions too. The result: the bungalow is no longer boring.

"The quintessential British bungalow owes its initial roots to India, first introduced in the 17th century as spacious residences and official lodgings for the British Raj. But the modern bungalow has lost none of its appeal," adds PAD Studio architect Darren Bray (who provides his guide to extending a bungalow on page 215). "Bungalows provide simple, flexible housing, lend themselves to families and those looking to

retire, and offer good value for money in an ever-inflated market. Even the planning minister Brandon Lewis has promoted the bungalow as one solution to future housing in the UK. This is why us architects see potential opportunities to extend and stamp our mark on these British gems."

So what are the benefits of living in a single storey home? Well let's start with ridge height: a bungalow can be one means of gaining planning for a new home in an area where a two storey home would otherwise be rejected. "A planning restriction imposing a single storey ridge height – typi-











cal on infill plots and other sensitive areas where impact needs to be constrained – is often viewed as an obstacle," says HB&R's Content Director, Michael Holmes. "But it can be an opportunity. With clever design a bungalow can be anything but boring, and a height restriction need not be a significant limit on volume."

Another obvious benefit is accessibility. A single storey house should be a home for life, without requiring substantial work, or without an entire floor being made redundant. This is particularly true if a bungalow is built in accordance with the Lifetime Homes standard (a set of 16 design criteria for creating an accessible home).

The possibility of accessing the garden from every key room, including bedrooms, is another enviable opportunity.

Design Considerations

Single storey homes do bring a unique set of challenges however, and the floorplan does, arguably, have to work much harder than that of the multistorey home. For starters, separating the living areas from the sleeping quarters is one issue. It goes without saying that, within a typical two storey build, the latter spaces are arranged on separate levels.

This physical separation has a psychological impact: the staircase becomes a transition space, which defines the bedrooms from the living areas. It also acts as a physical barrier between those more private spaces and areas designated for guests. (This is perhaps why the dormer bungalow is so popular; providing all the benefits of a single storey home, with the addition of a separate sanctuary tucked under the eaves.)

So how do you separate these areas? It could be as simple as arranging the living areas at the back, with bedrooms to the front and a spacious entrance hall in-between, or an L-shaped layout with defined wings dedicated to each. But it does need thought.

"Another key to successful single storey house design is to ensure efficient circulation and flow without wasting too much space, and to make the most of natural light both are easier to achieve with a more open plan layout," adds Michael Holmes.

Introducing daylight can be a particular challenge, too. How do you avoid a deep floorplan whereby rooms at the centre are starved of natural light? Fortunately, good design has again come to the fore here. L-shaped designs, courtyard arrangements, staggered and elongated floorplans

Single Storey Success

1: An elongated floorplan draws influence from agricultural forms and allows principal rooms to take advantage of the views, by Simon Winstanley Architects; 2: A single storey home self-built for under £100k; 3: A low-profile home in Skye, by Dualchas Architects, nestles into the landscape; 4: A timber frame bungalow by Anderson Orr; 5: This York self-build lies low among neighbours, and maintains privacy thanks to its inward-looking courtyard

have provided successful means of taking advantage of daylight. While rooflights, glazed links and sunpipes are welcome allies for those introducing light from above in existing and new build bungalows alike. "Opportunities to have vaulted ceilings and rooflights throughout the main living areas, creating spacious, light-filled interiors is a real attraction for those seeking a single storey home," adds Michael Holmes.

"It is also important to have a clear vision for the building's style and form, and there are many options to consider."Turn overleaf for Michael's guide to getting this right. • **





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SINGLE STOREY HOMES

Style & Design Tips

Single storey homes come in many a shape, size and form. Michael Holmes provides advice on how to take this house type beyond the ordinary, and explains the different styles you should consider

Right: Contemporary

The award-winning Origami House, designed by Northern Ireland-based architect Jane Burnside, takes the classic pavilion concept but substitutes the flat roof with a more traditional pitched roof form, conceived to overcome planners' objections to flat roofs in rural locations. As such, it's a modern form which draws influence from the vernacular and the site.

To achieve the desired open plan arrangement – without the walls normally required to support a pitched roof – the design is based around a series of 7m² interlocking and overlapping pavilions, each with its own intersecting pitched roof supported by a delicate framework of hidden steel posts and beams.

The result is a beautiful origami-like vaulted ceiling of many intersecting planes, over a light-filled central open plan living space with vast areas of glazing.

Jane D Burnside Architects:

janedburnsidearchitects.co.uk





Left: Hidden Storeys

One principal reason for building a new bungalow is to achieve planning permission where a two storey home would otherwise be prohibited; be it in a sensitive location and/or one where an existing bungalow is being demolished and replaced.

This low-profile new build is one case in point. Surrounded by green belt land in an Area of Outstanding Natural Beauty, the build replaces a rundown timber bungalow, but despite appearances, measures up at 360m^2 thanks to a spacious basement – housing a swimming pool, cinema room and utility – hidden below ground. "We realised that sinking the new house into the ground would reduce its impact on the surroundings and give us the extra space we wanted," says the homeowner Helen Morrison.

 Richard Reid & Associates: richardreid.co.uk

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Above: Pavilion Style

Inspired by the Barcelona Pavilion designed by Ludwig Mies van der Rohe for the 1929 International Exposition, this style remains the archetype for contemporary single storey design over 85 years on — with an informal open plan layout and a simple flat roof plane that appears to almost float.

Layout configurations are almost limitless, as flat roofing can cover almost any arrangement of intersecting rooms, and can cover outdoor areas too — from entrance porches to outdoor rooms.

The style has evolved and many pavilionstyle homes are now using softer and more sustainable materials than white cement render and concrete, such as natural timber and stone cladding, lime-based breathable renders and sometimes sedum roofs.

One single storey property which has drawn inspiration from this landmark build is the stunning home of Grant Duncan, designed by Gareth Hoskins Architects (ABOVE). "Every bedroom has a door that leads out to the garden, and the living room has three large doors that also open out," says Grant. "There is a lot of solar gain, and the way that the overhanging roof has been designed means that the temperature is constant — the high summer sun doesn't get caught full on, yet at the same time the low winter sun gets in."

 Gareth Hoskins Architects: garethhoskinsarchitects.co.uk



Above: Schoolhouse Style

Many single storey or one-and-a-half storey schoolhouses were built in the mid to late 18th century and when looking for a traditional single storey form, this is one of the nicest options.

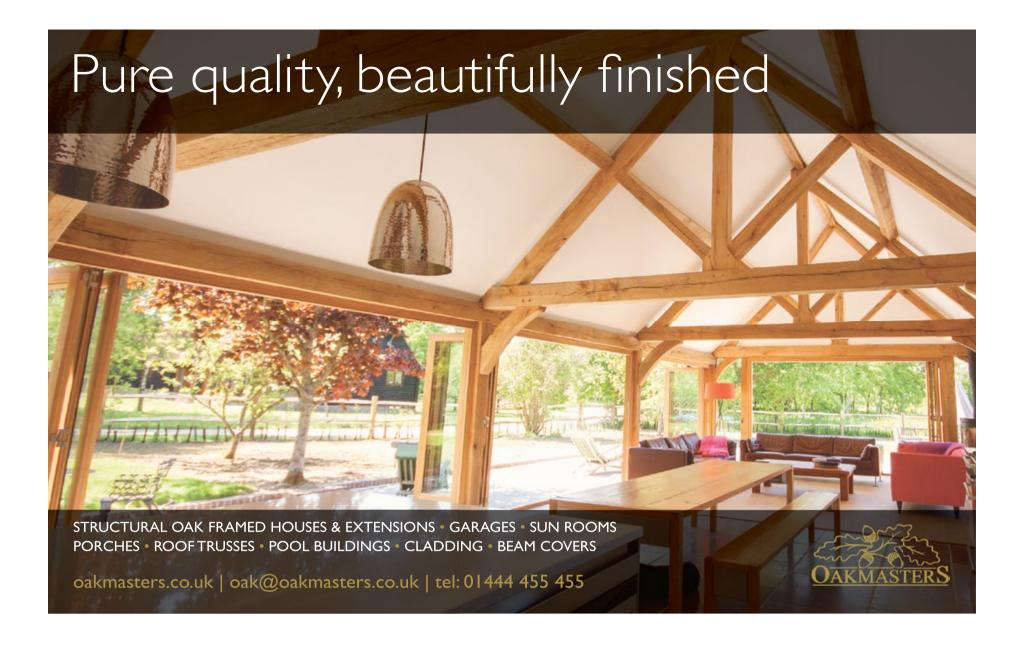
Old schoolhouses typically had steeply pitched gabled roofs with decorative bargeboards and at least one large 'schoolroom' window, lighting a double-height space, ideal as an open plan kitchen/diner or living area with a vaulted ceiling.

Although the schoolhouse would be single storey, there is often a section with

accommodation in the roof space with dormer windows, and this makes more efficient use of the built volume.

It's not unusual to have a small bell or clock tower — a feature that can be utilised to add interest. HB&R Contributing Editor and 13-time self-builder David Snell built a Victorian schoolhouse-style bungalow in the Forest of Dean, Gloucestershire (ABOVE). Designed by Beverley Pemberton of Design and Materials, the double-height vaulted-ceiling living room features a wonderful glazed gable wall.

• Design & Materials: 0845 404 0400





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SINGLE STOREY HOMES STYLE & DESIGN TIPS





Above and Top: Agricultural Form

A popular style for a single storey house in a rural location is an agricultural-inspired building. The key to getting this style right is to copy details from traditional barns in the local vernacular. Typically they're utilitarian, using materials such as stone, oak frame or brick under slate or clay tiles.

One such project which successfully draws influence in this way is this Potton new build (TOP). Two black timber-clad 'barns' are roofed in slate, creating fourmetre-high ceilings inside. These rectangular structures appear to have been 'extended' over time, with two lean-to elements finished in contrasting cream weatherboarding and the same clay pantiles chosen to roof the attached garage.

One of the oldest vernacular forms is the longhouse, a simple one-room-deep single storey cottage, often with small windows and one or two gable end chimneys. Originally built from stone and sometimes cob or rammed earth, with a turf or thatched roof,

examples still survive widely across Scotland, Ireland, Wales and the South-West. Many now have slate or tin roofs, or have been extended upwards to add rooms in the roof.

This humble style is still favoured by planners on open country sites in areas where it is the traditional form. Architectural practices such as Skye-based Dualchas Architects have taken the concept and reinterpreted it, giving it a contemporary twist (LEFT), updating the structure and creating an open plan layout, often with vaulted ceilings, and large expanses of glazing to maximise light.

Potton: potton.co.uk

• Dualchas Architects: 01471 833300

Below: Ranch Style

The traditional single storey Cape Cod-style house is an attractive aesthetic that particularly suits rural plots and wooded sites. They are typically one-and-half storeys with rooms in the roof with dormer windows, together with a veranda-style porch wrapping around the front and/or rear.

Timber-clad ranch houses particularly suit the eastern counties of Sussex, Kent, Essex and Suffolk, and many coastal areas. But this style of house is increasingly being accepted elsewhere, especially where it can be justified that there is a mix of local materials and vernacular. •





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SINGLE STOREY HOMES

A Masterclass in Single Storey Design

With clever design you can avoid the ails which have blighted bungalows of past (think deep floorplans and long, dark corridors). Designer Pete Tonks explains



PETE TONKS
Pete Tonks is
HB&R's design
expert and has
been designing
self-build homes
for over 20 years

he term bungalow derives from the Indian (Gujarati) word 'bangalo' and describes a single storey building, often detached, with a covered veranda to one elevation. In essence, a single storey dwelling is one that is verticality present only at ground floor level and historically featured a low roof pitch span. In the past, footprints have also been set at their most economical in either a square or rectangular form to keep building costs as low as possible.

Since the mainstream introduction of the bungalow to the UK back in the 1920s, when large estates were constructed post-war, natural design progression has occurred to 'max out' the concept, resulting in designs such as dormer bungalows and chalet bungalows, which have rooms tucked under the roof. But surely, if the design has accommodation at first floor level it must be a house, I hear you say? Generally, if the verticality is confined to the ground floor element of the building and first floor windows are either rooflights or dormers set into the roof plane then, by definition, the building could be classed as a bungalow or single storey home. From a planning perspective, I have stretched this concept on more than one occasion but, ultimately,



IMAGE

as soon as you begin to lift the first floor into a vertical plane externally, the design can no longer be classed as single storey.

You will find that many planning approvals out there will have a ridge restriction perhaps preventing a two storey dwelling being viable on the site, and these have always tended to be ditched without question by most developers. This is where you can capitalise as the ever-optimistic self-builder and see potential where others see nothing.

You will find that many of these approvals have something in the region of 5m-6.5m as a ridge height restriction placed on them by a local authority, in an attempt to control height, massing and scale. Fortunately, these figures can work extremely well when designing a single storey home. If you consider most ground floor storey heights are circa 2.4m from finished floor to ceiling

Above: Adding Wow-Factor Inside

Opportunities for creating vaulted ceilings are a particular attraction of the single storey home, and add architectural interest to the interiors, particularly when combined with lots of glazing

(which optimises wall boards which are themselves 2.4m), you easily have good space above for an attractive roof design and of course, the option for vaulting the spaces within. You could even consider taller ground floor ceiling heights up to around 3m and still remain in the many planning constrained ridge height scenarios. Do bear in mind this will have a price implication in terms of plasterboarding and detailing, but not prohibitively so in my opinion.

>





MY STYLE LIVING



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To avoid deep plan forms, I always look to design more linear arrangements such as T-shape or L-shape plans, or to break the plan up into smaller components, which can be staggered. Another approach in terms of configuration is a courtyard layout. This will at least double the number of external







walls available for glazing and can therefore create exciting opportunities. It also provides extremely good visual connectivity between the various rooms, which is great if you love open plan layouts.

I have, however, had experience of courtyard designs suffering from poor privacy, so this needs thought during the initial concept stage. The privacy issue can arise if, for instance, the main living areas look straight across into the bedrooms. It's worth considering details such as brise soleil with partial vertical screening outside of those rooms that require more privacy. You could also consider a lushly planted internal garden and allow this to provide a visual break between the various zones.

A good single storey building in my opinion is one that is of relatively narrow plan form proportions, with a roof that is steep. All too often I have seen designs which look to max out the width of the plan form and

Above: Floorplan Success

CLOCKWISE FROM TOP: A courtyard arrangement combined with bi-fold doors and large windows brings natural light into the heart of this self-build by Designcubed; A staggered floorplan, demonstrated by this Paul Humphries Architects' scheme, works wonders in allowing principal rooms to enjoy the views; While doing away with internal walls and corridors allows uninterrupted views of the garden in this bungalow

then a low pitch roof is added, creating a home of little architectural merit.

Bear in mind that if you are looking to use a plain tile on the roof then you'll be unable to go less than 35° in any case. That said, 35° is too low for my liking. To get the proportions right, I'd suggest keeping room/span widths below 5m and opting for a steeper roof of between 37.5° and 47.5°.

Rethink Space-Wasting Corridors

The other mantra that should be going round in your design thoughts at an early stage is 'no corridors'. Corridors should not really be necessary to get around the building if you understand the principles of space planning and spatial flow. But humans like corridors — we are conditioned to follow routes rather than transferring from space to space. I think this is more of a British sensibility. Bungalows further afield in Europe, the US and Australia rarely follow the convention of zoning various activities within the layout and linking each with a corridor.

Break away from convention and work out what works best for you. You may want to have the master bedroom closer to the kitchen/dining/living areas and perhaps the kids' and guest rooms further away. However, these could be accessed through a large central atrium hallway which is spacious and light and acts a central hub circulation zone.

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SINGLE STOREY HOMES DESIGN MASTERCLASS

What About Safety?

Another topic which I often encounter with single storey design is the safety of bedrooms on the ground floor, particularly for those with young children. The concern perhaps goes back to a time when security was nowhere near as good as it is today. We have security systems now, and if you look at any joinery brochure, you will see that windows and doors are extremely secure with multi-point locking. It is an issue though and has put clients of mine off building a single storey home. So how can we deal with this scenario?

If height permits, you could look to incorporate the kids' rooms up in the roof space which, although may be limited for regular adult use, would be exciting and fun for the little people in our lives. If you do want to build a single storey home with rooms in the roof, just be careful not to introduce too much in the way of dormer windows and balconies as these will project out beyond the roof plane and begin to introduce external bulk and profile — this is when you enter the 'grey area' between bungalow and house.

Sloping Sites Can be Advantageous

Often sloping sites are considered prohibi-

tive by most commercial developers, but the changes in level can provide some exciting opportunities for the self-builder. Caution should be exercised, though. If you build two storeys at the front of a site, which then slopes down, you'll end up with a three storey vertical element at the rear — which can very often be just too tall and have too much massing to be acceptable to the planning authority (and to look acceptable to the owners). This is where the humble bungalow can come to the rescue.

I have undertaken many schemes that needed to appear low profile and low impact from the road. Designing a minimum verticality, which can be further softened with extended roof lines to create greater eaves coverage, is a good solution. The first floor windows would typically be low-impact inset dormers or flush rooflights so as to keep that visual bulk under control. The design code for the front of such a scheme would be humble, unassuming and beautifully simple.

As you move into the design, it is typical to place secondary rooms such as the WC, utility, study and perhaps a couple of bedrooms at upper level, but then you can really go to town with enjoying the benefits. The

main living, kitchen, family, dining zones could then be set into the sloping site at lower level, with access to the garden. The resulting two storey appearance at the rear, which could be fully exposed or partially absorbed into the landscape, is a far more familiar built form than three storeys and is therefore 'softer' in planning terms. This type of scheme gives great potential for large opening bi-fold and sliding doors.

Vaulted Ceilings Need Careful Planning

With single storey design comes the general desire to open up all of the ceilings and go for vaulting throughout. While I absolutely go along with this, do bear in mind that you will need some roof space for general storage, unless you have the intention of providing this elsewhere, i.e. in a basement or outbuilding.

It's likely that your new airtight home will feature a mechanical ventilation heat recovery (MVHR) system and as such, you'll need to keep some of the roof zone to accommodate this, too. The heat exchanger sits above your living space and is ducted down into and around the various rooms, so it definitely needs some thought at an early stage to ensure it can be accommodated. \mathbf{G}



The Benefits of Sloping Sites

In an area surrounded by National Trust land and with a covenant restricting ridge height, this award-winning home by architect Annie Martin (RIGHT) appears single storey from the front — its two storey rear nestles into the hillside; Again, this unassuming single storey front elevation (LEFT) gives way to a spectacular rear elevation, by Welsh Oak Frame



LEFT: NIGEL RIGDEN;





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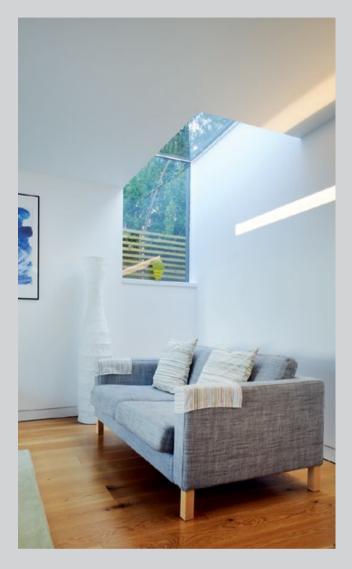
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A Shining Example

A coastal new build offers a vision for 21st-century single storey living

PROJECT NOTES

Architect:

Studio West Architects: studiowest architects.co.uk

Location:

Cornwall

Project Cost: £160,000

Land Cost:

£100,000

Built Time: Nov 2012 - Oct 2013

ingle storey homes are typically low in profile and, as such, often offer a solution for difficult plots. Such is the case for this stealth home, which nestles down low on its urban infill plot in St. Ives, and yet still packs an architectural punch. And perhaps equally impressive is that the light-filled living room makes the most of the one sea vista on offer — the same view which the owners Paul and Lesley Dadson had the foresight to notice, when they spotted the potential in this plot.

"The existing planning consent was for a pastiche Cornish-style cottage," says Neil Wall of Studio West Architects, the architect behind Ispoyntel House, the resulting contemporary home which the Dadsons plan to retire to but currently let out for holidays. "But Paul, who is a conservation officer, and Lesley have real vision and passion for architecture. They approached us with a brief for something contemporary, minimal, but they also had a budget of £100,000. I was fascinated by the challenge," says Neil.

Keeping the form and floorplan simple was key to creating a home within budget. The first reincarnation was for a rectangular-shaped build, which would "keep the cost of junctions, etc., down," says Neil.

However, the narrow plot dictated an L-shaped floorplan and with this form came numerous benefits. "It created a semi-private central courtyard, which could be accessed



Exterior

This single storey build is clad in Marley Eternit's fibre cement boards, which have been carefully lined up so as to create shadow gaps in-between

from both the living space and the master bedroom. It also led to the creation of a really useful entrance space, where the two sides meet," says Neil.

Plans for a slate pitched roof were soon revised when the cladding choice was finalised. "When Paul came across Marley Eternit's fibre cement boards, the aesthetic detail of the house changed," explains Neil. "The horizontal panels informed the flat roof. This was useful both in terms of cost, but also in lowering the ridge height of the building and reducing massing."

It was hoped that while contemporary in appearance, being single storey and low in profile, the home would win favour with the local planners. And fortunately planning was granted first time, but as Neil comments: "It wasn't plain sailing."

A highly insulated timber frame was the construction system of choice. "It's quick and provides an airtight build," says Neil. The construction is so airtight in fact that

the bedrooms are heated by means of a mechanical ventilation heat recovery system, which recovers heat from the living space, where underfloor heating has been installed.

Clean lines are on show throughout. "It's amazing how much planning goes into minimal details such as shadow gaps," says Neil. Getting the levels right was also a particular challenge. "You can now see the sea while sat down inside. We used 3D modelling to get this just right, and it required a few tweaks on site, with the gate height measured so as not to block the view."

The resulting build cost was near-on £160,000, due to problems encountered during the groundworks. "If there hadn't been issues with the drainage works, the house would have been built for £100,000, and it goes to show that you can build a high-quality, three-bed, low-energy home for under £1,000m²." \bullet

• Ispoyntel House is available for holiday rental: ispoyntel.co.uk





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How to Build a Better Bungalow

There are a couple of factors to consider before taking on a single storey home project

Building a new bungalow costs, on average, more per square metre than a new home of two or more storeys — a quick glance at HB&R's build cost table (page 162) highlights this. The reason is two-fold: when it comes to the build itself, the two biggest costs are typically the groundworks/ foundations and the roof (a £50k kitchen aside, of course). So, in rudimentary terms, take two homes of 200m² — this space will be spread over two floors, with foundations and a roof of, say, 100m² for the two storey home. The cost of building additional walls and a first floor is minimal compared with foundations and a roof double in size for the bungalow; economies of scale come to the fore. (Another factor to consider is that a single storey home tends to occupy more space on a site — which may be an issue on smaller plots.)

It's for this reason perhaps that the developer-built bungalow has seen a demise in recent years. "With the impetus to squeeze as much accommodation as possible onto a plot to justify high land prices, it's surprising that any bungalows are built at all today in the UK," says HB&R's Michael Holmes.

If planning does not dictate a single storey home, and if resale value is a key factor for the self-builder, then building a home of more than one storey will likely see maximum return. So it's worth establishing the projected value for both types of property.

2 If you plan to add 'rooms in the roof', it's worth noting that not all existing bungalows possess loft spaces ripe for conversion. While there are no rules on ceiling height when it comes to creating usable loft space (with the exception of above the staircase, where a set head clearance is required under Building Regulations), some properties – particularly post-1970s builds which tend to have shallow roof pitches – do not have practical head height for conversion.

There are ways round this. If the ground floor boasts high ceilings, then the ceilings can be lowered to create adequate space above. Alternatively, the entire roof can be removed and rebuilt (subject to planning permission for the new ridge height). Both will obviously attract higher costs than the 'standard' loft conversion. And, if you plan to sell on the property in the near future,

the cost of work versus the projected value are important sums worth doing first.

The strength of the foundations is another issue at play. Older properties with shallow foundations may not be suitable for the additional loading placed on them by a loft conversion. A structural engineer is the first port of call in such instances.

If you're building a new bungalow, you may want to consider future property accordingly.

The construction system is an important consideration. If you plan on building a bungalow with a pitched roof with impressive vaulted ceilings inside, and/or with wide open plan spaces free of pillars, then thought needs to be given to the most suitable construction system to achieve this — often steel frame with a timber or masonry infill is a good solution. \bullet

Single Storey Success

This four-bed new build, designed by David Wilson of Room Architects, provides a low-energy contemporary family home





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Extending a Bungalow: The Designer's Guide

Extending a single storey home is not without its challenges. Step in architect Darren Bray, who shares his words of wisdom









DARREN BRAY Architect Darren is Associate Director of award-winning PAD Studio and a visiting tutor to **Portsmouth School** of Architecture

ungalows do not generally lend themselves so readily to being extended as compared with their two storey counterparts. There are some particular design challenges to address prior to taking on such a project: for instance, how do you deal with and extend a low roofline, potential reduction in natural daylight from a deeper plan, and importantly, how do you achieve appropriate massing? These issues can seem daunting, but can be overcome with clear, simple, creative devices which can unlock potential.

Extending the Roofline

One of the largest challenges faced is how to extend the roofline. The flat roof is one of the simplest solutions, but it needs to be handled carefully so that it does not look out of context. The most successful way in which a new flat roof element can be added is as a stand-alone element, with the new roof slid under the existing eaves. The flat roof can be a simple single form with a very small parapet that drops down at the eaves junction to allow for rainwater outlets.

It is also possible to join a new flat roof at the same level as the existing eaves, but this can be difficult to achieve structurally and the join inevitably looks awkward. What's more, inserting such an element as a self-supporting structure simplifies the requirement for support within the existing building, therefore removing or lessening any further structural implications.

Flat roofs don't have to be the only type employed. Mono-pitch roofs can be used to fall toward the existing eaves of a bungalow and can also prove beneficial in increasing

Above: A New Addition

The owners of this bungalow in rural Hampshire were keen to replace an existing PVCu conservatory with an extension which would provide a better relationship with the garden. PAD Studio's response was for the removal of the rear wall - and its tiny windows - and for the addition of a pavilion-style extension, with the flat roof ensuring this new element maintained a low profile, subservient to the main house. Large sliding doors and modern bay and corner windows have been incorporated into the south-west-facing extension to bring in natural light, maximise solar gain and to take in the views

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the area of glazing. Ideally these will sit independently of the existing bungalow roof and have a distinct and different roof pitch — this way they're seen as a new form rather than trying to fit in with what's already there.

Joining the New with the Existing

One key consideration is how the new addition should be joined with the old — and this is both a structural and aesthetic issue. To begin, if the new extension is designed to enlarge an existing space, perhaps creating an open plan kitchen/dining area, then attention needs to be given to how this large opening between new and old will be supported. In a project which PAD Studio worked on (page 215), once the rear wall was removed, a new structural steel beam was introduced to support the edge of the existing roof. This not only supported the roof but also took the ends of the new flat roof joists which had been introduced. Whatever the solution, a structural engineer should be consulted early on in the proceedings.

There are a number of 'creative stitches' that architects rely on too in our quest for joining the present to the past. These include secret gutters, rooflights, flat roofs and glazed links; they all act as structural 'glue' that sticks these two forms together.

The secret gutter can be an extension of the flat roof essentially, but it may be at a lower level, formed in timber and covered with a waterproof membrane. The gutter can be set just below the existing roof eaves line of the bungalow, to take the rainwater from the main roof as well as the new flat roof.

Construction

This also leads on to a question regarding construction. On the very same project, we decided early in the process that our new addition would be timber frame, for both walls and roof. This gives many advantages: you have one trade to build the structure, it's lightweight, provides a quick, dry construction, and it's easy to adapt.

The foundation for any such extension should be straightforward, depending on ground conditions, when using timber frame; typically a simple cast in-situ concrete raft slab can be employed. This has the advantage of being independent from the existing bungalow, and is ideal as it removes issues with applying further loads to existing foundations.



Introducing Natural Light

Incorporating large doors and windows are obvious ways of introducing daylight, but rooflights should also be considered, particularly those at the junction between the existing property and the extension — they work wonders in blurring the connection between old and new.

If you're considering a rooflight between the old and new structure, then it's generally easier to add this into a new flat roof. If you choose to employ a glazed link, then one successful solution is to potentially use a very thin structural glazing system that can be supported by thin steel channels, inserted into existing masonry and bolted to the existing structure.

Material Matters

It's critical when you are looking to extend a bungalow that you consider the impact additional floor space will have on the existing environment and the overall massing of the house. We may still use our rolls of tracing paper at PAD Studio at concept stage, but once we get into the process of creating the detail, we always model our projects at an early stage.

Consider the choice of materials to any new addition carefully, too. There is nothing worse than trying to match existing materials like brickwork and not quite achieving a successful match. It is far better to have a natural break when joining elements, either in materials or via a glazed element. Indeed, when taking on such projects, remember you are adding something of the 21th century — make sure you celebrate that fact.

The humble bungalow must be handled with care. It's been around since the 17th century and will continue to be part of our housing stock for many centuries to come.

Above: A Contemporary Replacement

The brief the owners of this 1980s bungalow presented Jonathan Dale and colleague Rob Harwood of Jane Duncan Architects with, was threefold: they wanted a space which would serve as a family room; a boot room; and finally room to incorporate a small swimming pool. They also wanted to maximise views from the master bedroom too. And so, a dated conservatory – "which was too cold in the winter, and too hot in the summer," as architect Jonathan Dale describes - made way for a striking new addition. The render and glazed extension has not only provided plentiful space, but its modernist flat roof doubles as a show-stopping terrace for the master suite to enjoy. Steel frame was the construction system of choice, allowing for the large spans of glazing to be achieved. Rendered blockwork finishes the build

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Extending Out

A contemporary pavilion-style addition transforms a '30s bungalow

PROJECT NOTES

Architect

Grigor Mitchell Architect: grigormitchellarchitect.co.uk; 0131 610 0215

Location

Edinburgh

Project cost

£70,000 (including loft conversion)

Build time

Aug - Dec 2012

home is not only a means of increasing the footprint, but can also provide an opportunity for adding architectural 'wow' to an existing property — as this project in Edinburgh, designed by Grigor Mitchell Architect, goes to show.

The project was set in motion in May 2011, when Grigor Mitchell visited the property to discuss ways of adding space with the homeowners. While a loft conversion was an obvious solution, architect Grigor also spotted the potential to extend at the rear; to create a modern addition which would provide the existing house with a muchneeded connection with its tiered garden.

The result is a centrally placed extension,

which sits on a level with the mid-tier of the garden – 800mm above the floor level of the existing house – and is accessed from the main house by a small flight of stairs. A new utility and shower room – which service the existing kitchen/diner and a bedroom – flank the staircase to either side. The flat roof ensures this rear addition is not visible from the street, and that the extension remains subservient to the main house.

"There is a strong symmetry to the existing floorplan which I wanted to continue in the new extension," says Grigor of the siting of this new addition. The centrally positioned extension also addresses two further issues: the first of overlooking. "There were perhaps no objections as the proposed extension posed no issues with overlooking or blocking light from neighbouring homes," adds

IMAGES: C/O GRIGOR MITCHELL ARCHITECT



Grigor. In addition, it also meant one of two existing windows and a set of patio doors on the rear elevation could be retained; enabling natural light to reach existing rooms.

A large rooflight has been installed above the short flight of stairs, allowing further natural light to reach the existing property.

Glazing was always going to be an important feature in making the most of the surrounding greenery, too. Large picture windows have been added to both the south and north. "The north-facing window captures far-reaching views, while the south captures solar gain," says Grigor. Quality alu-clad windows – which feature aluminium on the exterior, and wood on the inside – provide a low-maintenance finish.

On the exterior, the windows are bordered by zinc, which continues up over the eaves — this material adds a real contemporary flair to the extension. "It's a long-lasting natural material which lends sharp, clean architectural lines," says Grigor.

Timber frame was the construction system of choice. "Around 70-80 per cent of builds in Scotland are timber frame. This construction provides a quick build," says Grigor. A breathable woodfibre insulation

Above: A New Garden Room

Glazing was massively important, both in bringing natural light into the new room, but also in making the most of the views; the alu-clad windows are from Rational. Rooflights work particularly well in introducing light from above — including the one positioned above the staircase (RIGHT), which leads to the existing kitchen/diner

was chosen to create a breathing wall. This is encased by an outer leaf of masonry, which is clad in a dash render, tying the new addition in with the existing. "This insulation system can take render directly, but due to the weight of the dash render, blockwork was required," explains Grigor.

The result is a hefty 400mm-wide wall which plays a key role in ensuring this garden room remains usable throughout the seasons. "In fact, it's the warmest room in the house," adds Grigor.

The pavilion-style garden room has transformed the way in which the property is used; what's more has added a total of 45 m² of space, together with the loft conversion.





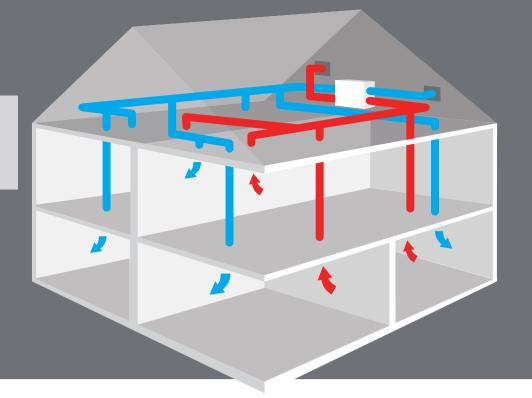




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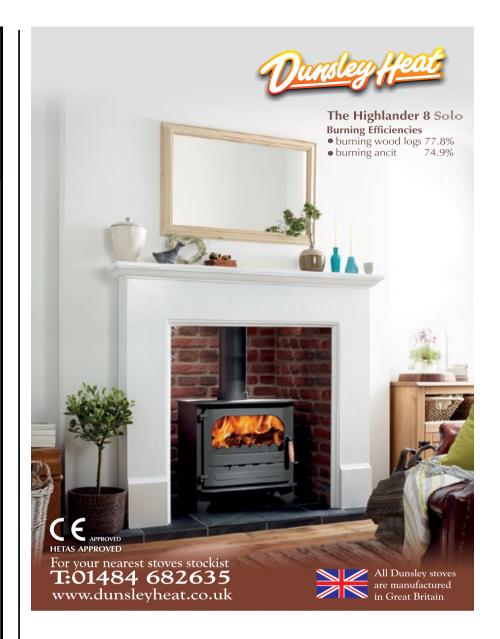
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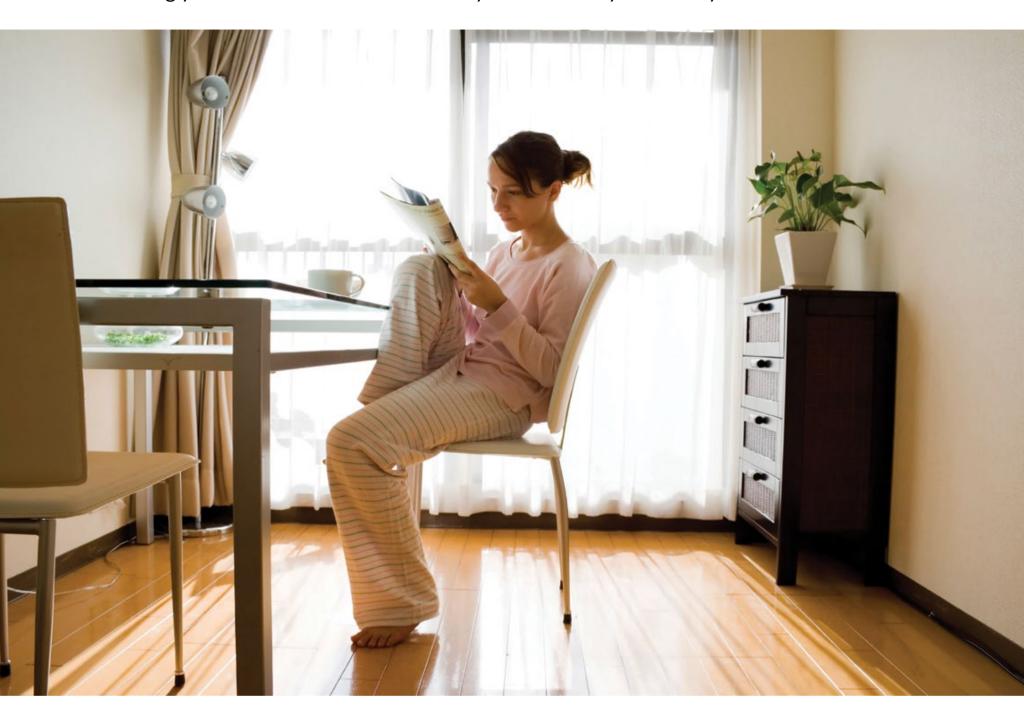




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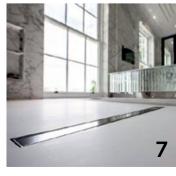
















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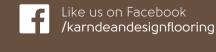


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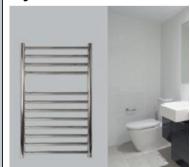
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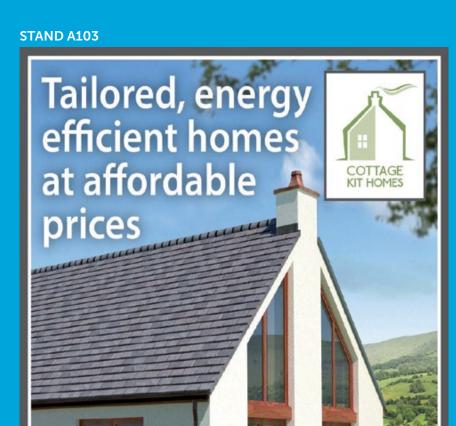


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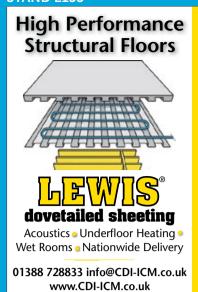
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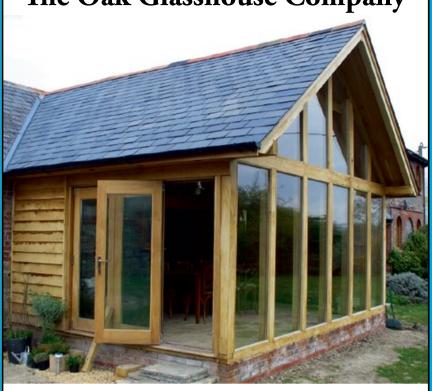
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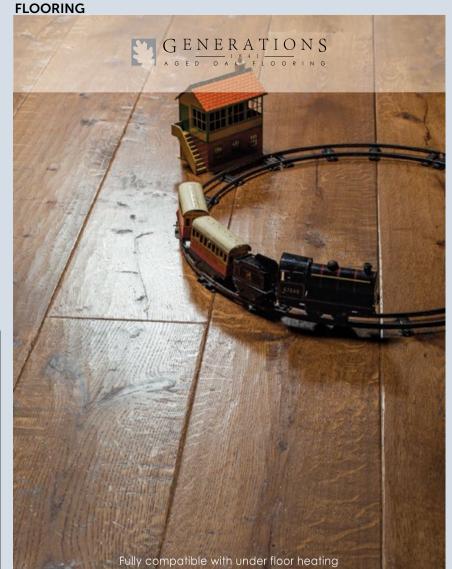
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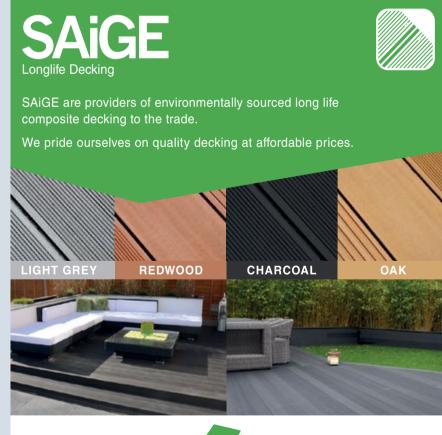
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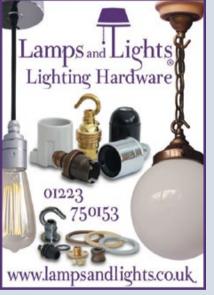
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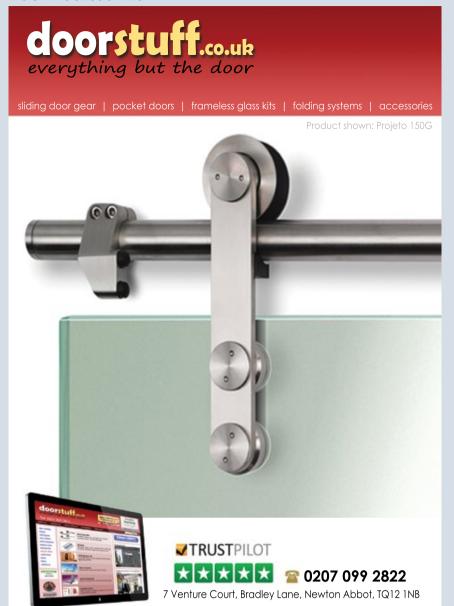
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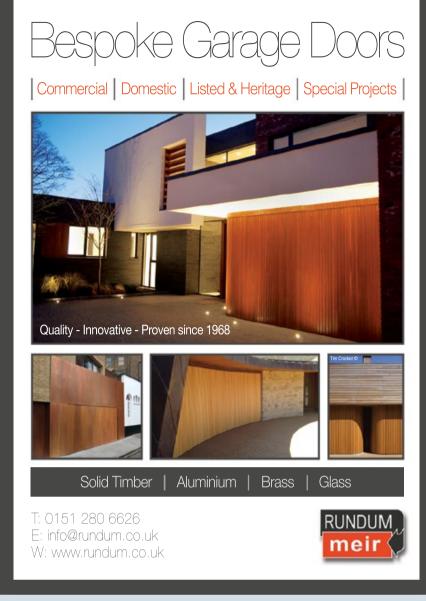


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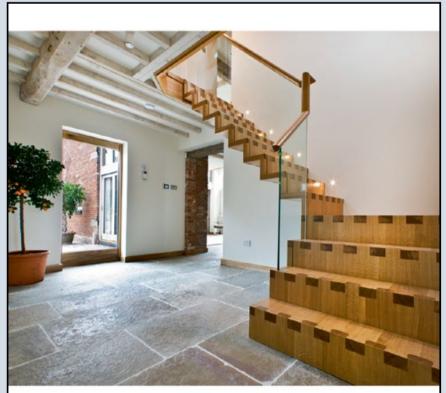
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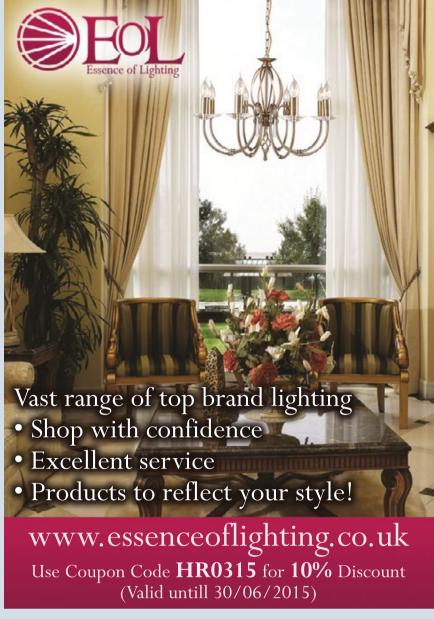
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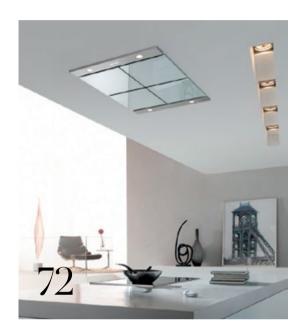
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The Through View

Architect Lesley Hally shares one of her favourite design tricks

with poor circulation space and not knowing quite where to go next. When designing a project, one of the key things I like to include is a 'through view' — as this immediately identifies which spaces to flow into. The idea behind this concept is not to hit you with an impactful focal point straight away, but instead offer glimpses of what is to come — enticing you to progress through the house.

here's nothing worse than walking into a house

By directing the eye using simple methods such as linear flooring, lighting and streamlined interiors, the view – whether this is a piece of artwork or a spectacular

Lesley Hally is the Principal Architect at the practice LA Hally Architect (lahally.com)

sea view – can then open out like a grand finale to the main event. Adopting these simple techniques to draw you towards a space will provide interesting interiors that capture the imagination and excite

gination and excite.

HOW TO DO IT

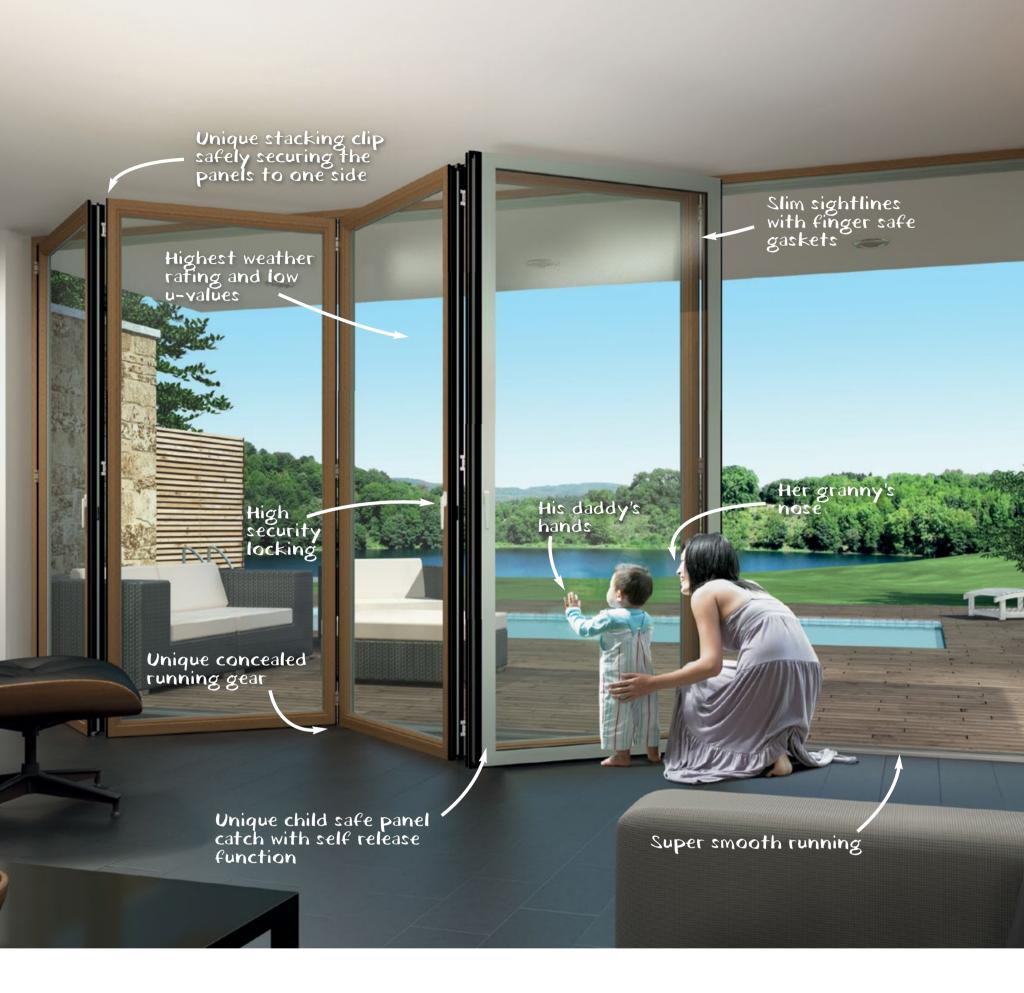
To achieve a through view, first decide on the focal point you want to direct your interiors towards, and plan accordingly: this may require the opening up of spaces or moving windows or walls. In corridors, remove cupboards and have touch-latch doors so that all surfaces are streamlined. Designate lighting so that it runs towards the view, and lay flooring in the same direction. Keep it simple: less is more.



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