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an old house

Guides to roof
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Welcome

If the success of our first *Build It Live* show of the year is anything to go by, then people aren't letting Brexit get in the way of their dreams for a bespoke home. It was fantastic to see so many of you with plans in hand, ready to move ahead with a project – and our expert team was delighted to be able to pass their experience on to visitors and, hopefully, help make a success of their schemes. If you couldn't make it along to the South East or North West shows, there will be another chance later this year at *Build It Live* Bicester on 10th & 11th June.

In the meantime, there's plenty to inspire and learn from in this month's edition. We've got a great mix of real-life projects, including a stunning oak frame lodge (page 20), an ultra-modern extension to a Georgian home (page 36) and a clever Arts & Crafts-inspired scheme that adds a whole new storey to a bungalow (page 50). There's also in-depth advice on building a healthy home (page 58), choosing roof tiles (page 65), insulating older houses (page 68), selecting low-maintenance materials (page 100) and how to get reliable quotes from builders (page 115).

The big news this month is the arrival of the Sajid Javid's long-awaited Housing White Paper, which is set to inform the government's next raft of policy-making. The headline story is that ministers are continuing to put self and custom build at the heart of their plans – and in fact it's highlighted as one of 30 core points in the White Paper. Key policies include maintaining the Community Infrastructure Levy exemption for self builders (and those planning extensions) and working with lenders to encourage greater mortgage choice. There's also a strong commitment to support the new Right to Build, which requires local authorities (LAs) to maintain a register for those seeking to create custom homes in their areas and deliver enough viable land to meet demand – with the potential for further legislation if LAs don't take sufficient action. Find your Right to Build register at www.righttobuildportal.org.

MEET THE TEAM



EMILY SMITH is *Build It's* deputy editor. She has an in-depth understanding of the challenges self builders and renovators face. This issue, she looks at designer brickwork (page 62) and helps you select windows and doors (page 88).

REBECCA FOSTER

is *Build It's* assistant editor. Each month she tracks down the latest news, products and projects to inspire you (page 9). On page 79, she reveals what you need to know about building with panellised timber frame.



TIM DOHERTY was the founding MD of the NSBRC and runs Dobanti chartered surveyors. He advises on a range of self build issues, including finance. On page 104 he explains the benefits of demolish and rebuild.

MIKE DADE is a planning specialist and plot-finding expert. He's the author of several must-read books on land and planning. This month, he gives his insider advice on how you can successfully appeal a planning refusal (page 111).



JULIAN OWEN is *Build It's* design doctor. He is a self build architect and the founder of the Association of Self Build Architects. On page 100 he explains how to design and realise a low-maintenance home.

ALAN TIERNEY is a historic buildings consultant and conservation specialist, offering hands-on advice to owners of heritage homes. This month he reveals the top period features to restore, and how to get it right (page 107).



MIKE HARDWICK is a consultant and project management specialist, and has been heavily involved in promoting self build with NaCSBA. On page 115 he explains what you can do to ensure your builders' and trades' quotes are fair.

OPINDER LIDDAR

is director of award-winning practice Lapd Architects and a regular expert at the *Build It Live* shows and the National Self Build & Renovation Centre. He was also the design brains behind *Build It's* Benchmark House.



NIGEL GRIFFITHS is a sustainability consultant and the author of Haynes' *Eco House Manual*. On page 68, he gives his expert tips on how to insulate an old property whilst maintaining its key characteristics and underpinning its value.



Chris

CHRIS BATES, EDITOR

68

How to upgrade your home's insulation

Eco consultant and sustainability expert Nigel Griffiths looks at the key strategies and considerations that will help you improve your property's thermal performance.



115

How to get realistic quotes from builders

Mike Hardwick explains why the prices you can expect from contractors can differ – and what you need to know to get an accurate figure for all the work involved in your project.



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20



29



43

36



50

READERS' HOMES

COVER STORY

Lodge living

20

Matt and Jo Trench's stunning oak frame abode boasts a double-height atrium that draws in its woodland setting

Perfect package

29

The Watkinses jumped at the chance to create the bespoke timber frame house of their dreams on a plot that offered the perfect design and build opportunity, in an ideal spot

New beginnings

36

Hoping to revitalise their tired Georgian dwelling, Howard and Denise Horsman embarked on a full renovation and extension project, adding wow factor to its heritage charm

Modernist masterpiece

43

12 years after joining forces with their friends to purchase a large plot, Gordon and Aileen Spink have self built their contemporary home with a distinct Scandinavian aesthetic

Double-up

50

Drawing on his own skill and inspirational work ethic, Adam Bradstock has turned an unsightly bungalow into an Arts & Crafts-style house for him and his wife Karla

RENOVATION & BUILDING

COVER STORY

Building a healthy home

58

Chris Bates reveals how to ensure your scheme promotes wellbeing by taking a holistic approach to designing for comfort, good lighting, air quality and optimum layout

COVER STORY

Brickwork patterns

62

Emily Smith investigates how creating a masonry focal feature can add visual flair to your dwelling's facade

COVER STORY

Choosing traditional roof tiles

65

Whether you're renovating or self building, it's crucial that you specify the right roof covering for your project. Rebecca Foster covers the key elements to making the right decision

COVER STORY

Upgrading your home's insulation

68

Improving the eco credentials of an existing abode can be a tempting proposition, but there are pitfalls to avoid in order to prevent long-term damage – Nigel Griffiths explains all

Designing an ICF home

72

Emily Brooks uncovers how insulating concrete formwork is fast becoming known for more than just quick build times and high insulation levels – it can enable great design, too



62



76



15



107



72



58

TIMBER SPECIAL

Timber in construction 76

Regardless of your project's style or structural system, wood will play a part

Timber frame 79

Is this fast, flexible and cost-effective route the right choice for your scheme?

Oak frame basics 82

Opt for character and sustainability with this forever-popular, age-old technique

Building with SIPs 85

Minimise on-site stress and energy costs with structural insulated panels

Doors & windows 88

Discover why timber could be the ideal material for your upcoming project

Cladding ideas 91

Get inspired by a broad range of stylish and durable wood cladding products

12 tips for flooring 93

Consider these golden rules for picking a wood floor that both lasts and impresses

Garden buildings 97

Could a timber structure be the perfect new addition to your outside space?

EXPERT HELP

Durable by design 100

Architect Julian Owen reveals how carefully specifying materials can give you your ideal low-maintenance home

Demolish & rebuild 104

Tim Doherty explains why knocking down an existing house could lead to the perfect plot for your new dwelling

Restoring period features 107

Conservation expert Alan Tierney provides his expert tips for preserving an historic property's heritage appeal

COVER STORY Dealing with planning rejections 111

By sharing four real-life examples and their outcomes, Mike Dade demonstrates how you can respond to a refusal

COVER STORY How to get realistic quotes 115

Mike Hardwick's guide demystifies the process of going out to tender and sets out how to obtain reliable figures

Into the woods 122

Could this woodland site provide the Millers with the self build plot they've been looking for? Mike Dade investigates

REGULARS

Inspiration 9

Build It's favourite finds this month

Your views 16

Readers' experiences shared

Subscribe today 106

Ask our experts 118

Our specialists tackle your questions

Self build mortgages 121

Find the best lender for your scheme

Land for sale 125

Inspiring plots for your project

Next month 137

Coming up in May's issue

Focus on 138

The FMB's Andrew Dixon talks about how Brexit might affect self builders



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Starting from scratch

The owners of this country house in East Sussex decided to demolish the 1950s bungalow that originally occupied the site and create a new home. The team at John Bullock Design re-positioned the dwelling on the plot in order to maximise the full potential of the space. To ensure the building responded sympathetically to the landscape, it

was designed to look like a period property that had been added to over time. The main structure was constructed in the style of a traditional farmhouse, with a Georgian-inspired extension adding extra visual appeal. An external materials palette of brick, tile and weatherboarding helps the new abode blend with the local vernacular.

For more information call 01892 525732 or visit johnbullockdesign.com

PROJECT OF THE MONTH

Bunkers Hill

by Kast Architects

When the owners of this granite cow barn in Cornwall first laid eyes on the property, they were immediately attracted to its simple, characterful aesthetic and the windswept, rugged surroundings. Keen to create a contemporary and sustainable home, the team of designers at Kast Architecture was tasked with developing a conversion scheme that was tailored to the occupants' needs. Because it was a priority to retain the authentic style of the agricultural structure, the new timber-clad extension is visually subservient to the main building.

The internal layout of the barn was also reconfigured to provide the owners with the spacious four-bedroom family home they desired. Original elements such as exposed brick partitions and timber beams were preserved to emphasise the traditional character of the building, while crisp white walls and wood flooring infuse the interiors with a distinctive modern vibe. In the extension – which accommodates a new kitchen-diner zone, perfect for the family – large windows and a rooflight draw natural light inside.



For more information call 01872 241111 or visit kastarchitects.com

New custom build opportunities

East Staffordshire Borough Council is launching its first self build scheme on a site in Burton-upon-Trent. The authority is working with Custom Build Homes and specialist financial services provider BuildStore to bring the 25-plot project forward. The land will be developed in three phases, the first of which will comprise eight sites. There are plans to create three, four and five-bedroom dwellings, and homeowners will be able to dictate their level of involvement in the build process. Plots will start from £85,000.

20%

is the amount planning costs could rise, according to the government's Housing White Paper. Local authorities that do opt to inflate this fee will have to reinvest the extra money into the planning infrastructure. This could add more resource to planning offices around the country, potentially speeding up decisions and enabling the release of more plots. "It's one of the biggest game changers to come from the Housing White Paper," says Brian Berry, chief executive of the Federation of Master Builders (FMB).

Planning changes proposed in Scotland

The Scottish government has laid out 20 action points for how the country's planning system can be reformed. Policy-makers want to boost the delivery of new homes, and promoting self build is set to be a major part of their strategy. Expanding on the recommendations of an independent review, ministers are also keen to allocate more land for housing. "I firmly believe that Scotland's planners can lead the delivery of great places," says Kevin Stewart, Scotland's planning minister. A bill formalising the proposals is expected to be published later this year.

What's on?

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Veterans in Plymouth prepare to complete self build project

A group of 12 ex-service personnel in Plymouth are counting down the days until they can move into the homes they have been building for themselves over the past year. The Nelson Project will comprise accommodation for each of the veterans who has laboured on site, in addition to 12 more units including homes for adults with learning disabilities and affordable homes for sale. The development is a collaboration between Plymouth City Council, the Homes and Communities Agency, DCH and the Community Self Build Agency (CSBA), *Build It's* partner charity. All ex-service personnel who have worked on the scheme have been able to achieve a foundation level 1 in construction, three health and safety qualifications and obtain a Construction Skills Certification Scheme (CSCS) card.

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need to know

The dangers of cutting corners on your self build project

As part of the service I offer self builders who attend my courses at the National Self Build & Renovation Centre, attendees get advice about issues they're having with their schemes and the invitation to get in touch. Obviously, I'm not offering to manage everyone's projects, but if there's a question I can help with, I'm happy to do so.

It's satisfying when people send me photos of finished schemes, and perhaps a nod of thanks for pointing them in the right direction – or in some cases lending a hand so they can avoid costly errors. My record to date for helping someone save money is £18,000. This person was erroneously invoiced for VAT on the labour element of their self build project – I caught that just in time.

I also get emails asking for my views on people's approach to a project, often wanting to know my opinion on whether an idea they've had will help to cut costs. I try to be objective, and while some of the proposals could potentially save a few pounds, some of the more novel concepts could end up costing a fortune.

My advice for first time self builders is as follows. Firstly, hire a competent architect or designer. Next, get that person to create and submit your planning drawings, followed by Building Regs drawings for full plans approval by either the local authority's building control department or an approved inspector. These documents allow your designer to price the scheme up accurately and understand what's required, while the inspection regime from a full plans building control submission makes sure it's built correctly.

The trouble is, all of the above costs money and people may cut corners. One recent correspondent was convinced his architect was ripping him off. He asked me to confirm that putting a few dimensions on the planning drawings and using a building notice (ie not submitting Building Regulations drawings), while relying on individual trades to know and apply the relevant regs was a good idea to save money. Once I had lifted my jaw off the desk, I wrote a response that suggested he was headed in the opposite direction to the one I would recommend, and invited him to think again.

Would his approach have saved some cash? On paper, possibly. And who am I to say the whole thing couldn't have gone without a hitch? However, with no detailed drawings, no formal inspection regime and a bunch of individual trades who might know some bits of the regs, but not all, savings at the front end of the build would most likely be lost in a snowball of misunderstandings, mistakes and costly reworkings. All of this could result in overspending. It's simply a false economy to bypass these key components.

Apart from the client, no one is doing this for the love of it, so firms involved will be making a profit. Your aim is to get the finished article completed on budget, and ideally for less than its final market value. The bigger the difference, the better. Taking the right approach might mean a larger outlay, but it's worth it.



MIKE HARDWICK

is a self build consultant and project management specialist. He has worked closely with NaCSBA and is a leading figure in the self build industry. He also delivers a self build course at Swindon's NSBRC.

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product news

Great shopping ideas for your custom home project



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This stunning bespoke oval-shaped electric radiator doubles up as both a heat emitter and a piece of artwork. The dimensions of the panel can be customised to suit your living space. **Venus designer radiator, £900, livingstoneheating.co.uk**



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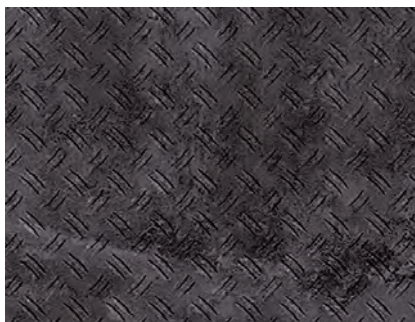


NATURAL BRIGHTNESS ↓

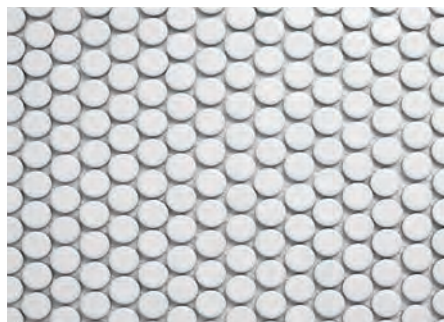
Designed for use on a flat or low-pitched roof, this bespoke unit will bathe your interiors with natural illumination. With a frame made from Accoya modified timber, it can be specified to meet your design requirements. **Planus Accoya rooflight, £950, lumenrooflight.co.uk**



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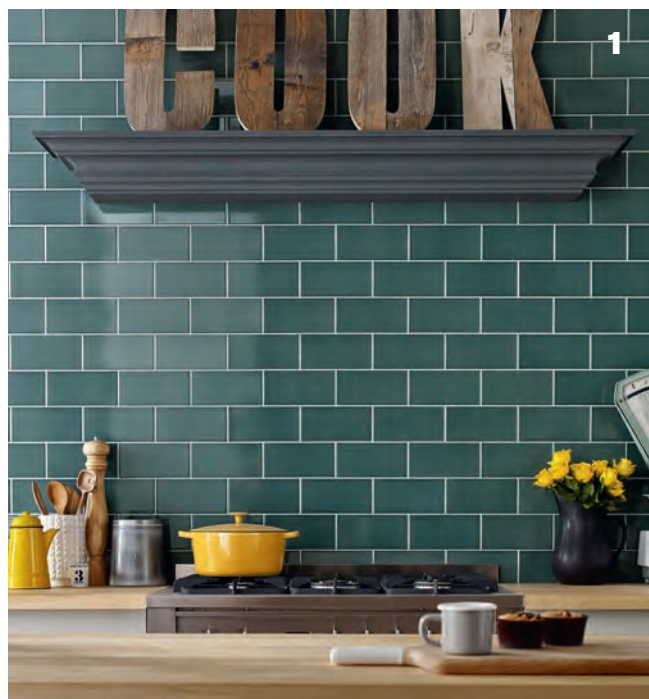
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interiors notebook

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- 2** Crafted from aluminium with a matt lacquer exterior and powder-coated interior, this fitting is available in two sizes and a selection of colours. **Gubi ronde in pigeon grey, £349, rume.co.uk**
- 3** Featuring a brushed, lacquered coating, this flooring suits traditional and contemporary decorative schemes. **Par-ky prime grade antique oak engineered flooring, £19.15 per m², havwoods.co.uk**
- 4** This golden shade of paint will brighten up your home in an instant. Suitable for walls, ceilings and woodwork, it provides a chalky surface finish. **Oro Antico matt emulsion, £20 per 2.5L, colourcourage.com**
- 5** Perfect for family kitchens, this cast iron range cooker comes in an array of hues. It features two ovens and two hotplates that are ready for use at all times. **Two-oven Aga in pistachio, from £6,756, agaliving.com**

your views:



Got a funny story, a gripe or some superb self build advice? Write to us at buildit@castlemedia.co.uk or the address below for your chance to win a prize



star letter Is pre-app pointless?

The star letter writer wins an Einhell cordless drill, worth £119.99

We were recently disappointed to discover that our planning application for a new timber frame, brick-clad home in rural Oxfordshire had been refused. This came as a surprise given that we had followed the detailed feedback from our pre-application meeting with the local authority (LA) to the letter. Amending the ridge height and repositioning a couple of windows will hopefully be enough to see consent granted next time around, but the delay leaves a bitter taste – especially as we were charged £300 for the privilege of pre-app advice.

Josh Simmons, via email

Editor's reply: *While pre-apps can be very helpful in understanding whether a project is viable and gauging what your LA might permit before investing heavily in the design, it's wise not to rely too much on the finer details. The council has no obligation to stand by its initial comments once you progress to a full submission, when your scheme will be properly measured against policy. There's a host of reasons things could change – your planning officer may differ from the one you met with, for instance, or there may be valid objections from neighbours and other consultees that need to be accounted for.*



ALISTAIR NICHOLLS

Change for the better

After much deliberation, we recently added a glazed extension to our Victorian home in south east London. We were nervous of

damaging the heritage charm with a modern addition, despite our architect's experience. However, whenever I walk into our new light-filled kitchen, I'm so glad we went ahead with it! I'd like to encourage others who are contemplating going down this route by saying that it has completely changed the feel of our house for the better. We've retained its original charm, while benefiting from a bright and open living environment that now leads straight into our previously neglected garden.

Pat Knowles, via email

Editor's reply: *Congratulations on a successful project. A thoughtfully designed contemporary extension is a great way to revitalise a period property for modern day living, without resorting to pastiche. Visit www.self-build.co.uk/guide-extending-heritage-home for must-read advice on adding space sympathetically.*

A home as a hobby

I'm currently sprawled across the sofa, basking in the warm glow of our woodburner whilst thumbing through *Build It*. I'm looking for advice and inspiration for our upcoming project. The reason for writing is simple – I just wanted to warn my fellow readers that this self building lark can easily get addictive. We're about to start our third one! It won't be without its challenges but you can't beat the satisfaction that comes from creating a home that's been designed just for you.

Graham Boggia, via email

Editor's reply: *You're not alone in catching the self build bug. There's always a different method or new product to try. For some, undertaking a scheme is simply the means to achieving the home they desire – but it's great if you can take pleasure in the process too. Good luck with your latest project.*

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20

20 LODGE LIVING

Matt and Jo Trench have built a stunning oak frame, barn-style home that sits naturally in its woodland setting

29 PERFECT PACKAGE

Simon and Alison Watkins took advantage of a complete design and build service, enabling them to create a wonderful custom home

36 NEW BEGINNINGS

By remodelling an historic property and adding a bold contemporary extension, the Horsmans have given new life to their Georgian dwelling

43 MODERNIST MASTERPIECE

Taking inspiration from Scandinavian design, this couple's self build home has the simple appeal of subdued colours and natural materials

50 DOUBLE-UP

A five-year labour of love saw the Bradstocks transform a tired brick bungalow into a charming timber-clad house



29



43



50



36

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Lodge living

Nestled in woodland, **Matt and Jo Trench's** barn-style house has been designed to fit into its surroundings perfectly

WORDS JANE CRITTENDEN PHOTOS ALISTAIR NICHOLLS



THE TRENCH FILE

NAMES Matt & Jo Trench

OCCUPATIONS MD of a building contractor & teacher

LOCATION Hampshire

TYPE OF BUILD Self build

STYLE Garden lodge

CONSTRUCTION METHOD
Oak frame

PLOT SIZE 0.66 acres

LAND COST £312,500

BOUGHT 2011

HOUSE SIZE 167m²

PROJECT COST £354,100

PROJECT COST PER M² £2,120

TOTAL COST £666,600

BUILDING WORK COMMENCED
September 2012

BUILDING WORK TOOK
Eight months

CURRENT VALUE
£950,000



Matt Trench and his wife, Jo, are no strangers to self building – they constructed their own home eight years ago on a six acre plot in the South Downs national park in Hampshire. However, an acre of land bordering the road in front of their house didn't belong to them. So when it came onto the market in 2011 with planning permission for a new bungalow, Matt was determined to buy it. "This is wooded countryside and we look out across the hills, so I didn't want someone putting up an ugly bungalow that would spoil the views," he says.

A tempting prospect

The site was on the market at offers over £250,000 and there was plenty of interest. Matt decided to aim high and paid £312,500 to secure the purchase. He then left the plot untouched for a year. "I didn't actually plan to build anything at first; but I do run a property development business, so I'm always looking for new opportunities," he says. "I suppose it was inevitable I would do something."

About a year later, Matt started to work on a design for an oak frame building that would nestle into the woodland setting. He was keen for it to be subservient to the couple's classically-styled self build home, and hit upon the idea of a lodge that would appear to be an original barn belonging to the main house.

Matt asked friend Hugh Adlam, who runs Absolute Kitchens, to produce some initial drawings. "Hugh does all my concept sketches at work and helped me flesh out my ideas for a Hampshire-barn-meets-ski-lodge-chalet," says Matt. "I wanted a double-height atrium, which meant the volume of the new house would be bigger than the original permission but still sit on the same footprint."

Although he hadn't intended to build the lodge for at least another few years, Matt was so delighted by Hugh's final drawings that he decided to approach the planners straight away. "It was exactly what I wanted, so I applied to change the original permission," he says.

Consent was granted in September 2012, at which point Matt got on with clearing the site. His aim was to complete the foundations before the permission expired, which would then allow him to finish the project at his leisure. "In the end, as soon as they were laid, I thought I might as well get on with the rest of the build," he says.

Money matters

The couple needed to borrow money to fund the works, and Matt admits he took a risk with the mortgage. Providers invariably require you to secure a 10-year structural warranty from a reputable firm before they'll agree to lend on a new build house. Matt's mortgage supplier specifically wanted proof of an NHBC warranty, but NHBC wasn't willing to ratify the oak frame until the lodge was complete.

"I could have got to the end of the project and found the NHBC had decided to refuse the warranty," he says. "It was really stressful. I still had to chase them even three months after I'd finished, as without the warranty I couldn't repay my loans."

An experienced project manager with a meticulous work ethic, Matt ran a very tight ship when it came to the budget. This was particularly important given a local estate agent had indicated





The lodge's high pitched roof and oak frame are a nod to vernacular Hampshire barns. The house is faced in Wienerberger's Terca Renaissance Multi bricks

they felt the house wouldn't be worth more than £700,000 because of its location next to the road. With this figure stamped in his mind, and given the plot cost of £312,500, Matt allocated £350,000 to the building works and set out to ensure he wouldn't overspend. Trinder Architectural produced detailed drawings from Hugh's concept and set out exact measurements and specifications for every aspect of the project. This gave Matt a reliable point of reference for buying materials and helped him allocate well-researched costings for everything – right down to small details such as the ironmongery.

"At the end of the day, if I wasn't able to deliver a house to budget then I wouldn't have a business," he says. "I kept a good handle on the costs so that if I overran in one area I could react by cutting back elsewhere and avoid things spiralling out of control."

A quick build

Matt continued to run his London business alongside the build. He'd spend a maximum of three hours on site each day, starting at 7.30am and then driving to work at 10.30am. Acting as both client and contractor proved to be a refreshing change. "I didn't need to hold client meetings and if something didn't work I could just change it, rather than waiting for a decision from someone else. It meant the process progressed much faster," he says.

Green Oak Carpentry was appointed to erect the structural shell, as the firm is based nearby and responded very quickly with a quote. They turned around a 3D image within days, and before long the frame was delivered to site. "Access wasn't brilliant because we have a tight driveway," says Matt. "The crane had to be half on our land and half on the road. We didn't know this until it arrived and we didn't have permission to block the road for deliveries, so we just had to get on with the job as quickly as we could."

Matt hired a carpenter – a friend of a friend – he could trust to be the foreman for the first three months, but the rest of the site crew



Designed and fitted by Absolute Kitchens, the bespoke culinary zone is from Italian supplier Cesar and features Mocha quartz worksurfaces from GlobalTopz

WE LEARNED...

LISTEN TO ADVICE from the experts.

Green Oak Carpentry warned me that new oak moves and would leave gaps around the edges of the aluminium windows unless we fitted a sub-frame. I didn't think it would shrink as much as 20mm – and we ended up having to install another frame around each window to fill the gap, at a cost of about £3,000.

DON'T SKIMP ON proper architect and engineer drawings, as the detail these give will guide your purchasing decisions, inform your builders and help to ensure your project runs more smoothly.

SPEND YOUR MONEY at the outset on the fabric of the building; don't save it for the kitchen, because elements like this can always be upgraded later.



“I wanted a double-height atrium, which meant the volume of the lodge would be bigger than the original permission but still sit on the same footprint”

was new. “As I live in Hampshire and my usual team is based in the London area, I sourced local trades, vetting their previous work and agreeing priced packages,” he says. “I’d advise other self builders not to accept day rate work, as the costs can easily spin out of control.”

The project progressed well, meeting all the key dates on Matt’s timeline. His experience was a big help in achieving this – as demonstrated by the fact the landscaping was commenced two months before the lodge was finished. “The garden had a chance to grow while I was decorating,” he says. “By the time the lodge was completed in May 2013 the lawns looked great.”

Dealing with the unexpected

Two unplanned costs did arise over the course of the works. Matt knew from his previous self build that there would be no mains drains on the site. With that older project, which is located at the top of a valley, it had been possible to install a soakaway running from the main house down the hill into the woods below.

This plot, however, is flat and set on impermeable clay soil. As a result, an aerobic waste management system was required, and Matt’s team had to dig a series of 5m-deep holes measuring 10m x 1m in footprint to provide an adequate soakaway. “I’d assumed that a fairly simple arrangement would be sufficient to discharge rainwater, but the clay made this impossible,” he says. “It ended up costing about £20,000 more than we’d budgeted.”

Another unforeseen spend was the mechanical ventilation and heat recovery (MVHR) unit. The lodge has a high pitched ceiling that’s open to the roof, and the couple’s building control provider was concerned that warm air could become trapped at the top – potentially leading to condensation and mould. One way to solve the issue was to install roof windows – but Matt didn’t want to fit these. “The building is meant to look like an old barn,” he explains, conscious that punctuating the roofline may have detracted from this heritage appearance. “Fitting MVHR was the best alternative, as it extracts stale air and replenishes the interiors with a fresh supply – but the system cost me about £10,000.”

Matt clawed back these extra costs through a combination of reducing the landscaping budget and securing great deals on elements such as the wood flooring and other internal fittings. He also spent less on the bathroom fixtures and fittings than initially planned, instead choosing to concentrate on the basics such as good quality stone tiles. The internal doorsets, which came ready-made and spray finished, were a canny purchase. The kits cost around £300 each from Humphrey & Stretton but proved great value for money, as one person can fit around 10 doors in a day.

Adding value

Matt and Jo are really pleased with the finished result. The house is actually worth £950,000 and the project came in only £11,000 over budget (including the £7,000 they’ve spent on soft furnishings),



despite the unexpected costs that came their way. That represents a total profit of over 40%, should they ever decide to sell.

Currently the lodge is used as a place for guests to stay. “It’s one of the nicest houses I’ve ever worked on and I’d definitely build an identical version of this on another plot,” he says.



closer look

The overhanging roof...

Matt chose Trinder Architectural to transform Hugh's concept into working drawings and put the project through planning. The revised design was considered an

amendment to the approved scheme, using the same footprint and location on the site but increasing the roof height by 780mm – whilst preserving the original pitch.

The steep roof is a key architectural feature, dominating the main elevations and helping to underpin the barn-style effect Matt and Jo had hoped to achieve. At the rear, it extends past the external walls to form a characterful garden-facing veranda, which is perfect for enjoying the views and provides a dry space for storing logs.



The veranda & loggia

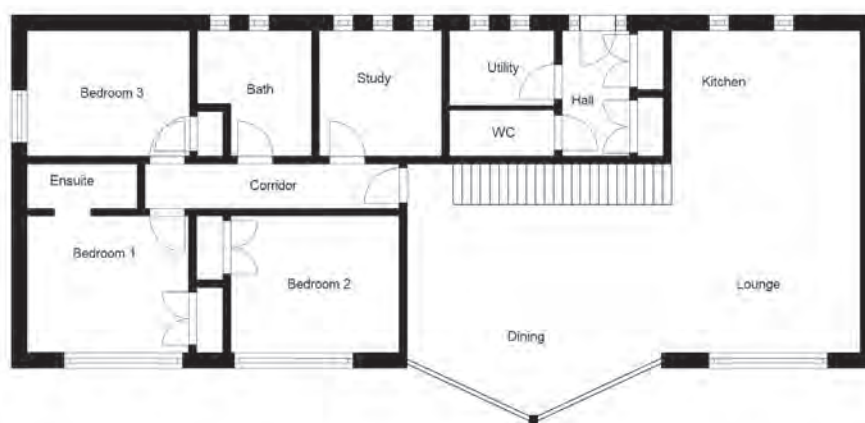


TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Foundations	£179	8%	£30,000
Drains	£120	6%	£20,000
Oak frame	£239	11%	£40,000
Roof structure & covering	£171	8%	£28,600
External walls	£132	6%	£22,000
Internal walls	£90	4%	£15,000
Windows & doors	£120	6%	£20,000
Floor, wall & ceiling finishes	£120	6%	£20,000
Joinery and fittings	£90	4%	£15,000
Plumbing & heating	£120	6%	£20,000
Electrics	£90	4%	£15,000
MHVR	£60	3%	£10,000
Kitchen	£132	6%	£22,000
Bathrooms	£90	4%	£15,000
Decorating	£75	4%	£12,500
External works	£143	7%	£24,000
Professional fees	£149	7%	£25,000
Grand total			£354,100



Floor plans



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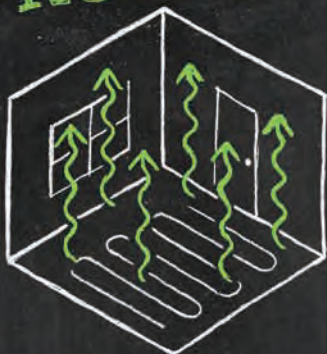
Useful contacts

ARCHITECT Trinder Architectural 01428 685829 www.trinderarchitectural.co.uk **PROJECT MANAGEMENT** Analytic Building Contractors 0845 279 7604 www.buildingbeautifulhomes.co.uk **OAK FRAME** Green Oak Carpentry 01730 892049 www.greenoakcarpentry.co.uk **BRICKS** Weinerberger 0161 491 8200 www.wienerberger.co.uk **ROOF TILES** Marley Eternit 01283 722588 www.marleyeternit.co.uk **WINDOWS & EXTERNAL DOORS** HQJ 01252 548702 www.highqualityjoinery.co.uk **INTERNAL DOORS** Humphrey & Stretton 01992 462965 www.humphreystretton.com **KITCHEN** Absolute Kitchens 08444 146 046 www.absolutekitchens.net **WORKTOPS** GlobalTopz 01442 877600 www.globaltopz.co.uk **BATHROOMS** Bathstore 0330 053 5661 www.bathstore.com **TILES** Mandarin Stone 01600 715444 www.mandarinstone.com **TIMBER FLOORING** Atkinson & Kirby 01695 573234 www.akirby.co.uk

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Perfect Package

A developer-owned plot on the Scottish Borders provided the ideal self build opportunity for **Simon and Alison Watkins**, who had free rein to design a bespoke home they adore

WORDS JANE CRITTENDEN PHOTOS DAVID BARBOUR



When Simon Watkins took a new job at a hospital in Jedburgh, Scotland, it proved to be the catalyst for he and his wife Alison's decision to self build. For the first 18 months Simon lived in Jedburgh alone, commuting back to the family home in Norfolk whenever he could. Alison needed to stay put until the couple's youngest son finished his A Levels. "It was stressful living apart, but we knew we liked this area as we'd been on a hill-walking holiday here in 2006," says Simon. "We love the outdoors and I wanted to join the mountain rescue team. I rented a flat and then later a house when Alison joined me here in January 2010."

When Alison moved to Jedburgh permanently, the couple began searching for a suitable property or piece of land that they could purchase. Before long they realised that the likelihood of finding an existing dwelling that ticked all the boxes was fairly slim. "We were either uninspired by the architecture, or liked a house but knew it would be cold and expensive to heat," says Alison. "We then made a firm decision to narrow down our hunt by focusing on plots alone."

Golden opportunity

Again, the Watkinses struggled to find anything that was suitable, and discovered that many of the most promising pieces of land



The house is clad in local stone and natural slate to give it a more traditional feel

“I thought that Gordon would start by asking us what we wanted to build, but instead he asked us how we like to live and what is important to us in a home”

had already been snapped up by developers. However, in the end, this was exactly how Simon and Alison struck gold.

In April that year, a local contact told the couple that Gilbert Developments was selling five renovated steading cottages along with four building plots on a 20-acre site. Unusually, the contractor – David Palmer – was selling the individual portions of land as part of a complete design and build package using recommended architect, Gordon Melrose. The Watkins were smitten right from the word go, falling in love with the picturesque valley and uninterrupted views. The site was also close enough to the main road for Simon to be able to reach the hospital, even when it snowed.

“We’d never tackled a project like this before, but we could tell we’d met some nice people who had a good reputation,” says Simon. “We knew we’d never get anything except good advice and quality workmanship from David and Gordon, and we were proved right.”

As well as giving Alison and Simon the opportunity to work with Gordon to create a completely bespoke abode, the cost-effective communal biomass boiler system that provides hot water to all the houses on the site was a huge attraction. “Our home looks completely different to any of the others around here,” says Simon. “My patients all know which property I live in. In fact, it’s our house that’s printed on the side of the Gilbert Development vans.”

The Watkinses were the second couple to buy a plot, and could therefore choose from three remaining sites. In the end, they settled

on a patch measuring just over one third of an acre in the southwest corner of the development. The major attraction of this particular site was the fact that it had far-reaching views, with no danger of another house being built in front to block the scenery. It came with outline planning permission for a four- to five-bedroom property and an integral garage, and the couple also bought an extra 0.5 acres of adjacent land. “We’ll probably develop the paddock as a garden at some point, but at the moment we have sheep grazing here,” says Simon. “The land is also a good asset if we ever do decide to sell, as lots of people in the area keep horses.”

Developing the design

When Simon and Alison got chatting to their architect, Gordon, about the aesthetics and layout of their new home he came back with two outline drawings of different sizes and prices. At this point, no money had exchanged hands, so the couple still had the option to re-assess their options and approach another architect, or pull out of the project altogether. However, they liked Gordon’s ideas and decided to pay £4,000 to go with the largest scheme.

Simon and Alison worked closely with their architect throughout the rest of the design process. “I thought that Gordon would start by asking us what we wanted to build, but instead he asked us how we like to live and what’s important to us in a home,” explains Simon. “We thought these questions were great. Gordon focused on the

THE WATKINS FILE

NAMES Simon & Alison Watkins

OCCUPATIONS Doctor & social worker

LOCATION Jedburgh, Scottish Borders

TYPE OF BUILD Self build

STYLE Contemporary

CONSTRUCTION METHOD Timber frame

PLOT SIZE One acre (incl. adjacent paddock)

LAND COST £105,000

BOUGHT 2010

HOUSE SIZE 256m²

PROJECT COST £328,000

PROJECT COST PER M² £1,281

TOTAL COST £343,000

VAT RECLAIM £31,000

BUILDING WORK COMMENCED August 2011

BUILDING WORK TOOK Nine months

CURRENT VALUE £470,000



The open-plan kitchen-dining-living area looks straight out into the garden and towards the views beyond

smallest of details, like the fact that our two sons and I are each over six feet tall. As a result, not many of the rooms have flat ceilings.”

The couple also showed Gordon their scrapbook of magazine clippings with sections on interior finishes, landscaping and even furniture. They talked him through their vision of a south-facing garden, and a home that incorporated plenty of glazing that would draw in natural light and encapsulate the views. Gordon developed

a plan to contend with the sloping plot by dividing the house into two buildings on different levels, and linking them together with a passageway lined with large windows. “We thought this element was very different, and gave the property a gorgeous airy feel,” says Alison. “We’re also big fans of the upside-down layout.”

The upper building houses the main living spaces and the master bedroom, while the lower part of the structure accommodates



WE LEARNED...

TRUST YOUR TEAM. Once we met David and Gordon, we knew that we could work with them. Developing that good relationship was integral to the success of our self build project.

CREATE A SCRAPBOOK by buying magazines and taking cuttings of what you like. This really helped us plan exactly what we wanted for our home.

LIVING NEARBY was great, as it enabled us to visit the site often so we could make decisions then and there.

KEEP YOUR CHOICE of fixtures and fittings to a minimum to avoid being overwhelmed by the options.



The couple didn't want their house to feel cluttered with furniture, so they commissioned a local carpenter to make built-in wardrobes, cupboards and shelves



two bedrooms with a Jack and Jill bathroom connecting them. This means the storey can be occupied by guests or Simon and Alison's grown-up children if they ever need to move back home. "We thought about who might stay here apart from us, and planned the layout around that," Alison explains.

Smoothing out the details

When Simon and Alison submitted their plans to the local council, there were no issues at all with Gordon's design. The application sailed through and in September 2010 the couple had the approval to start building. By this stage, David had given them a quote of around £400,000, which included the plot, design and construction. He knew how busy the Watkinses were with their jobs – Simon worked shifts at the hospital and Alison was retraining to become a social worker, commuting to and from Edinburgh. As such, David did a huge amount of research into products and materials on the pair's behalf.

"He was excellent at listening to what we wanted and always gave us three options, so we weren't overwhelmed with a huge array of choices," says Simon. "David put together a schedule of costs and assured us that the price wouldn't change unless we altered the specification, and this all worked really well for us in the end."

However, when the Watkinses approached their mortgage provider for a loan, they didn't anticipate how difficult this part of the process would turn out to be. "We had been with the same firm since 1984, and they just turned down our application" says Simon.

An upside-down layout helps maximise the stunning rural views from the lounge area



closer look

Communal facilities...



A boiler house, about the size of a garage, sits in the middle of the development. This contains a large biomass-powered appliance to generate hot water for all nine dwellings. Each household pays for its own proportion of energy use, and Gilbert Developments is responsible for the upkeep of the unit and for topping up the fuel supply. The wood chips fed into the boiler all come from local sources – including recycled timber from David's other building projects.

"The device was installed by David's son, Neil Palmer, who owns Border Eco Systems. It's a smart unit so it sends a message automatically when it needs refuelling or something needs fixing," says Simon. "It's a very efficient setup and from our perspective it works just like a normal boiler." The couple spend £300 per quarter in winter and £100 per quarter in the warmer months, as heating isn't needed between May and October. "That includes a daily standing charge of 60p, plus £50 per annum to service the heat exchanger."

The Watkins' home also has a solar thermal panel array on its roof that provides up to 70% of the hot water they require, as well as a woodburner in the living room. Additionally, the couple decided to install a propane gas hob for security, because power cuts aren't unknown in the area. They also have an immersion heater as a standby.



Communal boiler

"We were quite shocked, but this was at a bad time for the economy and all the banks were tightening up on their lending criteria."

The couple tried other mortgage providers, and a friend of theirs recommended a small European bank based in Edinburgh. However, they wanted several years of financial statements and tax returns from the builder, which just wasn't practical. It was at that point that Simon and Alison found Ecology Building Society. "They agreed to lend us the money in six staged payments, so we could borrow based on the value of what we had on the ground at the time," says Simon. "We had to release our capital in a very controlled manner so we had enough mortgage for the next stage – the calculations were not that easy to do."

The project progresses

With the finances in place, works finally began on site in August 2011. David took on the role of project manager and Simon was on-hand a lot of the time to answer any questions about the scheme. "I visited every day because I was really interested to see what the team were doing and how the house was being constructed," says Simon. "I now know exactly where not to put a drill when I hang a picture!"

Simon and Alison were delighted with David's performance as project manager. "It was great having David because he's very well connected. We would never have known where to find the materials or trades, but he sourced nearly everything locally," says Simon.

The Watkinsons decided to keep their home's interior decor relatively simple, coming up with a restricted palette of natural materials. "We wanted the house to feel minimalist and like it was part of the landscape," says Alison. "As such, all the oak and slate floors are the same, as are the taps and sanitaryware. This made things a lot easier for David." The couple knew they wanted to increase the specification for some items, including their tiles and the hand-built kitchen, even though it would bump up the costs. Outside, they also upped the budget for the landscaping scheme by constructing a retaining wall and altering the levels of the garden.

While the build progressed rapidly within the efficiently-planned six-month timeframe, heavy snow fell that winter. Simon and Alison did not want to push David to and rush the final stages of the job, so ultimately decided to put the build on hold for three months. But come April 2012, they were able to move in.

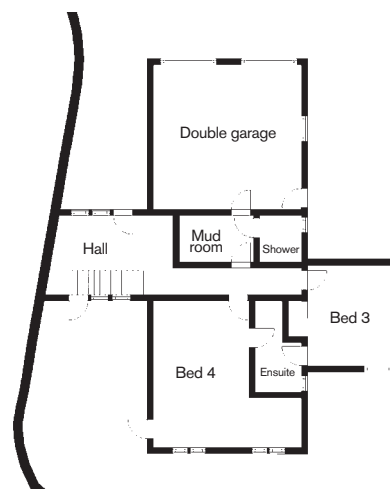
According to Simon, the extra costs were a worry until the couple received the final valuation from Ecology. "We had to hope the house was worth more than what it cost to build, plus all our extras," he explains. "We might have received a bill and not had enough money to pay for it. However, in the end the valuation of £470,000 with no garden was more than enough."

It's taken four years for Simon and Alison to turn the muddy field around their house into an attractive garden. They've worked hard to landscape the sloping plot into a driveway, lawn and a series of terraced beds, along with a vegetable plot, trees and pathways. As keen gardeners, the couple are delighted with the finishing touches. "The outdoor area is a lifelong project but what we have managed to accomplish so far has enhanced the views from the house, which are stunning in every direction," says Alison. "I absolutely love that our home is always warm, even when the heating is off. Gordon and David both did a wonderful job."

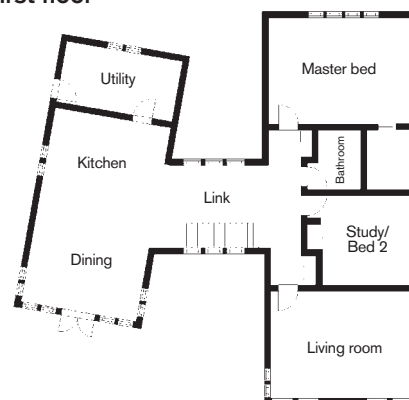


Floor plans

Ground floor



First floor



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TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Groundworks & foundations	£156	12%	£40,000
Timber frame kit, windows & doors	£488	38%	£125,000
First fix	£352	28%	£90,000
Second fix (incl. bathrooms)	£156	12%	£40,000
Kitchen	£47	4%	£12,000
Landscaping	£39	3%	£10,000
Other extras	£43	3%	£11,000
Grand total			£328,000

Useful contacts



ARCHITECT Gordon Melrose Building Design 01750 725333 www.gmbuildingdesign.co.uk **CONTRACTOR** Gilbert Developments 01835 863080 www.gilbertdevelopments.co.uk **TIMBER FRAME** Bryan Moffat Joinery 07979 595253 **HEATING** Border Eco Systems 01835 869669 www.borderecosystems.co.uk **KITCHEN** Focal Point Furniture 01573 228393 www.focalpointfurniture.co.uk

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They put their success down to the fact that they:

- Encourage their customers' involvement in all aspects of the build and are able to interpret and carry out their visions correctly.
- Understand that sometimes customers can change their minds, so are always flexible.
- Work to high standards, are respectful and approachable, and value their workforce for their hard work and are always mindful to their needs, because a happy team is a productive team.



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The Kesterbrooke story:

Graham and Andrew began their building careers in their late teens, working their way up through the ranks in the construction industry, from ground-worker to foremen. Working in all weathers and on all kinds of sites, they've gained lots of experience along the way. They gained the knowledge, they gained the skills, so it was only a matter of time before they got noticed, and noticed they were. One day they were approached by a business couple, Mike and Heather Young, who not only admired their work, but also how well they worked together. They wanted them to build a swimming pool, which was one of three future projects. Now they had the opportunity to set-up on their own, so they grabbed it with both hands and, as a result, Kesterbrooke Construction Ltd was born and has never looked back.

Building is not just a job, it's their vocation



New beginnings

Howard and Denise Horsman relished the challenge of renovating and extending their Georgian house in Devon after years of living abroad

WORDS **JANE CRITTENDEN** PHOTOS **RICHARD DOWNER**



THE HORSMAN FILE

NAMES Howard & Denise Horsman

OCCUPATIONS Retired

LOCATION Devon

TYPE OF BUILD Renovation
& extension

STYLE Georgian with
contemporary addition

CONSTRUCTION METHOD
Brick & block extension

PROPERTY SIZE 3.75 acres

LAND COST £800,000

BOUGHT 2013

HOUSE SIZE 420m² (incl.
100m² extension)

PROJECT COST £650,000

PROJECT COST PER M² £1,548

TOTAL COST £1,450,000

BUILDING WORK COMMENCED
February 2014

BUILDING WORK TOOK
15 months (main construction work)

CURRENT VALUE
£1,500,000

When Howard Horsman retired from his job overseas in the oil industry, he and Denise (his wife) had the pick of the country in choosing where to live. "We had a home in Surrey, but we weren't tied to this area or anywhere else," he says. "Primarily we wanted a large dwelling with uninterrupted views." The move was to be a new beginning for the Horsmans, who in many ways were putting down roots after years of living in a mix of rented and owned properties. Now that they had time on their hands, they were keen to find a project that they could both sink their teeth into.

As they had no limitations on where they might start this new chapter, the couple spent a year on the hunt for the perfect abode, considering houses across the country. They eventually earmarked 10 dwellings to view in Devon. "We drove down and saw this one first," says Howard. "The views across the open countryside towards Dartmoor were fantastic and the building was secluded, yet close to the town. It had masses of potential, so we put in an offer a couple of days later and it was accepted as we drove back to Surrey."

The Georgian property was built in 1842 and stands within a stunning 3.75 acres of garden and woodland. However, it was in a poor state, with single glazing, no insulation and old electrics and plumbing.





The surroundings were completely overgrown and the second floor was virtually derelict, with asbestos internal walls, no carpets and spaces open to the rafters – which delighted the Horsmans. “The rooms have large proportions, with ceilings over 3m high,” he says. “We knew we could make the house our home, but we didn’t realise quite how much ripping apart we’d have to do along the way.”

Clear vision

Howard and Denise moved into the property in March 2013 and started the design process straight away. The experience of residing in a variety of dwellings over the years helped them to pin down the changes they wanted to make. Opening up the kitchen, improving the living areas and adding ensembles to all the bedrooms were on the list, as was a wraparound terrace and a new orangery that would maximise daylight and the stunning views.

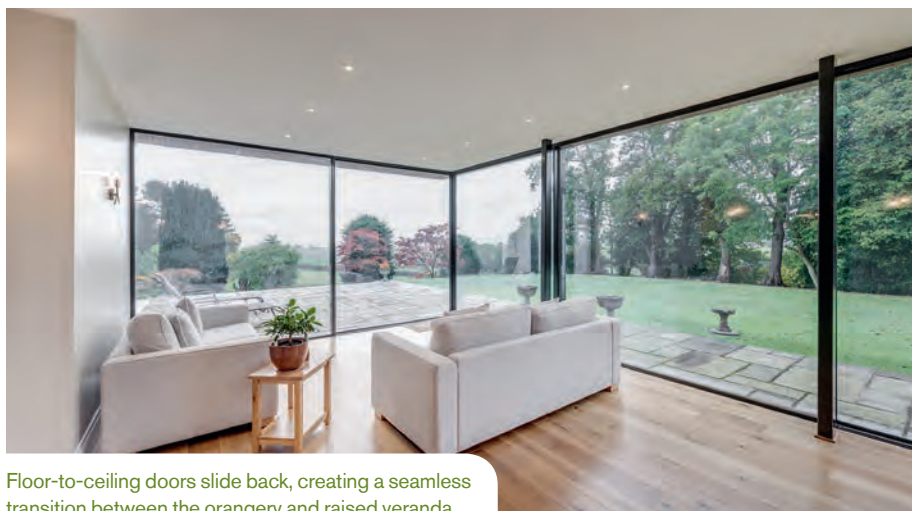
The couple sought out a local designer to draw up plans for the new extension. An online search highlighted Van Ellen + Sheryn Architects and soon the couple were chatting to the firm’s team about their plans. “The company have worked on some interesting projects and we got a good feeling about them,” says Howard. “We briefed architect David Glasscock to remodel our home and design a modern addition with natural light and a connection to outside.”



The team removed a second staircase and doubled the size of the kitchen. The cupboards are a bespoke design from Sparkworld and the slate floor is from Mandarin Stone

The Horsmans retained period features where they could, including the cornices and fireplaces





Floor-to-ceiling doors slide back, creating a seamless transition between the orangery and raised veranda



“We sometimes had 15 people working in the house and they were all friendly and extremely knowledgeable”

David came back with drawings based around a monolithic masonry extension with hints of Modernist design. Another of the firm's architects, Eilir Sheryn, suggested handmade Dutch bricks – inspired by the Victorian garden wall. The narrow red units define the structure and the scale is appropriately balanced with the Georgian house. “This was a very good idea,” says Howard. “The stock is much sleeker and thinner than British bricks and is in complete contrast to the original architecture; we’re really pleased.”

The extension has added 100m² of extra space, which stretches to the rear and side of the dwelling. Inside, the layout is cleverly divided into an orangery on one side and a separate services area for a garden room, tool storage, utility, shower room and garage.

The Horsmans weren't prescriptive with their project budget, but imagined (having done no actual number crunching) the cost might be around £500,000. So when the outline estimate came back around £850,000 (including fees), the couple were shocked. David suggested they consult with a quantity surveyor (QS) for a detailed breakdown, which Howard says was the best £1,000 he spent.

“Our QS laid out the figures in finite detail. This gave me a much better understanding of the costs and, crucially, I could see where to save money,” says Howard. “As Eilir explained, it was all down to the size of the house. For example, rooms with high ceilings need more plastering; even if we bought more affordable tiles for £30 per m² for the bathrooms, we still needed around 150m².”

Close call

The Horsmans' plans were submitted in October 2013 and by December they had planning approval. However, first they had to do a bat survey to see if the creatures were roosting in the eaves of any of the buildings. This needed to be carried out in the active season between May and September and time was not on their side. “Fortunately we found out about this in September, so we still had a small window for an ecologist to come and carry out the work,” says Howard. The results were sent to Natural England, who advised that it would be 45 days before the outcome would be known.

The time came and went, and then the company asked for more information because Greater and Lesser Horseshoe bats were discovered in the eaves of the old garage. After a long series of phone calls, Howard had a response, and agreed to build a void above the tool storage room to give the creatures continued access. “The

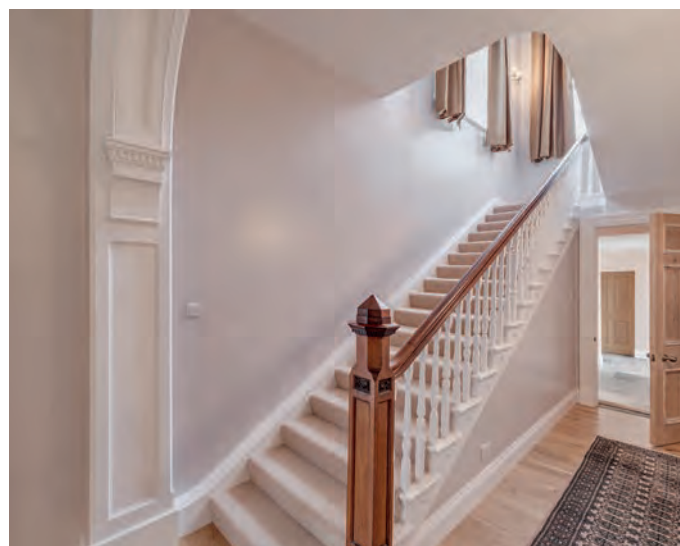
process was just bureaucracy, but it could've delayed us from starting our project,” says Howard. “We only ended up getting the decision the day before the builders started in February 2014.”

While they were waiting for the survey results, Howard used this time to start the tender process, choosing to package off the garage and services area for the initial works. “I was wary about committing our whole project to a builder without seeing how they operated first,” says Howard. “I wanted to project manage and needed to establish a good relationship with the trades, so this time provided a chance for us both to get to know each other.”

The Horsmans selected Kesterbrooke Construction and they began work in February 2014. “The company's director, Graham Hannaford came highly recommended by Eilir as they'd built his own house,” says Howard. “The firm did a good job of the garage, so we asked them to take on the renovation.”

Life on site

Howard and Denise decided to sleep away from the dust and move into a caravan pitched in the garden. They kept one room going in the property, with a TV and woodburner, and managed to carry on using the kitchen. They covered up their belongings and stored everything in three rooms, moving bits around when necessary.



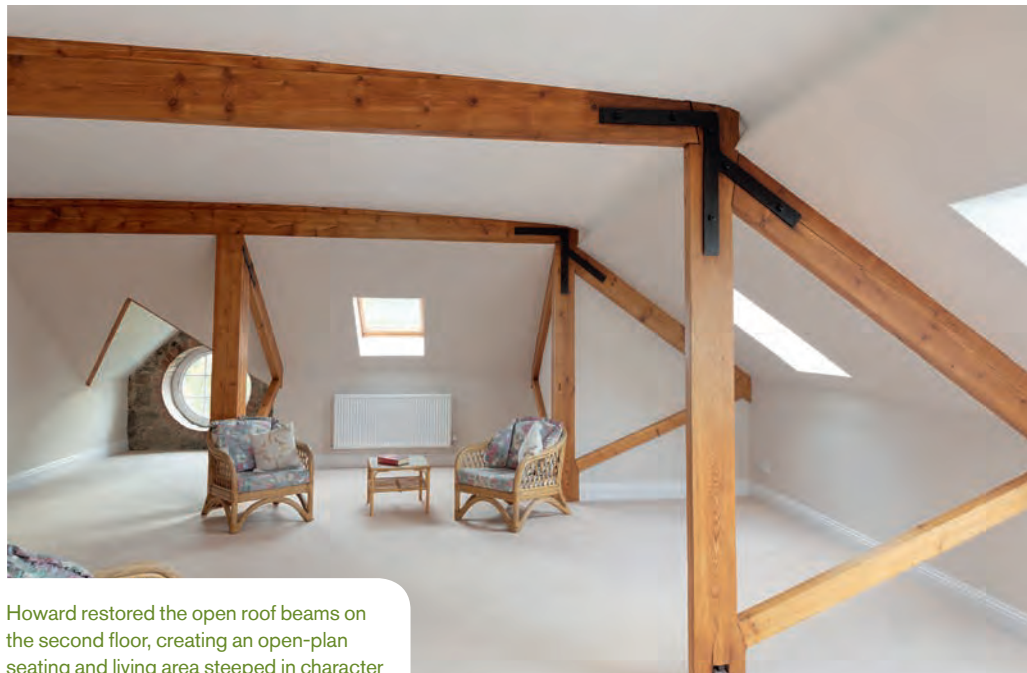
WE LEARNED...**HAVING A GOOD RELATIONSHIP**

with the builder and his contractors was a key aspect to the project's success.

SPENDING LESS MONEY ON DETAILED DRAWINGS

might have saved us some pennies in the long run; we had such skilled and knowledgeable trades and craftsmen who probably didn't need the level of information we provided.

A QUANTITY SURVEYOR priced our project and this was invaluable. The detail helps you understand the costs and allows you to see where you can save.



Howard restored the open roof beams on the second floor, creating an open-plan seating and living area steeped in character



The team got on with building the extension and gutting the house, disposing of asbestos stud walls on the second floor and reconfiguring the layout into a lounge, two bedrooms, an ensuite and separate shower zone. "This storey acts like an annexe and could be self-contained if required," says Howard.

The first two floors were remodelled and new electrics, plumbing and double-glazed sash windows added. The floorboards were raised to be draught-proofed and insulated. Internal and external insulation were considered, but this was ruled out. "The walls are 600mm-thick solid stone, so we decided the new roof and underfloor insulation would offer enough thermal protection," he says. "Outside, we used a special render on top of a fibreglass mesh, which didn't need painting. It cost more, but doesn't need maintenance."

Howard was determined to save money where he could and found the QS breakdown invaluable to see where he could strip out costs. Remarkably, he managed to reduce the budget down to £650,000 by avoiding dipping into the generous contingency and negotiating discounts when he bought in bulk – particularly for the seven bathroom suites. He also sourced a range of good quality materials below the figures allocated in the budget. "We purchased directly from suppliers where we could and Denise and I took on

the labouring for the build, which saved a lot over the 15 months," adds Howard. "We also decorated the entire house ourselves to save some more money, which took a year; I almost lost count of how many litres of paint I bought."

Great experience

The project progressed with few problems, but took longer than the Horsmans expected. They thought the property would be finished by Christmas 2014; however, the builders didn't leave until the following Easter. "This was largely down to the sheer size of the building" says Howard. "We didn't expect 90% of the walls to need re-plastering, for instance. Graham offered to bring in more labour, but we declined because we had a close-knit team and weren't under pressure to finish by a certain date."

Once the builders had gone, Howard and Denise took on the gargantuan task of decorating and in summer 2016 their new home was complete. They are thoroughly satisfied with the results and found the venture a hugely enjoyable experience. "We sometimes had 15 people working in the house and they were all friendly and extremely knowledgeable," says Howard. "We had a good relationship with them all; they became like family. The project was a complete contrast to what I used to do as a job and it kept us fit and healthy – we'd love to repeat the experience again one day."

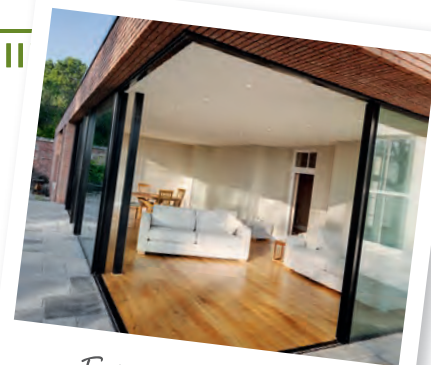


The bedrooms have been re-located to the four corners of the first floor with ensembles for each positioned in the middle of the floorplan

closer look

Sliding doors...

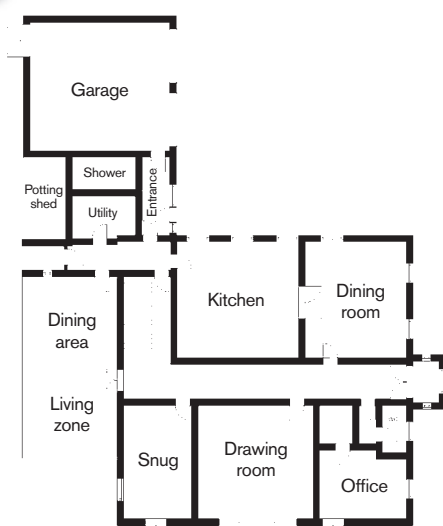
A key goal for the extension was to enable views out across the surrounding landscape, so the use of expansive glazing was crucial to the design's success. The couple chose to include wide sliding doors that open back from the corner to fully expose the edge of the room to the outside. While bifolds are a popular addition to many extension projects, sliders with large glazing spans offer more of an uninterrupted view from inside when shut. They also provide more flexibility when it comes to how wide you want them to be open at any given point.



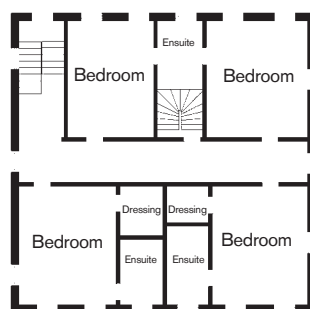
Exposed corner



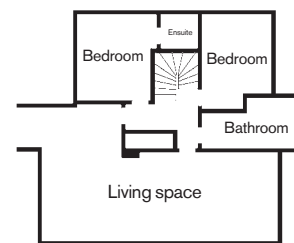
Floor plans



Ground floor



First floor



Second floor



House plans re-created using
Build It 3D Home Designer software.
www.buildit.co.uk/3dsoftware



TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Fees	£131	8%	£55,000
Main contractor package (incl. demolition, construction & materials)	£1,107	72%	£465,000
Glazing	£143	9%	£60,000
Electrics	£60	4%	£25,000
Plumbing & heating	£107	7%	£45,000
Grand total			£650,000

Useful contacts



ARCHITECTS Van Ellen + Sheryn Architects 01364 653503 www.vanellensheryn.com
BUILDING CONTRACTOR Kesterbrooke Construction 01364 643562 www.kesterbrookconstruction.co.uk
WINDOWS Heritage Windows 07581055868
EXTERNAL RENDER Chris Frediani 07788180250
ELECTRICS MG Electrical 07794258167
PLUMBING Mike Ruth Plumbing 07971681612
CARPENTER Steve Lentern 07813320114
KITCHEN Sparkworld 01626 834666 www.sparkworld.co.uk
BATHROOMS Bathstore 0330 053 5661 www.bathstore.com
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MODERNIST MASTERPIECE

Gordon and Aileen Spink decided to take on their second self build adventure after their children left home, creating an impressive light-filled home on a tight budget

WORDS **ALISON GIBB** PHOTOS **DOUGLAS GIBB**

It was 12 years ago that Gordon and Aileen Spink paired up with their good friends the Voigts to invest in a large plot. Home to several derelict buildings, the land was ripe for development. Together they gained permission to create six new dwellings; but the added boon of this venture was that Heinz Voigt is an architectural designer and his son, Jon, is a builder.

Utilising their friends' skills, the Spinks self built a new home for themselves straight away. Over time, the Voigts built four other houses – one for Heinz and his wife, one for Jon, another for their other child and one more, which they decided to sell. Having thoroughly enjoyed their first project, years later – after Gordon and Aileen's children had grown up and left home – the Spinks

THE SPINK FILE**NAMES** Gordon & Aileen Spink**OCCUPATIONS** Fish wholesalers & restaurateurs**LOCATION** Arbroath**TYPE OF BUILD** Self build**STYLE** Contemporary**CONSTRUCTION METHOD** Timber frame**PLOT SIZE** 528m²**HOUSE SIZE** 234m²**PROJECT COST** £210,000**PROJECT COST PER M²** £897**BUILDING WORK COMMENCED** January 2013**BUILDING WORK TOOK** 21 months**CURRENT VALUE** £450,000

The island unit is edged by a wooden breakfast bar, adding a restful spot in the open-plan zone, along with offering views out through the bifold doors



decided to build the final allocated house on the large plot, once again employing Heinz as the architect and Jon as the builder.

Vision & inspiration

Each of the properties positioned within this spacious hamlet was developed as a response to the local landscape and architectural vernacular. A key ambition with each design has been to utilise natural light – something that this patch of land seems to have in abundance. Each dwelling has a modern, yet individual, style, hinting at the agricultural heritage without being overly rustic, and Gordon and Aileen's vision for their new home was no different.

"We took inspiration from Scandinavian design as we love the simplicity, the use of natural materials and the subdued colour palette," says Aileen. Their new home was to be spread across two

"We've kept the look modern and minimal, using texture for interest rather than colour"

storeys, with a long, sloping catslide roof and an overhang to shelter a balcony area on the first floor. Lots of glass, both inside and out, would allow ample daylight to flow throughout the property; and plenty of outside patio space would provide the Spinks with large external zones to enjoy the sunshine. Following the angled roof



A small pitched roof allows for a covered entrance that visually repeats the larger roof mass of the main house





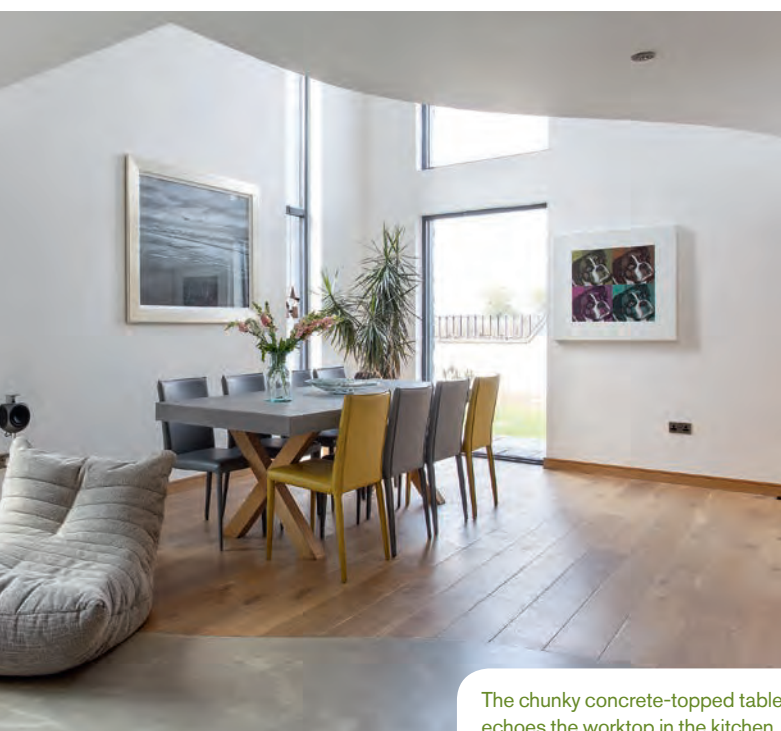
down one side was to be a large glazed veranda, which has become a key feature of the property. Leading off from the kitchen through bifold doors, this encourages the indoor-outdoor living style the couple were after (see closer look on page 48).

As so much time had passed since they originally gained planning permission, Gordon and Aileen needed to resubmit an application to their local authority. Thankfully, there were no objections and just three months later they were all set to go.

Smooth sailing

The Spinks took on the project management themselves and used trades they knew from their first project. "We saved a lot of money by paying each trade individually, rather than going through a main contractor," says Gordon. "Plus, as he's a good friend and neighbour,

The sitting room is overlooked by a mezzanine hallway, which features glass balustrades to continue the sense of volume



The chunky concrete-topped table echoes the worktop in the kitchen

WE LEARNED...**MAXIMISING NATURAL LIGHT**

was a really important design aim for us. We sought inspiration from other self builds, which proved to be really useful.

BUILDING A BIG HOUSE

wasn't really necessary because there is only two of us, but the feeling of space we've achieved is great – plus our grandchildren love being able to run around when they visit. We designed it with our extended family in mind.

WORKING WITH A TEAM

we trusted was great. We'd employed our architect and builder on our first project, so we knew they'd deliver something we love.

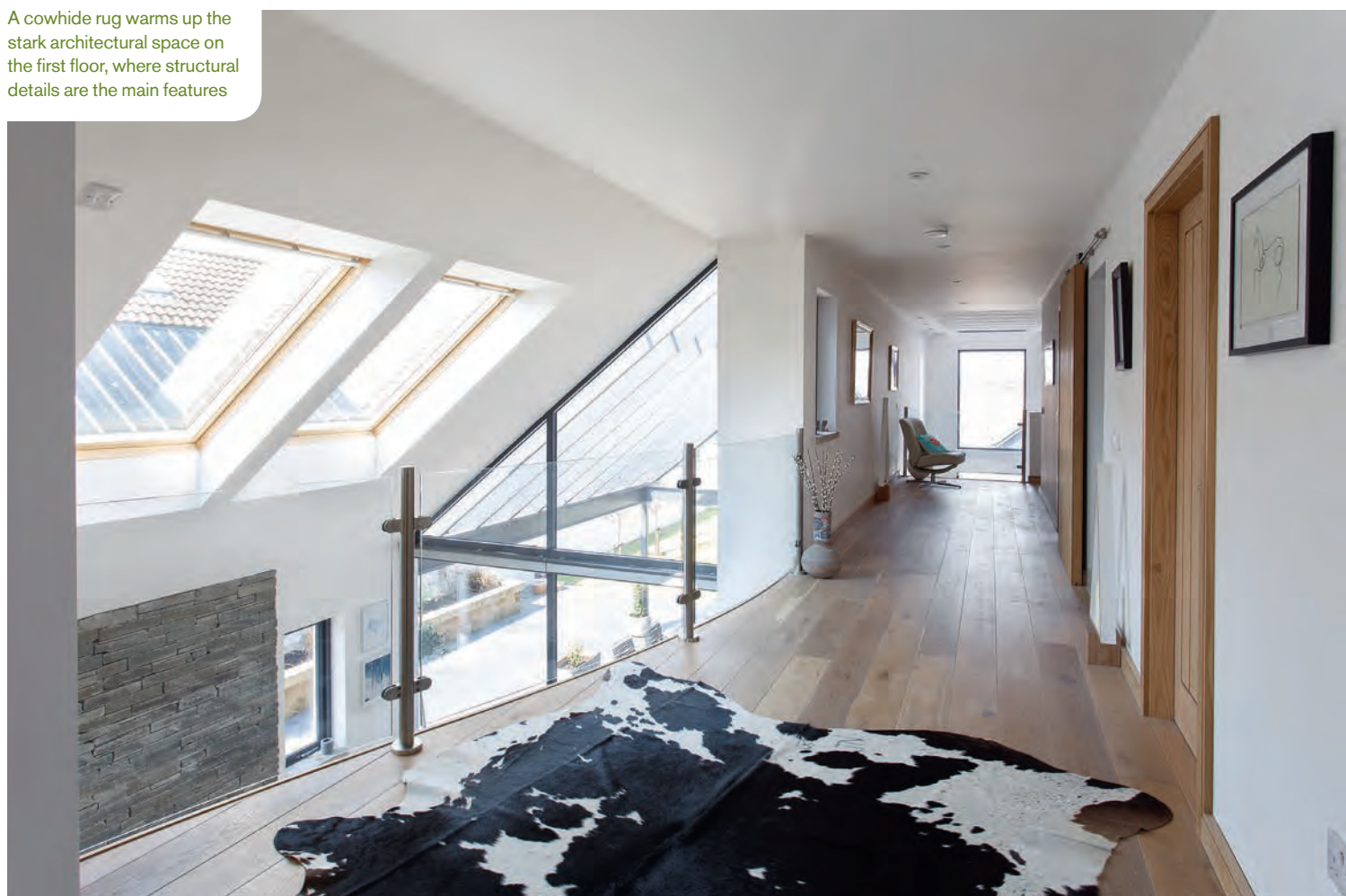
Heinz didn't charge us his full professional rate, which also helped to keep costs down."

The space allocated for this new dwelling was fairly narrow, so while the Spinks were happy to downsize to a property that sat snugly between two other houses, the limited access available became the main challenge as work progressed on site.

Materials and equipment needed to be delivered carefully through a narrow track without damaging the boundary walls or adjacent properties. The team took great care in navigating the tight access,

briefing the trades and ensuring everyone was aware of the risks. Thankfully, as a result of having a good contractor on their side, no harm was done and there were no unnecessary complications.

A cowhide rug warms up the stark architectural space on the first floor, where structural details are the main features



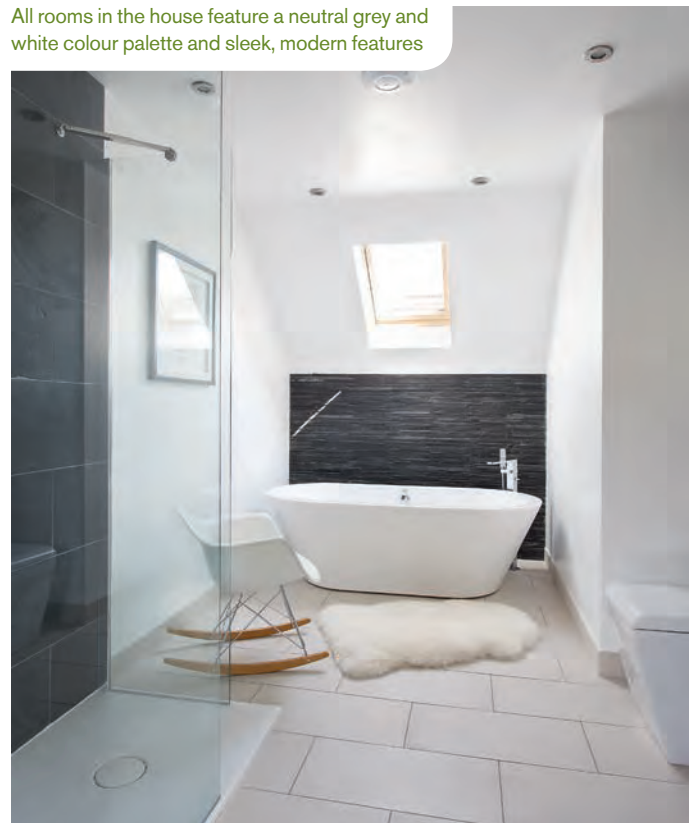
Materials palette

Taking a fabric first approach, structural products were chosen specifically for their energy efficiency. A timber frame was craned in, packed with high-spec insulation, finished with blockwork and encapsulated in a smooth cement render. Natural cladding materials were specified to link the building with its rural surroundings. The external walls towards the front of the house were clad in stone from a local quarry, complemented by sections of vertical grey weatherboarding and large strips of glazing. Around the back, a white render finish adorns the exterior, with the cladding appearing once more on the overhanging section above the balcony.

Even though their first self build property was also contemporary in style, Gordon and Aileen were keen to create a different vibe in their new home. "Before, we used chunky natural wood finishes, taking more of a country chic approach," says Aileen. "In our new house we've updated our style by adopting a pared down look with a monochrome scheme." The external palette flows through to the inside, where a dry stone wall becomes a focal feature in the sitting room, stretching up to meet the vaulted ceiling above.

Grey hues feature heavily, from the stone cladding and painted windows outside through to furniture and surfaces inside. "We've kept the look modern and minimal, using texture for interest rather than colour," she adds. An open-plan layout allows light to permeate the whole building. "We have long winters up here in Scotland, so we were keen to make sure of all the sunlight we possible could," says Aileen. Tall ceilings, a light colour palette and glazed balustrades add

All rooms in the house feature a neutral grey and white colour palette and sleek, modern features



to the airy feel of the interior. "We wanted the house to be modern and spacious," says Aileen. "I didn't really have a plan or a specific design when I bought things for the inside. I just followed my instincts and purchased bits I liked when I saw them; we found items on holiday, locally and online – somehow it works!"

Ideal result

Not only is there an inside-outside feel to the house, but the room layout doesn't follow a traditional pattern. Downstairs features an

open-plan kitchen-dining zone, family room and two bedrooms. Two further bedrooms, a family bathroom and another living area are upstairs, all making use of the surrounding scenery.

Rather remarkably for a self build project, there were no unforeseen pitfalls or unexpected costs, which meant the Spinks stayed in their original budget plan. Best of all, the result ticks all the boxes for Gordon and Aileen – modern and light, with enough space to host their children and grandchildren, while also feeling homely, cosy and small enough for two people to enjoy comfortably.

closer look

Light-filled veranda...

The Spinks' courtyard boasts a Mediterranean ambience, promoting an inside-outside living style. "The climate around here is often sunny, but windy, so shelter is really important," says Aileen. Patios surround the building to make the most of time spent in the garden, but a long stretch of glass covered veranda offers sanctuary from harsh weather. The zone is accessible from the kitchen through bifold doors, which can be fully opened to combine the spaces. The glazed ceiling warms up in the sunshine and creates a cosy retreat; the couple love to utilise this sociable space when entertaining and hosting al fresco lunches.

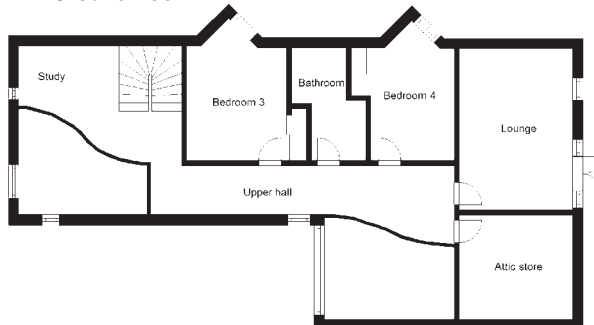


Outdoor dining space

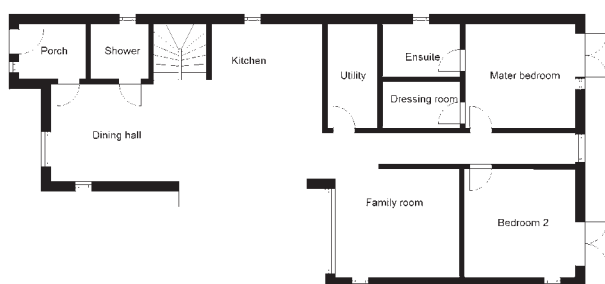


Floor plans

Ground floor



First floor



House plans re-created using
Build It 3D Home Designer software.
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TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Foundations	£85	10%	£20,000
External walls & windows	£363	40%	£85,000
Roof structure & covering Plumbing, heating & electrics	£193	21%	£45,000
(incl. bathroom & kitchen)	£171	19%	£40,000
Floor, wall & ceiling finishes	£85	10%	£20,000
Grand total			£210,000

Useful contacts



ARCHITECT The Voigt Partnership 01241 879662 www.voigt-partnership.co.uk **TIMBER FRAME** Forfar Roof Truss 01307 468030 www.frttruss.co.uk **BUILDING WORK, DRAINAGE & STONEWORK** J&G Builders 07496 679454 www.j-gbuilders.co.uk **STRUCTURAL ENGINEERS** McKinney Nicolson Associates 01382 770703 www.mckinneynicolson.co.uk **DOORS, WINDOWS & STAIRS** Seaton Joinery 01241 875265 www.seatonjoinery.co.uk **GUTTERING & ROOFING** Sean McIntosh 01241 430939 **ELECTRICIAN** Graham Cowan 01241 437823 **HEATING & PLUMBING** WH Dorward 01241 873735 www.whdorward.com **KITCHEN UNITS** Murray & Murray 01592 774363 www.murrayandmurray.co.uk **BATHROOM FITTINGS** Porcelanosa 01923 815200 www.porcelanosa.co.uk **FLOORING** Russwood 01540 673648 www.russwood.co.uk **INTERIORS** Decor At Home 01241 463573 www.athome-interiordesign.co.uk **French Connection Home** 0333 400 3285 www.frenchconnection.com **Gillies** 01382 477281 www.gillies.co.uk **John Lewis** 0345 604 9049 www.johnlewis.com **Living Space** 020 7731 1180 www.livingspaceuk.com **Taranis** 0141 339 9230 www.taranis.co.uk **The White Company** 0203 758 9222 www.thewhitecompany.com

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Double-up



The **Bradstocks** transformed their bungalow into a family home on the smallest of budgets, thanks to Adam's relentless work ethic and Karla's endless patience

WORDS **JANE CRITTENDEN**
PHOTOS **JAMES FRENCH**



THE BRADSTOCK FILE

NAMES Adam & Karla Bradstock
OCCUPATIONS Builder and landscape designer & client relationship manager
LOCATION Felbridge, Surrey
TYPE OF BUILD Renovation & extension
STYLE Arts & Crafts
CONSTRUCTION METHOD Timber frame
PROPERTY COST £375,000
HOUSE SIZE 211m² (original bungalow 97m²)
PROJECT COST £200,000
PROJECT COST PER M² £948
BUILDING WORK COMMENCED January 2011
BUILDING WORK TOOK Five years
CURRENT VALUE £800,000

Adam and Karla Bradstock bought their detached bungalow in May 2010 after a long search. They were after more space and a bigger garden, so it's no wonder that the third of an acre this property offered was too hard to resist. "Adam disappeared into the back garden before the estate agent had even arrived," says Karla recalls. "He returned with a grin on his face, so I knew we'd be putting an offer in."

The dwelling was more expensive than their initial £300,000 budget, plus it needed a lot of work doing to it. However, this didn't put the couple off as Adam already had big plans up his sleeve. "Although it looked pretty ugly, it was built from a good masonry shell; I simply thought it made sense to turn it into a house," says Adam. "We had no idea if we'd get planning as, although there's no street scene to maintain, the property is flanked by bungalows."

Complete reworking

Adam (who runs a construction and landscaping company) has a degree in garden design and prepares drawings for clients, which rather handily meant the couple didn't need to

employ an architect for the project. The Bradstocks drew on their fondness for the solid craftsmanship and architecture of the Arts & Crafts period to come up with a plan. They also turned to local National Trust property, Standen (a place they often visit) for inspiration. "We took elements we liked from this celebrated 1890s house and brought these ideas loosely into our own home," says Adam. "Although not the classic steep roof pitch associated with the

look, our apex and finial reflect the period. The oak staircase has the wide spindles that echo those within Standen but our design is simplified compared to the true Arts & Crafts style.'



Before

WE LEARNED...**CONFIRM ANY IMPORTANT DECISIONS IN WRITING.**

We only had a phone conversation about the warm roof insulation calculations for our project, which meant we had no comeback when things went wrong later on.

COSTS CAN EASILY MOUNT UP,

especially those for sundries. We ended up spending over £1,000 on screws, nails and bolts without really realising.

TAKING OUR TIME

to slowly piece together the rest of the works once the structure was airtight meant that we could save money to pay for it as we went along.

The kitchen layout was planned around the original Aga, as the couple couldn't afford to relocate the chimney breast



“We had a love-hate relationship with the project for a long time, but we're really pleased with the outcome”



Open beams in the extension's vaulted ceiling add character and could be adapted later on if the Bradstocks decide to build a bedroom above

As well as adding another storey, the couple decided to remodel the downstairs, removing all the internal walls (except for the loadbearing ones) to make way for a porch, cloakroom, office, playroom and fourth bedroom to join the original kitchen and living area. Small extensions to both these zones replace a lean-to and conservatory, increasing the original footprint by 10m².

The focal point of the revamp was to be the new double-height entrance hall and galleried landing, which would bring added wow factor to the house. “The hallway was always going to be the centrepiece,” says Karla. “I wanted a space big enough to put a huge Christmas tree in – which we did for the first time last year. Having the luxury of that area meant we could only have three bedrooms upstairs but the layout is just right for our family.”

Adam presented his detailed drawings to pre-planning, along with pictures of Standen. The council mostly liked the design, except for the proposed balcony in the bedroom, which they wanted removed to protect the neighbours' privacy. By Christmas 2010 the couple had full planning approval to proceed with the works.

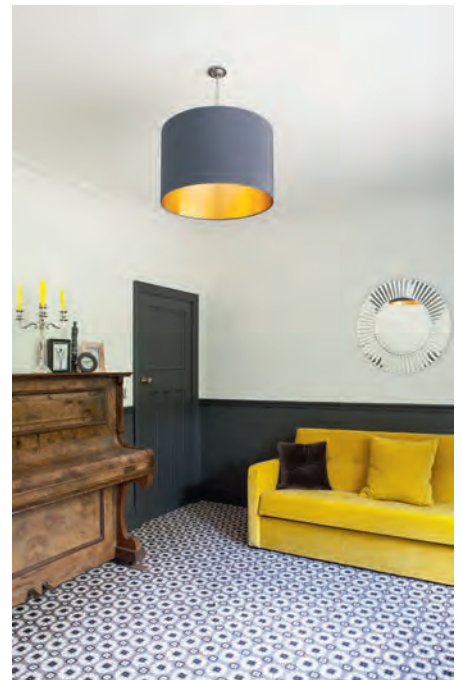
Hands-on approach

Adam and Karla Bradstock got stuck into their ambitious bungalow-to-house project with a budget that was more fitting to an extension. They also had a limited timeframe to complete the structural work and two children (Freya, then three, and Florrie, just a baby) to consider throughout the process. “I took three months off work to make the property liveable for the girls on an initial budget of £50,000,” says Adam. “The timings were tight, but our neighbours' had kindly agreed that we could live in their home while they were away for a few months in exchange for landscaping their garden. It saved us a lot of money but it was still quite stressful.”

Adam spent evenings and weekends getting the bungalow ready before he officially took time off from work. He demolished the lean-to and conservatory, built the foundations for the two small extensions and porch, and prepared the building to first floor height



Adam raised the ceilings on the ground floor to a height of 2.7m



ready for the second storey timber frame. May soon rolled around and the family moved out across the road. "We stored some things in Adam's workshop and shifted the rest over in a wheelbarrow."

The first stage of the project began with Adam's vast construction experience allowing him to do nearly all of the work himself. Family and friends also helped – Adam's father is a builder, his brother is a carpenter and his brother-in-law is an electrician. His goal was to complete all structural work to a watertight state for a liveable home in three months – including finishing a bathroom, some kind of kitchen and both girls' bedrooms. The timescale was gruelling, but necessary if they were going to stay on track financially.

Phase one

Things got off to a shaky start after Adam drilled holes around one of the loadbearing walls to check the condition of the foundations. Unfortunately, he discovered that they were insufficient, so the walls would need underpinning (more about this task on page 55).

Then another problem arose to further threaten the tight build schedule. The Bradstocks had ordered aluminium window frames with a green finish on the outside and ivory inside. But a week or so before they were due, the firm advised that having ivory would delay delivery by several weeks – precious time the couple didn't have. "It still niggles that we didn't get the windows we wanted," says Karla. "The quality on some of the ones we fitted isn't great, so we've had to replace those that had condensation problems."

As the weeks crept closer to the three-month end date, Adam soldiered on. He worked 14 hours a day, seven days a week, taking on the final push to tile the roof in just two weeks. "This part of the project was relentless," says Adam. "I lost a lot of weight because of the sheer physicality of the work, but I finished everything I planned to in time – even getting the lights on the day we moved in."

Typically, this would signal the end of a project for most self builders, but for the Bradstocks it was simply the end of phase one. In August the family trundled their belongings back home, moving into a house with bare brick walls and ceilings open to the rafters – as well as no more money. The couple had spent more than they expected, taking out a £25,000 loan to finish these works; so they had no choice but to sit tight and save up before they carried on. They rolled out some of the old carpets and laid them in the new rooms, with the upbeat attitude to simply make the best of it.



The oak staircase was stained a dark brown for an Arts & Crafts feel, while the flooring in the hallway is industrial parquet finger blocks. The stair runner is from Ocean Flooring



The master bedroom's Juliet balcony was crafted by blacksmith, Eric Lamprell

Slow progress

For the next few years Adam gradually worked his way around the house, tackling the kitchen in 2012, the living room in 2013 and the master bedroom in 2014. During this time, a problem with the multi-layer foil roof insulation caused a disheartening setback.

Adam found the product after looking for an alternative to the time-consuming process of cutting rigid insulation board. The membrane was BBA-approved and easy to roll out and staple to the rafters. "The firm carried out a moisture risk analysis for a warm roof system, so I was confident this alternative would be fine," says Adam. "But condensation collected behind the membrane and this had to be resolved before damage set into the rafters." The company gave Adam no direction, so after seeking advice from building control he fitted ventilation into the roof. Access was through Florrie and Freya's bedroom ceilings, meaning Adam went through the painful process of plastering and decorating them for a second time – and had to take another precious three weeks off work to complete the job.

Karla increased her weekly work hours by a day in 2015 so they could take on an additional £60,000 mortgage to pay for the office, cloakroom and hallway, pushing them through to the end of the works. "The new entrance hall has brought the whole house together; when visitors say they love the space, I think, yes, I love it too," says Karla. "The aim was to be finished by our 40th birthdays and have a party, which we did – although our ensuite still needs to be done."

Nearly there

The entire project has been a remarkable achievement for Adam and Karla, whose girls are now 10 and seven. Adam's

architectural planning and design detail prevails throughout, with newly crafted panelled door openings, skirting and plaster cornices giving the property a genuine period feel despite its 1950s roots.

There's still work to be done in the garden that will come in time, but for now the family are simply enjoying living in their house. "We had a love-hate relationship with the project for a long time, but we're really pleased with the outcome," says Karla. "Adam has been amazing throughout and although his time is hard to quantify, we think our scheme might have cost double what we've ended up paying if he hadn't done the work himself."



The new roof is much steeper than the original, allowing enough head height for an upper storey

closer look

Underpinning walls...

The Bradstocks didn't account for the cost of underpinning the loadbearing walls in their budget because they didn't discover the need to do this before work got underway. "I hadn't been prepared to make big holes in the floors of the bungalow until Karla and the children were safely out of the way," says Adam. "We had to decide whether to lose time or money." He estimated that the traditional method (digging out the earth beneath the wall one section at a time) would take him three weeks – time he simply didn't have. So he looked for a speedier solution and found Uretek (www.uretek.co.uk). "The company's team pumped in a resin material, a bit like expanding foam, around the base of the walls," he says. "The resin permeates the soil structure and hardens into a solid raft, so you need granular soil conditions rather than clay for the product to work." The decision came at a cost of £5,000, but the job was completed in just two days.

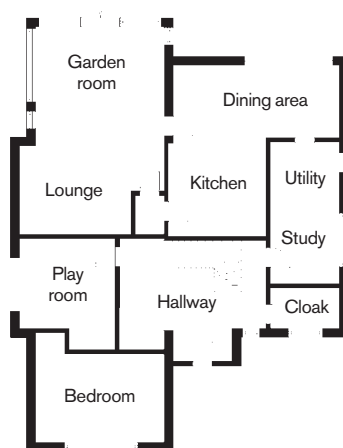


Firm foundations

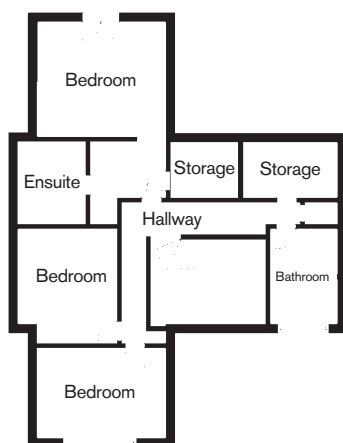


Floor plans

Ground floor



First floor



House plans re-created using
Build It 3D Home Designer software.
www.buildit.co.uk/3dsoftware



TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Fees	£19	2%	£3,900
Extension	£98	10%	£20,600
Timber frame	£102	11%	£21,600
Walls & windows	£84	9%	£17,800
Roof structure & covering	£102	11%	£21,500
Internal walls	£40	4%	£8,400
Floor, wall & ceiling finishes	£51	5%	£10,800
Joinery & fittings	£175	19%	£36,900
Plumbing & heating	£38	4%	£8,000
Kitchen & bathrooms	£180	19%	£38,000
Electrics	£20	2%	£4,100
Decorating	£28	3%	£6,000
External works	£11	1%	£2,400
Grand total			£200,000

Useful contacts



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62



72



68



65



58

58 **BUILDING A HEALTHY HOME**

Chris Bates reveals how you can plan a living environment that promotes wellbeing and comfort through its design

62 **DESIGN DETAILS: BRICKWORK PATTERNS**

Emily Smith looks at how getting creative with your home's facade can add kerb appeal and visual interest

65 **CHOOSING TRADITIONAL ROOF TILES**

Whether you're starting afresh or renovating, it's vital that you specify the right product for your heritage-style project

68 **HOW TO UPGRADE YOUR HOME'S INSULATION**

Nigel Griffiths uncovers how a whole-house approach to upping thermal efficiency can help you avoid the risks

72 **DESIGNING AN ICF HOME**

Discover how building with insulating concrete formwork can offer more than just fast build times and energy savings

Building a healthy home

Chris Bates looks at the ins and outs of how to create a comfortable dwelling that has a positive impact on your wellbeing

Fancy the idea of living a comfortable home that's bright, warm, draught-free, intrinsically soundproof, free from toxins and totally tailored to your family's requirements? If that seems like a bit of a leading question, you might be surprised to find that very few of us actually do. For many years, there's been a big drive towards energy efficiency – but far less focus on ensuring our houses actually have a beneficial effect on our wellbeing.

What is a healthy home?

The idea goes a step beyond conventional sustainable living. Yes, get it right and you'll have an airtight, highly insulated house that costs very little to run. But the real goal is to create a building that supports its occupants' health and lifestyle; which isn't a bad idea, considering most of us spend upwards of 80% of our time indoors (either at home or in the office).

In some ways, the rush to reduce bills and lower our carbon footprints over the past 20 years has been detrimental to achieving a healthy living environment. "When you build a more airtight house, you have to be careful that you don't end up with an internal atmosphere that's little more than a plastic bag," says Barbara Fischer-Clarke from Stommel Haus. In a sealed dwelling like this, any ventilation issues could increase inhabitants' exposure to off-gassing toxins from materials such as oil-based paints, or even threaten the condition of the building by precipitating condensation and mould growth.

A healthy home strategy needs to pull together every aspect of design, specification and construction, so you need to ensure you engage the right people. A number of architects and building firms specialise in this area, but it's still a niche sector in the UK and – as with any high-spec standard – you can expect to pay more for your project overall.

Air quality: the basics

Indoor air quality is governed to a large extent by the materials and finishes that go into a building, as well as the activities of its occupants (cooking etc). In a healthy home, the idea is to minimise or eliminate the presence of toxins in the internal



atmosphere through a combination of good ventilation (more on this later) and well-informed product selection.

The effects of poor air quality have been linked with anything from sick building syndrome (which manifests in symptoms such as dry or itchy skin and headaches) through to more severe illnesses. "A report by the Royal College of Physicians and the Royal College of Paediatrics and Child Health suggests that those susceptible to indoor air pollutants are at risk of major health conditions, such as cancer, heart disease and respiratory related illnesses," says John Kelly from Airflow Developments. Over five million people in the



UK are thought to suffer from asthma, for example, and this can be triggered by poor internal environments.

With modern construction, some of the key culprits are goods containing VOCs (volatile organic compounds) such as formaldehyde, which can off-gas low levels of toxins over the long term. VOCs are present in many conventional paints and adhesives, in addition to a range of common building materials such as treated timber, OSB (oriented strandboard), MDF (medium density fibreboard) and plasterboard.

Other common air quality issues include condensation and mould. Self builders can expect these problems to be designed out of their homes to ensure they meet the Building

Top right: A number of studies have shown the positive influence on wellbeing of living and working environments decked out with natural timber – as is the case in this calming Stommel Haus project

Regulations, but they can be more difficult to address in existing houses. In addition, the presence of allergens could be a consideration for both new and older properties.

The main routes to mitigating air quality issues as part of a healthy home are to select robust yet chemical-free structural materials and finishes, as far as is practicable, and to ensure adequate background and purge ventilation where needed.

Materials selection

In the UK, we've learnt to build using products that have been altered to make them, ostensibly, more durable. One key example is timber, which for construction purposes is usually pressure-impregnated with preservative; or painted or stained when used for finishes. The natural consequence of this is that many materials contain chemicals that could off-gas toxins into the internal climate. But there are alternatives.

"It's all about the way you build and the kind of materials you use," says Barbara. "You can create long-lasting wood houses without using treated products – just as they did in Germany, Switzerland and the UK back in the 13th century. Our ethic is to not use any toxic materials in the home at all, and that includes the likes of adhesive-laden OSB panels."

Stommel has been doing this since the 1970s, using diffusion-open construction that encourages breathability whilst maintaining good airtightness – and its building methodology has full type approval for use in the UK. Another German system builder, Baufriz, takes a similar approach to the fabric of its homes, while individual product manufacturers are following suit. Back in 2008, Knauf launched a mineral wool insulation with Ecosse technology, where the normal formaldehyde binder was replaced with a natural alternative. This has since been rolled out across the company's entire Earthwool range, which suits both new builds and retrofits.

Some might argue that the fabric of the building is relatively 'locked up' by internal linings such in terms of being able to

in place to remove harmful contaminants," says John Kelly from Airflow Developments. "Mechanical solutions are ideal for residential properties. Centrally-mounted units can be ducted around the home to each wet zone – extracting moist air to prevent damp and mould from developing."

The next step up is mechanical ventilation with heat recovery (MVHR), which not only deals with stale air but extracts the latent warmth within it (when required) and



The use of natural, untreated timbers and eco-friendly rockwool insulation helps deliver Stommel Haus's diffusion-open yet airtight walls (above left); while Baufriz uses compressed wood shavings (above right) to achieve similar results

pushes that energy into a fresh, filtered incoming supply. "By specifying a high-quality filter, an MVHR unit can prevent pollutants as small as pollen from entering the property – so it's ideal for those with allergies," says John. These appliances typically offer smart controls and boost functions, so there's no need for additional extractor fans in bathrooms. But they must be used and maintained correctly – if you don't change the filters regularly, air quality will deteriorate.

The necessity of using mechanical extract systems or MVHR is hotly contested in some circles, however. "We leave all our materials diffusion-open," says Barbara. "This allows us to build airtight homes with breathable walls." That may sound like a contradiction, but simply put there are no gaps through which valuable warm air can escape – yet the construction will absorb and release moisture naturally without harming the structural fabric. "We don't use membranes, so there's no risk of condensation – which also means that we don't need to fit mechanical ventilation systems with piping throughout the house that could potentially collect dirt," says Barbara. "Timber can take on up to 30L of moisture per m³, and will release it back into the house if the internal climate becomes dry – so you get perfect humidity levels."

Of course, you still need purge ventilation in windowless bathrooms, utilities and the like via an extractor fan. But that's pretty much it; in Germany, Stommel even builds without trickle vents in windows. "We only do that to satisfy the UK building regs," says Barbara. "But in general we don't need it. We've created a more natural way of living that doesn't rely on pumping in air from outside and whirling it around a property."

Comfort levels

Well-insulated, airtight new homes should be relatively easy to keep at a constant, comfortable temperature – provided they're built to the design spec. The task is more difficult in existing houses (see page 68 for Nigel Griffiths' advice on how to insulate an older property), but fundamentally your aim should be to make the external walls warmer and cut draughts – which are one of the main causes of discomfort – without compromising the building's fabric.

Far left and left: Skyhouse Sussex by Baufriz is a recently completed zero carbon guest house on the edge of the South Downs with an emphasis on a healthy living environment. It combines natural materials with renewable technologies such as solar electric panels and an MVHR system



off-gas to living spaces. But whether you're convinced or not, it still makes sense to look carefully at what you specify for the interior finishes. Both Fermacell and British Gypsum produce special plasterboards that absorb and neutralise harmful compounds, for example, while a huge number of paint manufacturers offer low-VOC coatings. As a rule, plant-based, water-borne eco paints are the top performers.

Ventilation

This is a critical aspect of maintaining a healthy living space – but there's debate about exactly how it should be achieved. "The consequences can be severe if effective ventilation isn't

QUICK GUIDE: KEY ELEMENTS OF A HEALTHY HOME

The Building Biology Association publishes 25 guiding principles on its website that make an excellent checklist for establishing a new healthy home. This abbreviated version is a good starting point:

The site Avoid plots with poor ground conditions, minimise risks from contaminants and ensure there's sufficient green space.

Building materials Use natural, low-toxin materials and minimise noise.

Indoor climate Regulate humidity, optimise temperatures and promote good air quality throughout the dwelling.

Ecology Minimise energy usage, prioritise local materials and ensure access to best quality drinking water.

Interior design Room sizes should be proportional and lighting natural.

Noise transfer

I know from bitter experience that UK Building Regulations haven't been too hot on soundproofing performance (a

London flat I once lived in was part of a modern block where the developers had hit on the idea of selling ceiling speakers). Suffice to say it can really affect your enjoyment of your home.

The current standards are better, but they don't fully address the question of internal noise transfer – ie between rooms or storeys in a single household. Nobody enjoys hearing the thumping feet of kids running around upstairs whilst they're trying to enjoy a sit down and a coffee, for instance.

New masonry homes are fairly easy to treat – specify a beam and block floor, and it's basically job done. In timber frame buildings, you may need to invest in details such as British Gypsum's

Silent Additional Ceiling, which uses resilient bars to isolate the floor structure from the room below. The little things count, too. "We also make sure you can't hear any clunking in the pipes when water is running, for example," says Barbara.



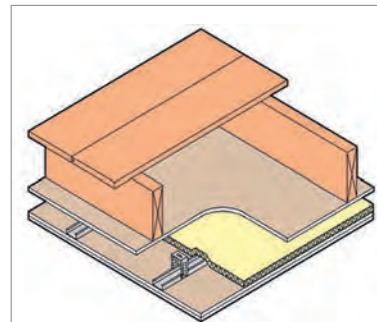
The power DV145 Adriot from Airflow Developments is ideal for ventilating larger homes. A triple-filter design protects against pollen and harmful particles for an hygienic environment

Lighting

Getting natural and artificial lighting right is a challenging task – but it's well worth spending plenty of design time on, because it could transform how you feel in your home. Fundamentally, the more natural sunshine you can flood into the living spaces the better. Daylight helps to maintain our circadian rhythm (our biological body clock), spurs vitamin D production (which supports our immune systems) and provides a whole host of other benefits – not the least of which is helping to connect us with the outside world. Quite simply, daylight has a positive impact on our mood and wellbeing, so if you have the opportunity to make the most of it, then do.

If possible, incorporate runs of glazing on south facing elevations, which will flood adjacent spaces with sunshine and also boost solar gain in winter to help keep the house warm. Put real thought into the position of rooms, too. "It's always important to look at what a plot can offer. Imagine coming home at the end of the day and sitting in a room that faces south-west to enjoy the evening sunshine," says Barbara. Items such as sliding or bifold doors, feature windows and rooflights can all help to add natural brightness – and you can 'borrow' light from other zones through the use of glass balustrades, floor glazing and similar ideas.

When it comes to electric lighting, it's a good idea to layer schemes with variegated sources in order to allow for different moods at different times of the day. You'll need enough brightness to comfortably cook in the kitchen or read on the sofa, for example, but too much illumination can feel oppressive. The colour appearance is important, too. Bluish light is welcome during the day, when we want to stay alert, but warmer hues are better for the evenings.



Establishing a healthy living environment includes measures to reduce noise transfer. This illustration shows how British Gypsum's Silent Additional Ceiling can be used to decouple suspended timber floors

SHOULD I WORRY ABOUT ELECTROMAGNETISM?

Electromagnetic radiation – also known as electrosmog – is all around us in many forms, from radio waves through to visible light. The UK government's advice (and that of the World Health Organisation) is that there's currently no evidence that exposure to domestic, low-level radiation from powerlines, phone masts and sources such as WiFi signals damages health.

Nevertheless, there are a range of options available to buffer your home from electromagnetic fields. "Some people do ask about this," says Barbara. "Timber is a good shield already, but you'll have electrical cables within the house, too. These can be installed so they're easy to switch off overnight, so there's no electricity running whilst you're asleep."

Some system builders also integrate shielding products for roofs and walls. A leading example is Baufritz's Xund-E-Plus, which the company states can shield against up to 99% of all externally-applied radiation.

Space planning

It should be a critical component of any major project, but it's important not to underestimate the wellbeing impacts of properly tailoring the plans to suit your lifestyle. Work with your designer to establish the best room proportions (including good ceiling heights) and flow between zones, based on how you want to interact with your home. "Before you build a five-bedroom property, consider whether the rooms will really be used," says Barbara. "If you want them for family to stay at Christmas, it might be better to go for a nice big lounge with double sliding doors – so you can create a guest suite when required." Tricks such as this could give you more space to enjoy year-round. Factors such as storage and accessibility should also be taken into account, and you may want to integrate design approaches such as the Lifetime Homes standard to establish a future-proof environment that will support you and your family for many years to come.

CONTACTS

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design details

Brickwork patterns

Create a decorative feature out of your home's facade by building a pattern into the walls.

Emily Smith investigates the options



VICKY BAMFORTH

Brick has been a staple for house building across the globe for thousands of years, but as with all fashions, it's fallen in and out of favour over time. Today, bricks are high on the wish list for those looking to produce a trendy facade, partly as homeowners and architects are becoming more adventurous with turning the finish into a focal point.

A massive boon for cladding your home in brick is the versatility this material offers in terms of creating different looks, as the units can be bonded together in a variety of arrangements. Going for something different to the standard stretcher bond will bring design interest and individuality to your property's exterior. You could wow visitors by using bricks to produce an eye-catching highlight with twisted,

protruding units. Alternatively, flush patterns can be very effective to achieve a more subtle result – herringbone layouts always create an impressive finish, for instance.

It's also worth noting that you don't necessarily need a decorative layout of bricks to make a pattern. The project that recently won the RIBA Stirling Prize 2016, Newport Street Gallery by Caruso St John Architects in south London, is a beautiful example of simply applying different bricks in blocks on the same elevation to form a pattern in its own right. The outcome is very effective, so it's worth a visit if you're seeking some inspiration.

Top: Pamphilon Architects chose Hectic Red bricks by Weinerberger for what they've called the Lacy Brick pattern on this extension to an Edwardian terrace



OLIVIER HESS PHOTOGRAPHY

Jamie Fobert Architects specified Danish coal fired bricks from Petersen Tegl for the facade of this new London infill project because of the unit's narrow and elegant dimensions. Although the bricks aren't placed in an unusual pattern across the stretch of walls, the edges of the building are met with a jagged effect that turns the brickwork into a focal design feature.



▲ Maxima long format bricks by York Handmade have been used in a basket bond on the upper half of this property's walls. The bold square pattern is a striking contrast to the timber cladding below.



The facade of this small new dwelling by Satish Jassal Architects proves that simple can be very effective. The designers chose to change the bonding direction on the different storeys. The result is a definition of volumes and a strong rhythm of horizontal lines across the elevation that adds design flair.

This extension by Fraher Architects is covered in angled brickwork that establishes an unusual 3D effect. The design also distorts any sunlight penetrating the house, creating patterns, and the grey hue is a striking contrast to the brown London stock used on the original building.



When Andy and Philippa Arnold self built a traditional styled house in Norfolk, they decided to pair red bricks with local coursed chalk blocks to create a statement pattern on the facade of their new home. The result adds kerb appeal and design interest.

Staffordshire Blue Umbra sawtooth and standard bricks by Ibstock adorn both the internal and external walls in this new house by architectural practice Dallas Pierce Quintero.



THE EXPERT VIEW

ARCHITECT **ANNA PAMPHILON** FROM PAMPHILON ARCHITECTS ANSWERS YOUR QUESTIONS ABOUT CREATING A FOCAL FEATURE WITH YOUR BRICKWORK



Q Will an unusual pattern in the brickwork of a property suit any house design?

It depends on the shape of your dwelling and the kind of project you're doing; personally, I believe keeping it simple will produce the best results. The most successful examples stick to one pattern and keep the rest of the facade straightforward – adding little patches of detail can end up looking quite messy. It also hinges on the shape of the house. If it's a complicated form or an old property then these features can look odd. Look up Chilean architect MAPA's Santiago apartment block – it's a superb example of a single zigzagging brickwork pattern applied to a whole structure.

Q What are the practical considerations for incorporating an interesting effect into brickwork?

The job needs to be done really well to be a success, which actually takes more commitment than you might initially think. You'll need to do a lot of research to decide what will work best with your plans – it's a good idea to make an online scrapbook of designs you like on websites, such as Pinterest. Once you've found something you fancy, you'll need to choose the brick. This can be a minefield in itself because there are so many options.

One of the most important aspects of creating a successful feature with your brickwork is to employ a highly skilled tradesperson. You can ask for certain qualifications or for the job to be done to specific standards, but it's really important to physically go and look at examples of their previous work – if you're content with what they've done before then you should feel confident in employing them. It's always worth asking the bricklayer to lay out a reference panel of bricks on site before starting the wall itself to check you're happy with the quality of work and overall look.

Q What type of brick should I use and who can help me to decide what will look best with my design?

There are thousands of options out there, and it's not just the colour that you need to think about – for instance, do you want handmade, machine-made or reclaimed; smooth or glazed; standard or bespoke dimensions?

Each type of brick has different qualities and uses, so there are many things to consider when picking a product. For example, most have a frog (an indentation at the top), but on our Lacy Brick project we had a pattern where units stuck out, so we needed a solid faced design to ensure water didn't permeate the structure. We also needed to make certain the bricks had the right frost resistance because they were so exposed.

I recommend you take an image of your pattern and the project plans along to a specialist and get them to show you some suitable products; a highly skilled bricklayer will also be able to offer advice. But remember, bricks can look very different in real life compared to a computer screen, so it's always worth seeing them in person before buying.

Q Other than choosing a suitable brick style and pattern, what else do I need to factor in?

The mortar that glues the bricks together is another key consideration. There's so much choice with different textures, colours and makeups. We picked a very white hue for Lacy Brick to lighten the heavy red units.

Another thing to look out for is the order lead time. Be organised to ensure the bricks arrive on site when they're needed and watch out for shortages. I once worked on a project where we had to change the product at the last minute to something we didn't really want because the units we'd ordered didn't arrive in time. Also, once they are on site, protect the bricks and new walls from the rain with hessian sheets overnight during construction to stop efflorescence (a salty deposit that can cause stains).

To produce a high quality result, I always draw out where each individual brick is going to be placed on both the plans and the elevation itself. This means we get exactly the right dimensions so that no bricks need to be cut to reach the full height of the building or to fit around doors and windows.

CONTACTS

The Bespoke Brick Company 01634 707707
www.bespokebrick.com **Caruso St John**

Architects 020 7613 3161 www.carusostjohn.com **Coleford Brick & Tile** 01594 822160 www.colefordbrick.co.uk **Dallas Pierce Quintero** 0208 088 1880 www.dp-q.com **Fraher Architects** 020 8291 6947 www.fraher.co **Ibstock** 0844 800 4575 www.ibstock.com **Imperial Handmade Bricks** 01952 750816 www.imperialhandmadebricks.co.uk **Jamie Fobert Architects** 020 7553 6560 www.jamiefobertarchitects.com **MAPA** www.mapaa.cl **Pamphilon Architects** www.pamphilonarchitects.com **Petersen Tegl** www.petersen-tegl.dk **Satish Jassal Architects** 0207 837 4511 www.satishjassal.co.uk **Wienerberger** www.wienerberger.co.uk **York Handmade** 01347 838881 www.yorkhandmade.co.uk

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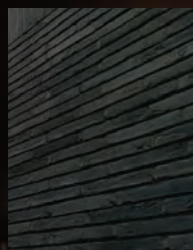


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Choosing roof tiles for a traditional-style home

The roof is a key element of every home's aesthetic, and there's plenty of choice when it comes to selecting materials to cover it. **Rebecca Foster** sums up the basics when it comes to specifying tiles for a heritage-inspired property

Whether you're self building a traditional-style home or restoring a period property, the roof is a core element you'll need to get right in order to establish an authentic, characterful look. If you're keen on a tiled finish there's a myriad of details to consider, from the size and shape of the units to the material they're made from – not to mention planning considerations, listing or other designations and how much budget you have to allocate to this element of your scheme. Here's how to approach this part of your project.

Are you renovating or self building?

If you're refurbishing a heritage home, the process of specifying a suitable product will depend largely on whether you're re-covering the whole roof, picking units for an extension or simply replacing a few damaged tiles.

"It's a good idea to consult the local planning office so they can set out the guidelines before any work is undertaken," says Melvyn Hillstead, managing director at Heritage Clay Tiles. "Special attention should be taken if the property is in a conservation area or if it's a listed building." This is because you'll probably need to match either the original materials or the prevailing streetscene.

If you only need to source a small number of units, going to your local reclamation yard to pick up second-hand goods could be a great option. However, as these tiles often come from abandoned buildings and demolitions, it can be difficult to track down large quantities from the same batch – so there could be variations.

If you're building an extension or completely re-doing the roof, it might be easier to find a like-for-like alternative, rather than something that's been salvaged. "If you're renovating an older dwelling, we would advise using a tile that's as close to the colour of the original as possible," says Dana Patrick-Smith from Dreadnought Tiles. Heritage-style machine-made tiles are a cost-effective choice, and providing you choose the right variety in terms of profile, colour and texture, should offer an authentic look.

Self builders have more options when it comes to specifying roof tiles, although the materials you pick are

still likely to be examined by the local planning department – you might even be required to send in samples. Selecting something that fits with the vernacular may well be the deciding factor that gets your scheme the green light. You should also consider the visual impact of the roof tiles and how they fit with the overall design. "You may want to opt for a roof colour that contrasts with your bricks, for example," says Simon Braithwaite from Travis Perkins. "Another option is to choose a hue that complements the colour of your fascia or windows."

Above left: Featuring a sanded granular finish, Sahtas' Brookhurst range of plain tiles cost approximately £33 per m². Thanks to their unique, time-weathered look, they are popular for traditional homes



Material options

Slate, clay and stone tend to be the most popular choices for traditional homes, and have provided the topping for many characterful UK houses for centuries. Certain regions are synonymous with specific locally-sourced materials, such as limestone tiles in the Cotswolds or slates in Wales.

Clay: While a mention of this material often conjures up images of striking terracotta-coloured roofs, clay tiles are actually available in a variety of hues ranging from warm red-browns to deep, velvety blues. Highly-prized by self builders and renovators for their good looks and durability, they can offer a service life of up to 60 years. "A true

Above: Widely-used on Victorian buildings, ornamental tiles add an extra design detail to break up large expanses of roof. Here, Dreadnought's club tiles are just about to be kiln-fired to fix the rich through-colour

natural clay tile will age better than one that's been stained artificially," says Dana. This is because the colour is integral to the unit, and won't fade if it's bleached by the sun.

"There are also subtleties of colour variation on each tile, and this is important across the large span of a roof," says Dana. "A product that isn't a natural clay will likely produce a noticeable repeat pattern that might not be apparent from looking at the samples." Units in this material are generally priced at about £20 per m², though handmade versions can cost as much as £40 per m².

Slate: Available in eye-catching shades of charcoal, green, purple and blue, slate tiles could add a unique aesthetic to your project. Wales, Cornwall and the Lake District are the UK's main production hubs, where slates have long been used as a vernacular material. When the development of the rail network meant slate could be transported across the country, it became popular with Victorian house builders. Robust and hardwearing, the material is prized across the world for its high quality and character.

For roofing purposes, individual units are split from large blocks of the material by hand, creating an attractive riven texture. "Welsh varieties are extremely long-lasting, lightweight, environmentally-friendly and won't fade," says

Below: These locally-quarried limestone tiles are available from Cotswold Stone Quarries, priced from £198 per m²



Michael Halle from Welsh Slate. "A roof made from this material should last about 150 years. It's not uncommon for tiles to be re-used a number of times in their life."

As a premium product, British slate tiles tend to cost in the region of £35 per m². Imported versions from Brazil, China and Spain can be much cheaper, but may not be of the same quality. An alternative is fibre-cement tiles, like Marley Eternit's Rivendale roof slates, which are available in blue-black and Cromleigh graphite.

Stone: From the distinctive limestone tiles found in the Cotswolds to the sandstone variations commonly seen in Cumbria, this material provides a characterful covering for dwellings around the country. It is predominantly used in regions close to where it's sourced, and as it is a more costly solution it's usually only used on building projects that are required to fit in with the local vernacular. Bear in mind that stone is much heavier than clay, so the extra load will need to be factored into the structural design of your roof. If

CLOSER LOOK: CHOOSING THE RIGHT FINISH FOR YOUR CLAY TILES

If you want to establish an authentic look using clay tiles, handmade versions may provide the effect you're after. "For renovators, this option is ideal as it's more likely to be in keeping with the building's character, and therefore more representative of the period it was built," says Melvyn from Heritage Clay Tiles. Many handmade goods are made in imperial measurements so that the authentic proportions can be maintained.

Historically, clay would be dug locally and left to weather before being used. It would then be transferred into wooden moulds (batts) before being wire-cut and finished by hand. At this stage, the tiles would be left to dry in the sun before being kiln-dried to lock the colour in. Some suppliers still use this technique, while others opt for the less labour-intensive process of hand-forming. Instead of putting the clay into batts, a machine produces a continuous sheet which is moulded by hand to form the arched shape of the tile. The clay used to make these two types of tile usually features a much coarser texture than for machine-made varieties, helping to create a time-weathered look.

more timber is needed to support the greater weight, this could increase the price of your scheme.

Concrete: If you're working to a tight budget, then concrete tiles may be a strong contender. Costing around 20% less than clay tiles, these products are available in a wide selection of hues and textures to mimic clay, slate and natural stone. However, while they may be a good fit for some traditional schemes, bear in mind that because the colour is not baked through the product, the hue will fade over time as the tiles are exposed to the sun. Like stone, concrete is heavier than clay, which may add extra cost to the structural arrangement of the roof as it has to support the greater load.

Heritage styles

Plain tiles and pantiles are widely considered to be the most traditional options, in terms of shape and style. "The traditional form of a plain clay unit in the UK is a single camber – this is a lone curvature along the length of the tile. Double cambers (curved along the length and width) do exist but these were a later introduction," says Dana. Typically, you'll need around 60 units to cover an area of 1 m².

While plain tiles are well-suited to achieving a traditional look, you may prefer to use flat S-shaped pantiles to create a distinctive wave and trough effect across the roof. "Pantiles were originally an imported style. They gained popularity in areas close to ports, although they've subsequently spread further afield," says Dana. Because of their larger size and the way they're affixed to the roof, it only takes about 18 units to cover a 1 m² patch.

If you're looking to make a style statement, ornate profiles such as bullnose and club tiles are also available. Given the right setting, these can work well with heritage-style schemes.

CONTACTS

Cotswold Stone Quarries 01451 850775 www.cotswoldstonequarries.co.uk **Dreadnought Tiles** 01384 77405 www.dreadnought-tiles.co.uk **Heritage Clay Tiles** 01708 853953 www.heritagetiles.co.uk **Lifestiles** 01787 237057 www.lifestiles.co.uk **Marley Eternit** 01283 722588 www.marleyeternit.co.uk **Sahtas** 01908 311411 www.sahtas.co.uk **Travis Perkins** www.travisperkins.co.uk **Welsh Slate** 01248 600656 www.welshslate.com



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How to upgrade your home's insulation

Eco consultant and sustainability expert **Nigel Griffiths** looks at the key strategies and considerations that will help you improve your property's thermal performance



Professional installation, for example by a National Insulation Association member, is vital when retrofitting CWI

For most people undertaking a major renovation project, upgrading the house's energy efficiency will be a key goal. To get this right, you need to address each of the core components of the external envelope (floors, walls, windows and roof) and look at how their performance could be improved.

In this article I'll explore the main options for upgrading each thermal element, but it's important to take a holistic, whole-house approach so that everything works together. You'll need to account for the risks involved in altering a property's structural fabric (see the box, top right) and be careful to avoid cold spots (which

principles remain the same. Here's how to approach your eco upgrade.

1 The roof

Heat rises, so a great deal of energy can be lost through an untreated attic void. If your home has a pitched roof and a flat ceiling below, leaving you with an unoccupied loft, it should be simple, cheap and cost-effective to add insulation. Typically, you'll be aiming to incorporate 270mm of mineral wool tucked between (and possibly over) the joists. There are a few things to bear in mind, however:

- Don't make the common mistake of forgetting to insulate the loft hatch.
- Never block the eaves – in most cases, these need to be kept clear to allow for adequate ventilation and thus prevent condensation.
- The loft void will move outside of the house's thermal envelope, so you may need to insulate round cold water tanks to prevent freezing.
- A little insulation goes a long way, whereas it takes a lot to do a little more work. It might not be worth

topping up if, say, you already have 150mm of mineral wool.

- You may want to consider other products, such as sheep's wool for its natural sustainability or options such as blown cellulose if the space is difficult to access.

If the roof has already been converted to offer living space, any thermal top-up would need to be integrated into the sloping ceilings – which can present more of a challenge. In most retrofits, insulation is added between the rafters, but it will be necessary to leave an air gap above this to allow for sufficient cross-ventilation. You can complement this with a layer below the rafters, but this will of course reduce head height. To minimise this effect, high-performance rigid foam insulation is normally used here.

2 Ground floors

Solid ground floors are difficult – and sometimes impossible – to insulate. It's not usually cost-effective to dig them out and add thermal protection beneath them, while adding insulation

BEFORE YOU GET STARTED

Don't upgrade insulation before you've dealt with basic upkeep. A well-maintained building will perform relatively efficiently, whereas a wet wall leaks energy fast – so it's important to ensure that your property is dry and free from defects.

can cause condensation), along with making the necessary adjustments to heating systems and ensuring there's adequate ventilation.

Without a proper assessment of the property, it's impossible to predict exactly how much energy saving any particular insulation strategy will deliver. That's because homes vary widely in terms of shape, construction, location, condition and services. Even apparently homogenous buildings, such as those on terraced streets, may have been altered or extended in different ways. What's more, patterns of occupation and energy use will also differ significantly. But the underlying



Insulating the attic space is often one of the most economical routes to improving thermal performance. Here, Rockwool's loft roll is laid in perpendicular layers – one between the joists, and another across them – to achieve the required depth

Measure	Main risks	Actions	Level
Solid wall insulation	Heritage impact Moisture build-up Indoor air quality Thermal bridging	Assess condition of building Use a whole-house approach Employ qualified contractors	High
Cavity wall insulation	Moisture build-up	Assess location for suitability Repair walls before injection Monitor internal walls	Medium
Loft insulation	Moisture risk	Ensure ventilation at eaves Check roof for condensation	Low
Suspended floor insulation	Moisture risk Indoor air quality	Ventilate below floor Check effect on ventilation within the building	High
Window upgrade	Heritage impact Thermal bridging at window reveals	Seek expert advice for historic windows Use a whole-house approach	High
Improving air tightness	Indoor air quality Moisture risk	Add ventilation if required Monitor moisture levels	High

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over the top will raise the floor level and is likely to cause issues at doorways and staircases. Instead, consider investing in a good quality underlay, which will do an effective job in most cases.

If there's sufficient space and access, suspended timber ground floors can be treated from below. Alternatively, the floorboards can be lifted and insulation retrofitted between the joists from above. This should be done very carefully if you're dealing with an historic floor, as it may be an important part of the house's character and value. It's also essential to ensure that air bricks at all sides of the property are left clear and unobstructed, as this strategy reduces natural ventilation. If the sub-floor airflow is insufficient, you could end up with rotting joists.

3 Windows

You might be surprised to learn that, often, more energy is lost through gaps around window frames than through the glass itself. With that in mind, maintaining and upgrading existing units is always a solid plan. In many cases, existing frames can be repaired and retained, deeper casements inserted with double-glazed panels and new seals fitted.

Even adding a thick set of curtains – or opting for well-fitting shutters – will substantially reduce heat losses. If a single-glazed window has a U-value (a measure of heat loss, where lower figures indicate better performance) of 4.3 W/m²K, investing in heavy curtains could drop the figure to as

low as 2.5 W/m²K, or even 1.7 W/m²K with well-fitting shutters.

The most obvious solution can appear to be replacement – and in some cases it makes sense. This market has become saturated with PVCu double glazing, which to my mind is unfortunate. Timber versions are widely available and will preserve the look and value of a period property. However, the majority of the benefits you'd get from making this switch could also be achieved through secondary glazing, which is not only much cheaper than replacement but involves a far lower environmental impact. The technique means you can also preserve the historic single-glazed cylinder glass, with all its attractive imperfections, whilst simultaneously improving performance (U-values can reach as low as 1.8 W/m²K or even better if combined with other measures).

If your property has already been fitted with early double glazing, it's unlikely to be as efficient as units manufactured to current regulations. Nevertheless, in most cases the in-use savings made by replacing this with newer double or triple glazed versions would be outweighed by the energy and cost of replacement.

4 Walls

There are three main classes of walling in the UK housing stock, and the period of your property can help to indicate which one is likely to have been used. The dates given below are approximate – and you should always investigate your property's makeup



thoroughly before you undertake any upgrades – but they set out a worthwhile general overview:

- Solid (single leaf) wall construction – brick or stone – pre 1919
- Cavity walls, uninsulated – brick and block – 1920-1975
- Cavity walls, insulated – brick and block – post 1975

Solid walls

These can be insulated inside or out. Either way, it's an expensive process and the benefits need to be carefully weighed up, especially where an elevation contains a high proportion of windows or doors.

External wall insulation (EWI) has the advantage that the original masonry becomes a heat store, able to absorb and radiate warmth back into the living space – so you get a very thermally effective result. The method adds a new weathering layer to the outside of the property, and it's essential this is accurately detailed. Sealants should be avoided, as these

Above: A Ventrolla window renovation specialist installs draughtproofing into original sashes

TOP TIPS

- Begin with good maintenance – ensure walls are dry, inspect seals around windows, clean gutters and check the roof and flashings.
- Be realistic about the savings you expect to achieve.
- Do what is simple, safe and cost-effective.
- Insulation reduces heat demand – so the boiler and/or heat distribution system may need to be adjusted in order to achieve full savings.
- Ensure that ventilation remains adequate.
- It's wise to consult an expert when dealing with buildings of traditional construction.

Right: CosyWool flexible slabs from Thermafleece are made of a mix of sheep's wool and recycled fibres. The breathable product is ideal for a range of applications in period properties – including internal wall insulation

break down over time. It's also a good idea to use moisture-open insulation products, such as sheepswool, as otherwise any water that enters the wall matrix will become trapped, which will lead to damp internal walls. A key consideration is that, with period homes, it may be essential to retain the appearance of the original building – which may make it difficult to use EWI. It could, however, still be considered on some rear elevations or on properties that have been rendered later in their lifetime.

Internal wall insulation (IWI), by comparison, is not quite so effective, as it reduces the masonry's ability to store useful heat. It will also reduce internal floor area slightly – plus there's still potential to impact on the house's heritage, as original skirting boards and cornicing are difficult to retain or replicate accurately. You'll also need to remove and reinstate any services currently in place, such as radiators and power outlets.

Applying IWI will mean the original masonry walls become colder, which in turn reduces their ability to deal with moisture ingress. It's therefore essential to ensure the building is weathertight before installation. You'll need an independent expert to assess the risk of condensation and mould growth at the interface between the IWI and the walling –

and, again, you should always specify moisture-open products.

Bear in mind, too, that there will be thermal bridging (where heat escapes across a structural element that has a direct connection between inside and out) at locations where the IWI can't be applied. This could include the likes of staircases abutting external walls and suspended upper floor matrixes. Condensation is more likely to occur at these points.

Cavity walls

Up until the mid 1970s, cavity walls were constructed without insulation, as the outer layer was simply viewed as protection from the elements. It's now common to retrofit insulation by injecting it into the cavity – a relatively cheap and simple process, with no disruption to the internal space.

However, in recent years there has been an increase in the failure rate of this kind of cavity wall insulation (CWI). This is because the gaps between masonry leaves were designed to be ventilated – and retrofit CWI prevents this. If there are any imperfections in the external skin, such as cracked render, water will enter and become trapped. It will then be conveyed to the inner skin, resulting in mould growth where previously there was none. In such cases, the insulation will have to be removed by professionals, which is an expensive job – so it's important the installation is completed correctly. For the same reasons, in areas of high exposure to driven rain, it simply may not be appropriate to fit CWI.

Later cavity walls already have insulation built-in, although there may not be a great amount of it. Yet even where there's space to add more, it's usually pointless to do so, as the cost and impact of the work is likely to outweigh the minimal improvements in energy savings.

Bear in mind that retrofitting any wall insulation will reduce natural ventilation to some degree – so the adequacy of a fresh supply needs to be checked afterwards to ensure good indoor air quality.

5 Improving airtightness

This is often overlooked as a means of saving energy. In an unaltered building of traditional construction, air leaks through gaps between floorboards, floor/wall junctions, sash windows, services penetrations, open chimneys etc. All told, this can amount to 30% or more of heat losses.

Many of these air pathways are simple and cheap to seal up – for instance by replacing seals around window frames, closing chimneys (leaving through ventilation by means of an air brick) or using a good quality underlay on butt-jointed timber ground floors. Sash windows can



be upgraded by inserting draught proofing strips to seal the gaps between the casement and the frame. This kind of restoration work is normally carried out by specialists.

However, we all need fresh air – and natural (sometimes called uncontrolled) ventilation is an important way of keeping older homes dry. After 100 years or more, buildings inevitably develop some weaknesses. Many will be admitting water through faults in masonry, missing or broken seals, incorrect ground levels and – most commonly – defective rainwater goods.

So when improving airtightness, it's essential to retain sufficient ventilation to provide decent indoor air quality and help the building deal with any moisture ingress.

NIGEL GRIFFITHS



Nigel Griffiths is director of ~the Sustainable Traditional Buildings Alliance (www.stbauk.org) and a consultant working mainly on energy efficiency policy and evaluation. He specialises in sustainable construction and building performance and is the author of the *Haynes Eco House Manual*.

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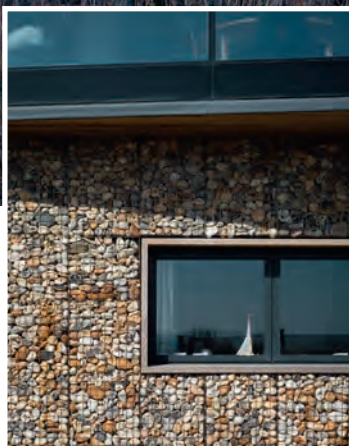


Above: Durisol blocks (made from wood cement, with a concrete core) were used for the ground floor of this build in Shoreham-by-Sea, by ABIR Architects. The walls were clad with gabions, their stones making the building melt into its surroundings

Although the technology behind it is more than 50 years old, ICF (insulating concrete formwork) is just hitting its stride in the UK. Its key benefits – a quick, all-weather build, and impressive thermal performance – make it a good fit with most self-builders' preoccupations. But how do you create an ICF home that maximises these advantages and brings some appealing design flair?

This system is one of the simpler build methods to understand. The insulating formwork that gives the system its name consists of modular hollow blocks, usually made from polystyrene (but some, such as Durisol, from wood cement). These are interlocked on site and reinforced with steel rebar, before concrete is poured into the cavity. The pour is generally done in stages, floor by floor. Once this phase is completed, the building can be finished externally with render or whatever cladding is desired (see box on top right).

The concrete has fantastic structural strength as well as excellent thermal mass – absorbing, storing and



JIM STEPHENSON

releasing heat to moderate internal temperatures. Thanks to its two layers of insulation, an ICF house can achieve Passivhaus standards of efficiency (assuming it is combined with other appropriate measures, such as high-performance glazing).

Design considerations

Although the ICF system consists of modular blocks, that doesn't mean you'll end up with a blocky-looking house (unless you want one, of course). Robin Miller from Beco Wallform suggests that using an architect with some familiarity with the construction method is always useful, both because they will know how to maximise thermal performance but also because of their design flair. "You don't want to end up with a box – or even worse, something that can't actually be built," he says.

Energy efficiency and speedy build times are the headline benefits of using insulating concrete formwork – but many architects also favour this system because of its design flexibility, says **Emily Brooks**

Robin works regularly with architect Nigel Johnston of Nigel Design, who has created homes using many construction methods. "With ICF you can create anything, from a stone-clad castle to a contemporary house that's filled with glass," says Nigel. "It's extremely adaptable and you don't need to feel confined by any design constraints."

Architectural technologist Jake White of Ecotecture says that "the most prominent reason to use it, from a design perspective, is flexibility." The practice created Curly House in Sussex, which was built using Nudura's ICF system. The property has become a celebrated example of the flexibility this construction method offers. It's the least blocky building that you could imagine, with a crescent-shaped footprint and daring curved glazing.

If you want to build as efficiently as possible, your house should have a design that is aligned with the dimensions of whatever ICF system you're using (Beco Wallform's, for example, works on 62.5mm increments). This means less work, and less waste, on site. "If you design to our dimensions, we can keep waste to 1% or less," says Jean-Marc Bouvier, Nudura's director of sales and business development.

Creating striking features

"Architects who have used Nudura love the fact that there are no design restrictions," says Jean-Marc. But as with any system, you may end up paying a bit more for unusual work. To create Curly House, for instance, bespoke Nudura blocks of the correct radius were specially made for the project, which is more expensive than

Steel supports were hidden within the Beco Wallform ICF core of this house in the Scottish Highlands by architecture Nigel Design



using off-the-peg formwork. "The house design started out with lots of different radiuses, but we refined and rationalised it until we had just two – the fewer types of block you are procuring, the better, from a price perspective," says Jake.

A cost-effective alternative is to use straight blocks cut into wedge-shapes to fit the desired radius, although this will result in a more faceted appearance rather than a smooth curve. But the angled elements could be covered up with an additional layer of carrier board.

The concrete core's structural strength is an advantage when adding features such as brise soleils, which can be bolted straight on. "For contrast, if you were adding an overhang on a timber frame house, you might need an additional steel frame to provide the primary support, which has the potential to create thermal bridging, as well as some movement and cracking," says Jake.

Large spans are also possible with ICF, with some structural engineering expertise. "The standard opening is up to 6.3m, but we did a house with

12.8m openings – it's just a case of adding a bit more rebar and a bit more concrete," says Jean-Marc.

Nigel Johnston loves ICF for its ability to conceal any additional structural elements. "You can put extra reinforcement in and beef it up where you need to," he says. "By adding a steel 139mm circular hollow section within the concrete core, the structure will hold up just about anything – one project I worked on was able to support a very heavy grass roof, for example."

On-site and later changes

It's possible to make alterations to your design once you are on site, but it's a case of the sooner the better. "Before the concrete is poured, it's easy to take the blocks apart and put them back together again if you need to move something, such as window and door positions," says Jean-Marc.

The monolithic structure of an ICF home makes it quite difficult to change once it's built, however. Jean-Marc suggests that one way to future-proof a design is to have the lintels cast in for any potential

EXTERIOR FINISHES

- ICF homes can be clad in any material externally, so the build system lends itself to all styles of home, from country cottage to minimal modernist dwelling.
- Render is the easiest and cheapest way to finish the outside of an ICF house. A layer of metal or plastic lathing is fixed to the polystyrene outer layer first, and the render goes straight on top.
- Brick slips can also be adhered to the outer face of the formwork. The preparation is the same for render: a waterproof coating and a layer of metal or plastic lath.
- Real brick or stone outer leafs can be built up with a cavity back to the ICF inner wall, tied back as with conventional masonry.
- Timber cladding can be affixed using a batten and rail system, screwed into the concrete core.

Curly House was designed by Ecotecture and built using Nudura's ICF system



windows and doors, so that if you do ever plan to extend, the structural integrity will already be built in.

Robin at Beco Wallform says that "if you wanted to put in a small window, you might not even need to put in a new lintel – there's a good chance that the concrete would provide sufficient support in itself. You'd need to have a word with an engineer to see what they say."

Most people don't use ICF for their internal walls, despite the advantages when it comes to soundproofing. By sticking to standard non load-bearing studwork partitions, future internal layout changes will be straightforward.



Above: The Logix system was used as part of a hybrid construction for this extension, in tandem with steel frame and swathes of glass. This allowed for a concrete upper floor structure and external balcony, whilst also offsetting the heat loss from the glazing. The 4m tall ground floor walls were cast in a single operation

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85



82



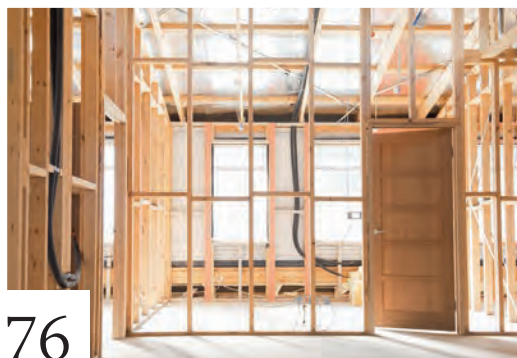
93



88



97



76

76

TIMBER IN CONSTRUCTION

It's likely that wood will play a big part in your self build project – from the structure itself down to first and second fix carpentry

79

5 THINGS YOU NEED TO KNOW ABOUT TIMBER FRAME

This ever-popular construction method could offer you a fast, flexible and cost-effective route to your dream home

82

OAK FRAME: THE BASICS

This age-old building material is famed for its timeless appeal – but is it the right fit for you?

85

4 REASONS TO BUILD WITH SIPS

Discover how structural insulated panels can lead to a high-performing dwelling that's weathertight in days

88

TIMBER DOORS & WINDOWS

Wooden fenestration adds more than just character. Emily Smith investigates how traditional units can meet modern needs

93

GOLDEN RULES FOR TIMBER FLOORING

Rebecca Foster shares 12 top tips for choosing and treating a characterful wood floor that's the right fit for your home

PLUS: AMAZING CLADDING IDEAS (PAGE 91) & TIMBER OUTBUILDINGS (PAGE 97) >>



TIMBER IN CONSTRUCTION

Whatever style of build or structural system you're using, wood will form a core part of your project, says **Chris Bates**

Wood has been used in construction for centuries, and with good reason; some structures built with this material are still standing 800 years since they were erected.

Timber is readily available, easy to cut and shape, solid and highly durable – so it can be used for a range of purposes. Properly sourced, converted and installed, timber is also a natural and highly sustainable material that can benefit the eco credentials of your project. What's more, its versatility means that, even if you're building a masonry home, it's likely that a significant proportion of the components that go into your scheme will be wood-based. Here are some of the key options for integrating it into your home:

Building systems

One of the big choices on any project is what will go into the main superstructure, and many self builders see the benefits of timber construction. The main options include panelised timber frame (see page 79 for an in-depth look), green oak (page 82) and structural insulated panels (page 85). Each of these has its own benefits and nuances that could lead you towards specifying them for your scheme, but there are various shared benefits – including ultra-quick build speeds, quality control in the factory or workshop and excellent design flexibility (you can clad these systems with just about any material).

Most suppliers of timber homes offer a package service, which can take some of the stress out of your scheme. At the very least this will include the structural design, materials supply and (usually) erection of the main shell of your new house to weathertight stage – including the floor joists, roof trusses, membranes etc all as one neat bundle. At this point you can either project manage the rest of the work yourself or take up some of the follow-on services offered by your provider.

Roof structures

Regardless of which construction method you choose, the roof will almost certainly be built in timber. The standard option for most projects is to use pre-manufactured Fink trusses, which are engineered with a W-shaped network of supports to achieve excellent strength using as little timber as possible – thus making it highly cost effective. There are opportunities to upgrade, too, for example by using attic trusses or SIPs to open up the loft space for use as additional living accommodation.

There are still some instances where you might use a cut roof (sawn and assembled on site). For instance, it's the natural choice as part of a limited renovation or where access to the site is especially difficult and there's no way to deliver prefabricated building elements.

Floor joists & decking

A huge number of UK self builders and renovators specify timber intermediate floor structures – although the solidity of beam and block can be an attractive alternative for masonry projects. Standard solid timber joists might still

Above: Standard Fink trusses are the most cost-effective option for the majority of roof structures; although they don't allow use of the loft space

be used on smaller refurbishments, but they're going out of fashion for new build homes and major projects.

Instead, modern engineered versions such as I-joists and metal web products (known as posi-joists) are now typically chosen. These are much more stable, less likely to creak, quick to install, can span greater distances (allowing for open plans) and enable much easier integration of services in the floor structure. Once the joists are in place, they'll be decked with either a timber sheet material, such as chipboard, or tongue-and-groove boards.

An alternative for new build projects is to opt for floor cassettes, which are pre-manufactured timber panels that can be quickly craned into position, thus helping you to get to weathertight shell stage even faster.

Beamwork

The proliferation of engineered, composite wood-based products such as glulam (glued laminated timber) has



reduced the need for the use of steel in timber frame buildings. These quality-controlled products offer much greater strength than solid wood for a given thickness, and are also available in bigger profiles – which means they can span significantly further distances. This can enable you to readily incorporate impressive features, such as wide runs of bifold or sliding doors.

Partition walls

If you've selected blockwork or a system such as insulating concrete formwork for your superstructure, you might think that also using it for the internal walls makes sense. In fact, there's not a great deal of economy of scale to be had with this approach – and in most cases, provided partitions aren't structural, it will be much more economical to switch to a timber solution. Stud walls are quick and easy to cut and install on site, plus you won't need to wait for them to dry out before you can finish them (usually with taped and jointed plasterboard). What's more, should you (or a future owner) decide to change the door position or even move an entire wall a few years down the line, they'll be relatively straightforward to alter.

Above: Timber stud internal walls are quick and cheap to build, plus they can readily accept services such as cabling and pipework if required. Left: Ventilation and other services can be relatively easy to run through open-web floor structures, such as these posi-joists from Mitek (www.mitek.co.uk)

WHERE ELSE IS TIMBER USED?

1 Staircases – the vast majority of flights are formed in wood, often using a mix of materials. For instance, non-visible elements such as treads and risers that are to be carpeted might be formed of MDF, whilst strings, balusters and other stair parts could be of painted pine, oak or other visually appealing timbers.

2 Structural sundries – this would include battens for purposes such as affixing roof tiles and plasterboard, in addition to the likes of sole and head plates and materials used to box out services. It might also stretch to timber used for bracing and formwork during the build.

3 Windows – timber is a highly popular choice for fenestration, offering the opportunity to achieve thin sightlines and, with the proper care, an extremely long lifespan. The material is also commonly used for internal doors and linings.

4 Fitted furniture – as well as kitchen carcassing, wood is also the go-to choice for the likes of floor-to-ceiling wardrobes and other bespoke arrangements.

5 Finishes – including cladding (page 91) and flooring (page 93) in a wide variety of species, colours and effects, as well as the likes of skirtings and other mouldings.



These white brushed planks are from The Natural Wood Flooring Company (www.naturalwoodfloor.co.uk)



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5 things you need to know about timber frame



1 There are two main types

One of your key choices will be between closed and open panel. The system forms the superstructure of the dwelling in both cases so there's little or sometimes no need for internal load-bearing walls. The walling elements comprise a network of softwood studs between two sheets of oriented strandboard (OSB) or plywood. Open-panel versions are left unsheathed on one side so insulation can be installed when the frame is delivered to site. With closed systems, the panels are delivered with the protective thermal layer already built in and the units boarded up.

"These days, self builders tend to choose closed panel options," says Simon Orrells from Frame Technologies. "They see the value in having a fully-engineered timber frame that's been manufactured off-site under factory-controlled conditions." Some suppliers also pre-fit doors, windows and service channels into their closed-panel arrangements, further speeding up progress on site.

"Open panel is generally cheaper but with a closed setup you get the benefit of a whole wall system, which with a WeberHaus home includes the internal and external finishes," adds Nick Blunt from WeberHaus.

2 It's a precision-engineered product

The first step of the process is to choose a supplier to manufacture the structural shell of your home, before delivering it to your building plot, ready for assembly. "The quality-controlled manufacturing process produces a precise and accurate frame for follow-on trades, helping to minimise labour costs and shorten the build schedule," says Pdraig Hurley from Taylor Lane. This makes it fairly straightforward to deliver predictable results in terms of insulation, airtightness and ultimately energy performance.

"The final choice between open and closed panels is down to client preference and their targets for the running of the building – by which we mean a balance between cost and energy-saving, build convenience and complexity," says Ian McCarthy from Timber Innovations. Timber framing is a specialist skill, so may not be the ideal choice if you're looking to get hands-on with your self build.

3 It gives you design flexibility

Package firms offer a selection of services, from design, supply and erection through to full turnkey solutions that also include project management and planning advice. As such, self builders can determine the level of involvement they want their timber frame provider to have.

As well as providing a swift route to creating your own bespoke home, this popular construction system offers a plethora of design options, says **Rebecca Foster**

Whether you're keen to create an ultra-modern home or a characterful cottage-style dwelling, you'll find that the majority of suppliers offer a myriad of off-the-shelf schemes that can be tailored to suit your requirements, and many also provide a bespoke service. Most will work to plans drawn up by an independent architect of your choice, too.

"Flexibility of design is one of the major attractions," says Simon. When it comes to the exterior style, you can choose from wood cladding, render or a brickwork outer skin, depending on the look you want to create. And as there's often no need for load-bearing internal partitions, you're also free to establish a floorplan of your choosing, which could be adapted over time to suit your changing needs.

However, bear in mind that it's difficult to make alterations to the core structure once it has been manufactured. Therefore, it's worth putting in the time and thought at the earliest design stages to make sure you get things right.

4 You'll get an ultra-quick build

The swift pace of construction is another boon that attracts many self builders to this route. While timber frames come with an approximate lead time of 12 weeks, this gives you the chance to prepare the groundworks on site so the frame can be erected as soon as it's delivered.

The superstructure itself can take as little as three days to erect, with most projects reaching wind and watertight stage within a week. This means you don't have to worry about unreliable weather conditions holding up progress on site. "Essentially, you're hitting the ground running with over half of the building work complete in the first week," says Oliver Grimshaw from Hanse Haus.

5 It's a cost-effective choice

Timber frames offer one of the most affordable routes to a bespoke home, broadly on a par with masonry in terms of price. This is because less labour is needed on site compared to wet forms of construction, balancing out the larger upfront payment for the factory-made frame. A mid-spec design and erect service from a package supplier could range between £1,200 per m² and £1,600 per m².

Above: Taylor Lane operatives install an open panel timber frame system on site

Stunning timber homes



Developed by Taylor Lane, this house in Essex features a striking black timber cladding finish, which contrasts beautifully with the red-brick plinth and masonry chimney feature, helping the home blend well with nearby dwellings



Keen to create a home that was totally bespoke, the owners of this striking dwelling opted to go with Hanse Haus's timber frame system. The dramatic pitch of the zinc roof creates a barn-like feel, helping the property complement its local surroundings. The 516m² project cost £746,000 (£1,446 per m²)



Built on the site of a former farm building, this 362m² house was designed by Scotframe. Expansive swathes of glazing give it a distinctive, modern vibe. The pale brick and render finish contrasts with the slate roof tiles



Featuring a red-brick outer skin, this Georgian-style home by Scandia Hus, oozes traditional wow factor. The owners were able to create a layout that catered to all of their needs, with accommodation spread over three floors. A similar 545m² design would today cost around £700,000 (£1,284 per m²)



Inspired by the traditional appeal of Potton's Heritage range, the owners of this house tweaked the company's Caxton design and created a characterful home that satisfied their unique requirements. Measuring 185m², the property cost £245,000 to build (£1,324 per m²)



Measuring 500m², this stunning white rendered dwelling by WeberHaus boasts plenty of contemporary kerb appeal. Delivered as part of a full turnkey package, the homeowners worked closely with the firm's in-house designer to create a house that suited their requirements

CONTACTS

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Oak frame: the basics

The distinctive shakes, character and honeyed hue of an oak frame are a winning combination for many homeowners, but it's also a robust building material that offers fantastic sustainability credentials, says **Emily Smith**

As a native tree to Europe, oak has been used to build homes in this country for thousands of years. "Self builders choosing this material have the reassurance that they are using a high quality system with a great reputation," says Mark Jones from Welsh Oak Frame. "Many homeowners express their love for its natural elegance, features and graining."

Oak framing creates a standalone structural skeleton capable of supporting itself and the weight of the roof and floor structure, without the need for structural panels or sheathing. Green oak (recently felled timber) is used because it's easier to cut and shape. The structure will dry out over time, shrinking into place and creating the unique splits that many homeowners find so alluring.

Although these trees take a long time to grow, this method is still an environmentally friendly construction option, especially if you use a local source (less distance to transport the material means less CO2 emissions). Plus, many suppliers go to great lengths to assist in the growth of sustainable woodland; Carpenter Oak plants 10 saplings for each tree the company uses, for instance.

Design

The same skilled craftsmanship that has been used to form oak frame houses for hundreds of years remains very similar today, but the way they are designed, cut and insulated has

adapted to keep up with 21st century technology and building regs.

3D modelling software is used to produce a scheme, offering you the opportunity to take a virtual tour around the self build or extension before it's built. "We can create bigger and bolder designs, combining oak with glass, steel, structural insulated panels (SIPs), glulam and other materials to form hybrid frames," says Kat Hamilton from Oakmasters. "Nowadays, more and more manufacturers are using computer guided machines to do the heavy cutting and lifting, leaving the finishing, fine details and tricky parts to skilled craftsmen. This process means that



NIGEL NGDEN

Boasting chocolate-box appeal, this new house by Border Oak features traditional Tudor style exposed beams on the external facade. Dormer windows, brick edges and a timber clad addition complete the look



Being able to adorn your walls and ceiling with exposed timbers is a key selling point for this method of construction. In this property by Carpenter Oak, rooflights flood the room below with ample daylight, highlighting the characterful splits and knots in the natural material

Oozing classic barn appeal, this property on the edge of the Ashdown Forest was designed and built by Oakmasters. Spread over 275m², the dwelling cost approximately £380,000 to build (£1,382 per m²) and took about 10 months to construct



production is more accurate, the structure fits together better and time spent on-site is reduced."

While frames were traditionally in-filled with wattle and daub, most modern oak skeletons are wrapped with highly insulated panels to produce an energy efficient structure. The traditional Tudor look of exposed beams both inside and out is difficult to achieve under modern thermal performance requirements. "Oak will shrink and twist as it dries, which could result in poor airtightness or at worst, water leaks," says Jamie Wilson from Carpenter Oak. "We suggest the frame is used purely as a structural feature inside the building (in the warm zone)

and/or kept separate from the external (cold zone) layer, with no timber passing directly between the two."

While oak can be used to create beautiful traditional style houses, don't assume that a contemporary design isn't possible with this material. In fact, many strikingly modern looking properties have been built using oak. Incorporating expansive glazing into the structure is one way to create contemporary allure, but you can also introduce elements such as steel pegs, metal legs and laminated beams.

Cost

It's no secret that oak is more expensive than some construction

routes – you may be looking in the region of £150 more per m², according to Carpenter Oak. But with this method you're investing in quality, character and craftsmanship that is likely to add heaps of value to the end result. "Oak can be used attractively in conjunction with other building materials, so you can lower costs by pairing it with other methods," says Kat. "Be selective about where and how the wood is used, while still achieving real wow factor."

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This stunning new property in north Wales (also pictured top) was built for £600,000 (£2,041 per m²). The frame itself came in at £79,572 and was supplied by Oakwrights. The homeowners chose to wrap the skeleton with the company's WrightWall encapsulation system (at a cost of £44,982), and the result is a home with exceptional thermal performance

This former milking parlour has been converted into a breathtaking dwelling by architectural practice Van Ellen + Sheryn. An eye-catching frame by Carpenter Oak was craned in and filled with expansive glazing to produce a modern vibe



Proving that this method can be used to create stunning modern-looking homes, this property by Welsh Oak Frame features exposed wood throughout the interior. Outside, brick cladding partners with lots of glazing to create a contemporary look



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4 reasons to build with structural insulated panels

Andrew Hobbs reveals how this construction route can deliver sustainability and design flexibility, while minimising on-site stress

Thanks to the relentless pursuit of thermal efficiency, self builders now have an enormous array of products to select from when planning their scheme. While all this choice gives you freedom, it also forces you to make a lot of tricky decisions – ranging from glazing and heating, right up to the build system you adopt. Structural insulated panels (SIPs) have found favour amongst those wanting to achieve high levels of insulation and airtightness, though that's not all they offer. There are several key reasons to opt for this method.

1 Precision manufacturing

SIPs are formed with an inner section of rigid insulation (usually either polyurethane or polystyrene) sandwiched between two sheets of oriented strand board (OSB) with a glued or self-bonded join. Computer assisted factory environments allow the panels to be produced to the exact measurements required by the client. "This virtually eliminates the need for any onsite adjustments and allows the construction to be completed following a predictable, pre-agreed schedule," says Matthew Evans, technical manager at Kingspan TEK. "As a result, there's little site waste from off-cuts and no time lost to adjustments."

2 Fast build times

While standard softwood framing techniques also benefit from quick builds, the integrated nature of SIPs makes it lightning fast. Once the groundworks are ready it only takes around two to three days for the panels to be erected and the structure made watertight. Shutting out the British weather as early as possible in a project certainly has its attractions, given the cost of delays. Depending

on ground conditions, there are also further benefits to the panels' lightweight design. "Foundations can often be dug to a much shallower depth than would be possible with a typical masonry construction, saving time as well as labour and material costs," says Matthew.

3 Versatile design

As well as shutting out the wind and rain early in the project, a SIPs roof boasts excellent weight bearing strength due to the large, rigid composition of the panels. "This allows for eye-catching features such as vaulted ceilings," says Mike Fleming from Glosford SIPs. And as the panels are structural, there's no need to use trusses and large amounts of bracing – leaving you with a clear, insulated loft that can easily be fitted out and used as extra living space.

The system can even be used to create curved roofs and walls in a range of styles. "Structural insulated panels are a very flexible product and can be employed with any external cladding, including brick, render, metal and weatherboarding," says Martin Cook, operations director at SIPs Eco Panels. "Equally they can be roofed with slates, tiles or metal finishes."

4 Great thermal performance

For many, the biggest benefit of building with SIPs is the system's ability to retain heat through excellent insulation and airtightness. Special joints, membranes and minimal cold bridging ensure an almost uninterrupted, ultra-efficient core throughout the fabric of the building. "U-values (a measure of thermal transmittance) will vary depending on the thickness of the manufactured unit," says Mike. "Kingspan TEK products, for example, range from

0.15 W/m²K to 0.20 W/m²K for the 142mm or 172mm panels, with various external claddings and no secondary insulation layers." The system can typically achieve higher levels of thermal efficiency than timber frame would at the same wall thickness.

IMPORTANT CONSIDERATIONS

- While SIPs can be erected in a matter of days, the lead times for fabricating the panels are comparable to timber frame (around 8-12 weeks).
- It's vital that follow on trades are familiar with the system in order to fix cladding products and heavy items such as kitchen cabinets correctly, while preserving the panels' thermal performance.
- Structural costs tend to be around 5% to 10% more than timber frame. However, if you are aiming for very high levels of airtightness and insulation, the difference is significantly reduced.
- Due to the precise factory fabrication and thermal properties of SIPs, it's important to make sure you're happy with your design when you submit it to the supplier – it's difficult to make changes down the line.

This modest 113m² end of terrace project utilised Kingspan TEK structural insulated panels, supplied and erected by SIPs@Clays for a cost of £30,000 (£265 per m²)

Inspiring **SIPs** homes

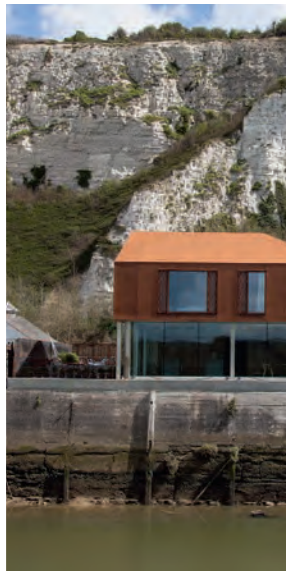
Vaulted ceilings and simple glulam trusses add wow factor to this stunning 136m² bungalow in Acklam. SIPs@Clays' supply and erection of the SIPs package came to £47,000 (£346 per m²)



AMBIENT AIR



This 400m² white rendered property was designed by Clear Architecture and features an impressive three-storey entrance hall. The SIPs package was supplied and fitted by SIPCO for a cost of £85,000 (£213 per m²)



A hybrid approach, which combines structural SIPs from Kingspan TEK with steel and concrete supports, helps give this 249m² scheme its unique appeal. The SIPs component comprises £30,777 (£124 per m²) of the £712,000 total project cost



Glosford SIPs supplied and erected the shell for this eye-catching 265m² bungalow in East Sussex for a cost of around £70,000 (£264 per m²). Black timber cladding and large windows enhance its minimalist appeal



At 220m² this attractive contemporary home benefits from extensive glazing – maximising the potential for solar gain. Sips Eco Panels provided the structural shell for £48,000 (£218 per m²), which the client erected himself



ANTHONY HARRISON

The Robinsons turned to Sips Eco Panels to help build their highly energy efficient home in Norfolk. A ground source heat pump and solar panels combine to make the property even more economical to run. The 230m² dwelling came in at £295,000 (£1,283 per m²) in total

CONTACTS

Clear Architecture 02085 025585 www.clear.gb.com **Glosford SIPs** 01432 842999 www.glosfordsips.co.uk **Kingspan TEK** 01544 388601 www.kingspantek.co.uk **SIPCO** 01514 245346 www.thesipcompany.com **SIPS@Clays** 01756 799498 www.claysllp.co.uk **Sips Eco Panels** 01592 631636 www.sipsecopanel.co.uk **Superior SIPs** 0845 519 3705 www.superiorsippanel.co.uk **SIP Building Systems** 01514 201404 www.sipbuildingsystems.co.uk



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TIMBER DOORS & WINDOWS

Offering character, durability and energy efficiency, **Emily Smith** investigates why wooden units could be the perfect choice for your home



Urban Front's E80 Pivot door in iroko, oiled with a side lite in clear glass with option 11a handle. Sized at 1,200mm (W) x 2,400mm (H); door priced at £5,016 and handle £580

MATERIAL SELECTION

Not only will the look of your doors and windows greatly affect the character and kerb appeal of your house, but they will have a huge impact on the comfort, usability and performance of the entire property. Hardwood, softwood, solid, composite, painted, engineered, real-wood veneer – timber is a popular solution, but there are so many options to choose from. Plus it's important to get the spec right so you pick units that match your budget, security and energy efficiency needs.

A key reason that wood remains an attractive choice for doors and windows is the inherent natural allure it offers. "It softens a building, giving a texture that is sophisticated," says Elizabeth Assaf from Urban Front. "It can outlive most other materials if it is maintained properly and doesn't go out of fashion." Timber is also a naturally good insulator because the cellular makeup consists of air pockets that trap heat.

Different species of wood have their own distinct properties and advantages. For example, while oak is often seen as a premium product, other kinds can produce an equally high end look – and remember that this doesn't necessarily have to mean hardwood. European redwood has a reduced moisture uptake and grows with few knots, meaning it will maintain its colour and offer an attractive finish; Western Red cedar is a popular cladding choice, meanwhile, but it can suffer from scratching and marking, so may not be suitable for a regularly used door. These are just a few examples, but the right match for your home could hinge on a number of factors, including the hue of the wood, its durability and what level of performance you're after.

STYLE

When it comes to choosing doors and windows, there's a whole spectrum of styles, proportions and colours out there for you to navigate, so you'll face no difficulty in finding products that will suit your property design and aesthetic preferences. Some finishes are completely unrecognisable as wood, but homeowners still decide to go with them to make use of the many advantages of timber. Others choose to go with a composite solution that combines wood with another material – with sleek aluminium on the outside and characterful timber inside, for instance.

There are various configurations available – heritage options that will work wonderfully for replacement units in period renovations and



oversized doors/slim-line window frames that are tailored towards a more contemporary look – all with the same performance advantages of the 21st century manufacturing process. The distinction between doors and windows is becoming increasingly blurred, with glazed sliders and bifolds, plus rooflights that offer an entrance onto a balcony or terrace, for instance.

Today, there is a range of modern treatments out there that help to prolong the life of wood. Think about the look of the whole property when picking products. For example, do you want your front door to match your cladding; would you like your internal doors to complement your kitchen? Also consider how the material will weather over time, especially if you're positioned in a location with harsh conditions, such as beside the sea. "American Black walnut should really only be used in sheltered or semi-exposed positions," says Elizabeth. "Oak and iroko are both great open to nature. Correct maintenance is the only way to ensure performance."

Above: JB Kind's Aurora Glazed retro style sunshine door, with clear glass; supplied primed ready for a top coat. £183 per door

PERFORMANCE

In the past, external doors and windows constituted a notorious weak spot in a building's thermal envelope, allowing precious heat to leak out of the home. Nowadays, there are strict rules regarding the efficiency of new units, which need to be in accordance with Approved Document L of the Building Regs. The amount of warmth that can escape through a structural element is measured in U-values – the lower the number, the better the efficiency. The rules stipulate that fenestration must be no greater than 2.0 W/m²K in new builds and 1.8 W/m²K in replacement units on renovations.

Correct installation is just as important as the credentials of the product itself when it comes to performance – there's no point investing in an all bells-and-whistles unit if it's fitted incorrectly. Also check you've got the right seals around doors and that there are no potential weak spots on the leaf itself (eg letterboxes or catflaps).

Security is another key consideration – look for products with Secured by Design status, which is a police approved accreditation. Another standard to keep an eye out for when it comes to fenestration is units produced to Wood Window Alliance quality –



Kloeber's timber Kustomfold bifold doors in engineered hardwood, finished in old pine stain with a standard threshold. Priced from £2,599 for a 2,990mm (W) x 2,090mm (H) set with three door configuration, as seen here (excluding delivery and fitting)

these are guaranteed to be manufactured to a high grade and can last almost double the lifetime of most PVCu goods.

While internal doors obviously don't require the same performance criteria as anything positioned on the external walls, there are still rules regarding widths and access. Pocket doors are a good option for smaller rooms and bifolds work wonderfully to shut off or open up large spaces.



COST & MAINTENANCE

As with most building products, the price of doors and windows varies widely, simply because there are so many options available. DIY stores sell front doors with real-wood veneers for less than £100, but you can also invest

over £10,000 in a bespoke, high-end product – it's really down to your individual requirements and budget. Remember that different types of timber come with different price tags, and think about the window glass options that could add to your overall cost (double/triple glazing, low emissivity coatings, gas fillings etc).

PVCu alternatives are bound to be more affordable than their timber cousins, but they won't provide the same service life or environmental credentials. "Timber has been proven to last longer than other materials with the correct upkeep," says Matt Higgs from Kloeber. "Expect to carry out some kind of minor touch up on an external door with a stain every three years or so, and every five years on an opaque painted finish. But if an entrance is covered by a porch it may never need maintenance – it all depends on the exposure to weather and pollutants in the local environment."

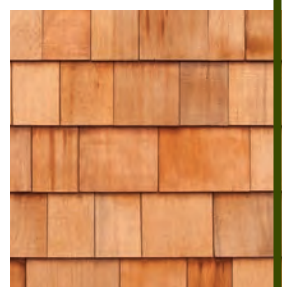
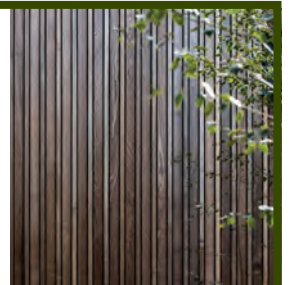
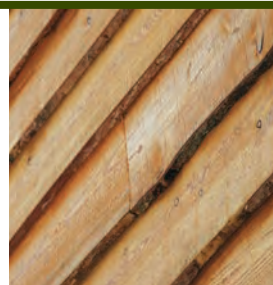
The level of aftercare needed varies from product to product, but the most important thing is to choose units from a trusted supplier whose goods are backed by a manufacturer guarantee. Double check that all elements are covered, including hardware, finish and resistance against rot/fungal infection.

Above left: Double glazed flush casement windows from Dale Windows. Made-to-measure sizes, starting from £800

CONTACTS

Brookeswood Joinery 01538 361955 www.brookeswood.com **Croxford's** 01484 850892 www.croxfords.co.uk **Dale Windows** 0845 652 7399 www.dalewindows.co.uk **JB Kind** 01283 554197 www.jbkind.com **Jeld-Wen** 0845 122 2890 www.jeld-wen.co.uk **Kloeber** 01487 740044 www.kloeber.co.uk **Scotts of Thrapston** 01832 732366 www.scottsofthrapston.co.uk **Urban Front** 01494 778787 www.urbanfront.com **Velfac** 01536 313552 www.velfac.co.uk **Vufold** 01625 442899 www.vufold.co.uk

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Inspiring cladding ideas

From traditional European hardwoods to durable thermally-modified alternatives, there's plenty of choice when it comes to finishing your home's exterior with a striking, timber finish. Get some inspiration for your project with our selection of options



1 Thanks to its strong grain and chocolatey hue, this is an excellent option to boost your home's kerb appeal. **Brimstone ash cladding, £48 per m², www.brimstonewood.co.uk** **2** Featuring frequent knots, this silvery-grey covering will imbue your home with extra character. **Scotlarch, from £17 per m² for sawn boards, www.russwood.com** **3** With a warm honey-coloured hue, this hardwood species is often chosen as an alternative to oak. **Jointed sweet chestnut cladding, from £42 per m², www.vastern.co.uk** **4** This naturally hardwearing option features a tight grain pattern, making it desirable for modern schemes. **Western Red cedar, £POA, www.silvatimber.co.uk** **5** Larch is a popular choice when it comes to softwood cladding, and Siberian varieties are some of the world's strongest. **Siberian larch, £POA, www.silvatimber.co.uk** **6** This product is made from softwood that has undergone a thermal modification process to make it stronger. **Kebony cladding, from £38 per m², www.kebony.com** **7** Due to its structural stability, boards made from this modified material can be sawn with crisp edges – great for contemporary schemes. **Accoya cladding, £40 per m², www.accoya.com** **8** This feathered edge cladding will help you to establish a chic, contemporary look. **Q-clad rebated timber cladding in black, £19.20 per m², www.timber-cladding.co.uk** **9** Offering a service life of up to 60 years, oak comes in array of shades and will develop an attractive silvery patina over time. **Bespoke oak cladding, £60 per m², www.vastern.co.uk**

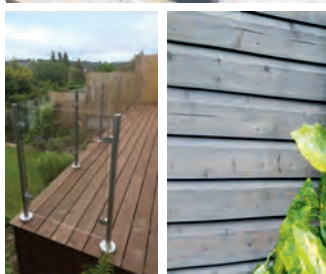


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12

golden rules for timber flooring

There's plenty to consider when specifying wood flooring, from selecting a product that suits your home to applying the correct finish.

Rebecca Foster explains how to get it right

When it comes to flooring, there are few materials that match the warmth and character of wood.

Available in a range of styles, sizes and species, timber is highly prized amongst self builders and renovators as an eye-catching, low-maintenance and long-lasting solution. The right products, properly installed, can add real value to your home and set the tone for your interior decor. Here's what you need to know to ensure you get a high-quality finish.

1 Plan the look carefully

Before specifying any products it's worth assessing whether you want to create a traditional or contemporary look. Timber comes in plenty of hues, from chocolate browns to warm golds. The shade depends not only on the tree species, but the grade of the wood and any decorative effects or finishes you select. Premium products taken from the heartwood provide a uniform colour and will have fewer knots and variations. "A prime grade will give you

a clean, contemporary look," says Peter Keane from The Natural Wood Flooring Company. "Darker shades of wood tend to look more traditional." Goods from the 'rustic' category are likely to feature knots and a prominent grain, which can be handy for camouflaging imperfections.

2 Match the floor to the application

Areas that receive heavy footfall, like hallways and kitchens, require a more durable covering than quieter zones. Hardwoods such as oak and walnut are often specified for the busier spaces, while fir or pine may be adequate in a rarely-used bedroom. Bear in mind that softwoods tend to dent and scratch more easily.

Another consideration is that timber expands in humid environments and contracts when it's cool and dry. How much it moves will depend on the species, moisture content (kiln-dried products are more stable) and where it's laid. "Solid wood isn't suitable for rooms that may experience changes

in temperature and humidity, such as bathrooms and kitchens," says Peter. "Engineered floors cope much better with such conditions as they're made from layers of hardwood and ply that are sandwiched together." These products typically comprise several thicknesses of tangentially-laid plywood, topped by a high-quality hardwood veneer of your choice. They are designed to minimise movement, expanding and contracting relatively little and as a complete floating floor – rather than the individual behaviour you'd get from solid planks.

3 Go for sustainably sourced wood

If you're planning a home with strong green credentials, choosing products that come from an eco-friendly source is vital. For peace of mind, ensure your chosen flooring comes with a seal of approval from either the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC). This guarantees the timber is taken from responsibly-managed sources.

If sustainability is an important focus for you, bamboo could be worth consideration. "It grows faster than hardwood trees and has a self-regenerating root so will continue to replenish itself rather than needing to be replanted," says Chris Elliott from The Bamboo Flooring Company.

4 If you're planning to install underfloor heating (UFH), an engineered solution may be better than solid boards

Because of the close proximity to the heat emitter, solid wood planks – which expand and contract with temperature fluctuations – aren't an ideal match for UFH. Thanks to their robust, multi-layered construction, however, engineered boards provide an excellent partner for these emitters. "The majority of engineered options are perfectly suited to this purpose," says Russell Calder from Havwoods. "Bear in mind that the thickness of the board will affect its thermal resistance, which in turn influences how warm your floors will feel in conjunction with the heating system."

Timber is a natural insulator, so you may need to specify a higher-output setup than if you were fitting a tiled

Left: The pale grey shade of this oak flooring from Kahrs' Smaland range gives the space a stylish, modern vibe. Priced from £102 per m², it features a brushed, hand-scraped finish



Above: This solid Asian walnut flooring, £30 per m² from Leader Floors, features a stained and lacquered finish that gives the wood an attractive, uniform colour

floor. A layer of insulation will need to be installed beneath the covering, either below or as part of the subfloor, depending on its construction. If you have UFH, the thermally protective layer should be positioned beneath the pipework or heated cables to stop warmth travelling downwards.

5 Prolong the life of your wood floors by applying a protective coating

Most timber products are pre-treated in the factory so they can be delivered to site ready to fit. There are three main choices of finish: lacquer, oil and wax. For areas that receive a high footfall, a lacquered coating adds a hardy layer of protection to the surface of the wood. A range of matt and glossy finishes is available, with the latter being popular for modern schemes. The downside is that if the floor is badly scratched, the entire surface needs to be re-sanded and the lacquer re-applied to repair the damage.

Oil and wax penetrate into the material to provide protection from within. As well as establishing a smooth, satin-like finish, this means that if the floor is scratched you can carry out spot repairs in the affected area by sanding and re-applying the finish. But these treatments will need to be re-applied every six months or so. Also, because there is no layer of

protection on top the wood, the surface may wear down quicker.

6 Achieve a high-quality finish by preparing the subfloor correctly

Inadequate prep is a common pitfall when installing timber flooring and a likely cause of problems later on. "Prepare the subfloor by checking it's flat, dry and clean," says Chris. "Use a straight edge or spirit level to check. Lining a wooden subfloor with plywood or a concrete surface with a self-levelling compound will smooth unevenness out." However, bear in mind that this will increase the height of the floor build-up, and is something that will need to be factored into your plans, particularly if you're renovating.

7 Allow time for the planks to acclimatise

When timber boards are transported to site, they may absorb moisture or dry out. It's therefore important that they be given time to acclimatise to your home's environment before being fitted. Some goods will need as little as 24 hours to adjust whereas others may require as long as two weeks, so check with your supplier. If flooring is laid before it's properly acclimatised, gaps may appear between the boards as the material settles.

8 Don't fit it too early in your build schedule

To achieve a high-quality finish and rule out the chance of damage, don't start laying timber coverings until the plastering and rendering work has been completed. The skirting should be fitted after the flooring to attain a neat, professional look. "Once the planks have been laid, check the finished floor height to see if the bottoms of doors need to be shaved down," says Alex Litcan from Kahrs.

9 If you're not sure about DIY installation, call the professionals in

Many varieties of wood flooring are straightforward for competent DIYers to fit. But it may be a false economy to try and save money by laying it yourself if a bad installation job detracts from the wood's characterful appeal. Click-fit engineered solutions can be laid onto a waterproof membrane that sits above the subfloor. This can be a fairly

straightforward task, especially in a single room. If you're tackling a whole storey, the speed and convenience of pro fitting might still be a good choice. Solid boards tend to be a little trickier, as the planks are either glued to the concrete subfloor or nailed to wooden floor joists. So you might be better off calling in a professional carpenter or joiner to undertake this task for you.

10 Be sure to check the 'wear layer' thickness

One of the main attractions of a solid wood surface is that it can be sanded down multiple times over its lifespan to maintain a smooth, high-quality finish. It's recommended that you carry out this form of upkeep every seven years or so. The number of times an engineered solution can be re-sanded depends on the thickness of the hardwood strip on the board's surface. For high-quality planks that can be re-sanded several times, look for products with a wear layer of at least 7mm. Those with a veneer of 3mm or less may not be able to be sanded down at all. If you're unsure, check with your manufacturer.

11 Never clean your timber floors with an unsuitable detergent

On a day-to-day basis, vacuuming or sweeping wood floors to remove any abrasive particles will help to keep them in top-notch condition. "For deeper cleans, ensure that any products used are pH neutral and suitable for use with a natural surface," says Alex from Kahrs. "Some general household cleaners could potentially damage the wood."

12 Don't write off timber coverings because you think your budget can't stretch to solid planks

Solid wood flooring can sometimes come with a hefty price tag, ranging from £30 per m² to £100 per m² depending on the species and grade of the wood – but the quality and longevity of the finish could add value to your home. However, technical innovation in the sector means a wide selection of engineered varieties present a more affordable option. These tend to cost upwards of £20 per m², and can offer a service life of 30 years if they're well cared for.

CONTACTS

Havwoods 01524 737000 www.havwoods.co.uk **Kahrs** 023 9245 3045 www.kahrs.co.uk

Leader Floors 01429 241270 www.leaderfloors.co.uk

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This 2.4m-tall Burghley summerhouse by Scots of Thrapston features European redwood cladding and a cedar shingle roof. **Prices start from £6,100 (with a lead-effect glass fibre roof) or from £7,650 with shingles including VAT, delivery and installation within 150 miles of Thrapston, scottsofthrapston.co.uk**



Round Wood of Mayfield supplied and erected this stunning four-bay garage with first floor above. It features a traditional frame, joinery and weatherboarding all in oak, along with handmade tiles. **A full service solution would start at around £75,000 for a project of this scale, but would depend on precise requirements, roundwood.com**

The Kenchester is one of the most popular designs in Oakwrights' standard garage range. This three-bay version features an enclosed zone with softwood doors and weatherboarding. **It cost £11,576 on a supply and assemble basis, countrybuildings.co.uk**



Oak Designs Co created this two-bay, open-plan gazebo – with fully hipped clay tiled roof – and T-shaped colonnade pergola, which provide an excellent space for summer entertaining and al fresco dining. **A similar gazebo and pergola combination would start from around £13,000, oak-designs.co.uk**



This bespoke reclaimed oak and brick storehouse by Oakmasters is the perfect complement to the heritage-inspired new build house next door. **A similar design made from green oak would cost around £3,900, oakmasters.co.uk**

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100



115



107



104



122

100 DURABLE BY DESIGN

Architect Julian Owen shares his expert tips for creating a low-maintenance home

104 DEMOLISH & REBUILD

Tim Doherty weighs up the key considerations when it comes to knocking down a property and starting over

107 RESTORING PERIOD FEATURES

Conservation expert Alan Tierney reveals how a careful approach to reviving heritage design elements can add value and character in spades

111 DEALING WITH PLANNING REJECTIONS

With the help of four real-life case studies, Mike Dade uncovers how to proceed from an application's refusal

115 HOW TO GET REALISTIC QUOTES FROM BUILDERS

Demystify the process of obtaining and understanding prices with Mike Hardwick's guide to going out to tender

PLUS: YOUR QUESTIONS ANSWERED (PAGE 118), SELF BUILD MORTGAGES (PAGE 121) & PLOT WATCH (PAGE 122) >>



Above & above right: Breathable building products, such as the lime render used on this project by architects PAD Studio, help combat problems caused by movement and poor ventilation

All buildings need loving care and attention to keep them in good condition, especially in the abrasive and unpredictable UK climate, which subjects them to frequent changes in temperature and humidity. Some building materials expand when heated or their moisture content increases; others gradually crumble with repeated freezing and thawing and can erode in exposed areas by a continual blasting from wind and rain. Inside our homes, the contents are being worn down by their occupants – what you could call human attrition.

If you intend to build a low-maintenance house, the deciding factors will be the materials and components used, how well they are designed and how they interact. The resolution to reduce the maintenance burden should be taken quite early in the design process, because there is a financial trade-off to be made between the investment in the build quality and the money that might be saved over the life of the house. Unfortunately, in the recent past,

Durable by design

By using the right materials and detailing them in the correct way, you can create a dwelling with a long lifespan and minimal maintenance, says architect **Julian Owen**



the UK construction industry has had a poor record in this respect, usually because the developers that build new houses do not expect to have to look after them once completed. This means that as long as the building looks great before it is sold, the heavy burden of maintaining it afterwards is basically not their problem.

If, however, you are building or altering your own home and expect to live in it for many years to come, it is well worth putting time and money

into making it durable. There are some straightforward principles that will help to reduce the expense of looking after a building, often paying back the extra cost many times over.

Breathable houses

An interesting aspect of building science is how moisture moves through the construction of a house from inside to outside, and the problems that result when it gets trapped. Traditional buildings were





draughty and accepted as such. The occupants were harder than us and the lower temperatures that resulted from warm air escaping up a chimney and through gaps in the doors and windows was not a source of concern.

By comparison, new houses are tightly sealed, highly insulated boxes designed to ensure a consistent and comfortable temperature in winter. The occupants living in a property generate a lot of moisture, which was easily removed in those draughty old houses, but now has less chance to escape. The result is that warm, wet air condenses into water within the depths of the construction when it cools, and if it is allowed to build up it can cause rot and decay.

There are two main ways that this can be stopped. One is to install a relatively complex system of mechanical extract ducts and fans to remove the moist air before it gets into the structure, but this will need constant maintenance and the kit will have to be replaced every decade or so. The alternative is to design the building to breathe naturally – that

is, to choose materials such as lime plaster, mortar and render that allow any moisture to evaporate and travel to the outside of the walls over time. Properties with cavity walls, including those with a timber superstructure, are required to have ventilation to the outside flowing between the leaves to help this process.

Weatherproofing the exterior

Many striking buildings make a virtue of defying nature. The look that is currently so popular features clean, sharp, uncompromising edges, with smooth flat surfaces and a uniform appearance. There is nothing wrong with this approach, but unless the materials are carefully chosen and the construction details are intelligently designed and built, there is a much higher risk of them losing their pristine appearance over time.

In the 20th century, many of the stark buildings of the Modern Movement were built from concrete, which is basically a man-made version of stone. Most of the early, leading examples of blocks of flats and



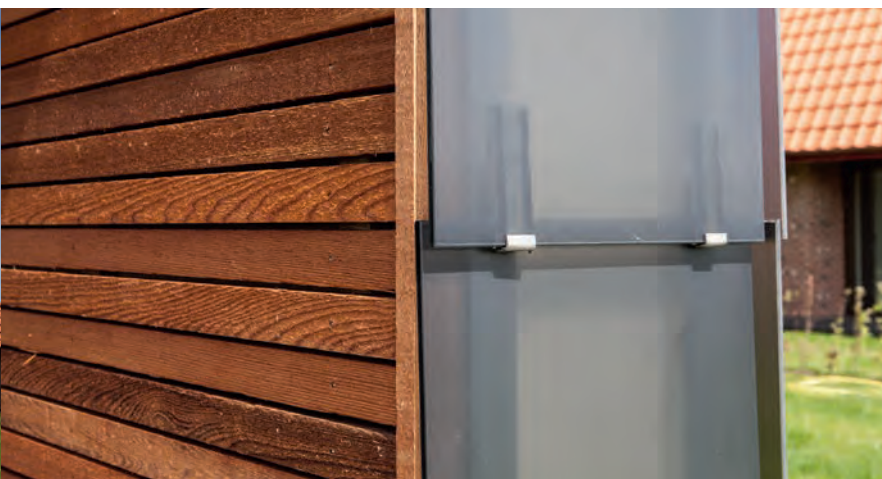
Far left, left & below: Manufacturers have developed low-maintenance alternatives to traditional building products. These homes feature Marley Eternit's Cedral cladding, a fibre-cement alternative to timber weatherboarding which comes pre-coloured or with a woodstain effect



offices built in this style were in southern Europe, where the climate is drier. When they were copied in rainy old Britain, without making adjustments for prolonged wet weather, the resulting buildings became unattractive eyesores because the concrete surface demanded a level of maintenance that was unaffordable. Concrete panels began to be used successfully once architects and builders learnt to detail the buildings in a way that controls the water as it flows on to and over them, as well as to use finishes that did not rely on being smooth and unblemished.

When building on a small scale, if natural or traditional materials are properly used and respected, less upkeep will be needed. A perfect illustration of this is timber cladding. For many years, boards were painted, stained or varnished to give them what was considered the correct appearance. This was fine for builders and occupants in the past, because labour was cheap and the regular recoating required was not very costly. Now, labour is more expensive and the maintenance required can be dramatically reduced by using timber that has no finish at all. For example, if it is correctly detailed, untreated Western Red cedar can potentially last for up to

Left & far left: Danish practice Arkitema Architects designed this experimental house as the ultimate maintenance-free home, with raised foundations for all-round ventilation, deep window recesses to repel the weather and a 'shield' of glass cladding with no joints



KEY CONSIDERATIONS FOR A LOW-MAINTENANCE BUILDING ENVELOPE

Budget Compare the cost of a material or individual component to the money that will be saved in reduced upkeep over the lifespan of the building.

Environment Assess the local microclimate and the likely extremes of any weather conditions.

Materials Select exterior products that will withstand or flourish in the prevailing weather conditions.

Construction Make sure the structural drawings are correctly designed and followed in the build.

Repair and replacement It's best to prepare a detailed maintenance schedule from the beginning.



Above: Low-maintenance options can be more expensive, but are worth the long-term investment because of their durability and longevity. Aluminium-framed glazing is a good example of this; here, two sets of Sunflex SF5 bifold doors are matched with full height windows from ID Systems

60 years. If the same board is oiled, stained or painted it can last just as long but will need regular recoating to protect it and keep it looking smart. The difference is you have to accept that the unfinished timber will go a grey mottled colour as it weathers.

Get the detailing right

There are modern products and materials that are designed to offer low maintenance, particularly PVCu

JULIAN OWEN

Julian Owen is an East Midlands-based chartered architect and author of several books on self build and house alterations. His publications include *Self Build*, *Home Extension Design* and *Kit and Modern*

***Timber Frame homes*. He's also the founder of the ASBA Architects network. To find out more visit www.asba-architects.org.**



This image & below: Self builder Etienne Patterson specified Eurocell's Modus doors and windows in his Hampshire home (he also built the house next door for his parents). The grey PVCu units were chosen for their low-maintenance qualities

doors, windows and fascia boards (which protect the edges of a roof). The same principle of installing them correctly and

investing in the future by using good-quality products applies. Low-cost plastic windows may have an apparent advantage over painted timber at the start but this will be lost if the glazing units fail, the ironmongery starts to stick and the surface discolours within a few years. Well-made aluminium frames are probably the best option for durability but they are relatively expensive.

Once a material has been selected with the right balance between cost and longevity, good construction details are essential to maximise its useful life. A stone or masonry wall will get unsightly staining if it does not have a proper coping stone on top and cills that project, both of which throw rainwater away from the surface, and spread weathering evenly across the whole wall.

The exact opposite is true for a wall of timber boarding. Where there is a large overhang, the boards protected by it will weather more slowly than the unprotected surface lower down; in a short time there will be an unattractive line where the timber changes colour, which is almost impossible to eradicate. So timber board walls should be detailed to have minimal overhangs.

**Schedule of repairs**

Given there is probably no such thing as a no-maintenance building, all the materials and components will need a little love, care and attention at some point. One principle for ensuring low upkeep is to make certain cleaning and repairs are carried out at the right times. Big commercial buildings are run by facilities managers who have highly detailed records of all the things that need to be done to keep them in good nick, including a record of how often each element needs to be inspected and overhauled, called its 'maintenance cycle'. Compiling your own version of this in the form of a file of all the upkeep needed and when it should happen will reduce the cost of keeping your house in tip-top condition. For extra comfort, ensure you have copies of all the guarantees issued by your manufacturers and installers so you can get any problems fixed quickly and without cost.

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Knocking down a property to build your dream home in its place could be the best route to finding your ideal patch of land. **Tim Doherty** explains why

Demolish & rebuild



Last year, one of my clients was planning a major refurbishment of their home – a quintessential detached country cottage in the heart of the Sussex countryside with stables, views and a large annexed barn. Although the building wasn't listed, it was subject to strict planning regulations about size and acceptable modifications given the location's status as an area of outstanding natural beauty (AONB). Reworking the interior for modern living would have involved some considerable structural change; the dismantling and rebuild of a chimney, a basement under a small extension, all new building services, windows etc – but fundamentally a compromise on room layouts. The project would have cost somewhere in the region of £450,000; however, demolishing the property and rebuilding a new one in its place would only set them back about £50,000 more.

This is by no means an isolated case; sometimes the scheme economics simply tip in favour of literally starting



All images: Max and Diana Aiken have built a stunning contemporary two-bedroom home on more or less the same footprint as the 1950s bungalow (top left) that previously sat on the plot. The site lies within a green belt and has a slope, as well as impressive views towards a valley. Andrew Wood Associates (www.andrewwoodassociates.co.uk) prepared the plans and secured planning consent, and Designscape Architects (www.dscape.co.uk) developed the scheme through the detailed design and construction phases. The budget was £496,000 and the house was completed in December 2014

again from scratch, no matter how perverse the proposition may seem. Here I'm going to look into how to tell if this is the best course of action.

Benefits

Finding an unencumbered greenfield site with planning consent is a tough job and

even the most dedicated self builders can find this a demoralising and intense task. You're more likely to find infill or backland plots, usually part of someone's garden and possibly with restrictions that may not match your aspirations. This makes the notion of replacing an existing dwelling a very real alternative and probably accounts for a significant proportion of self build projects.

Building in the countryside (ie outside of current town and recognised village settlements) requires a special

reason and is therefore usually only secured by way of an agricultural tie or where there is justifiable need for the rural economy. However, replacing countryside properties on a straight swap basis provides opportunity where there are very few other building and development options.

Part of the attraction of this route is that residential use on the site is already established. Unless the building has been derelict for over 10 years, even if it's currently empty, it should still retain its habitation status – plus there's

pressure on local authorities to ensure vacant homes are brought back into service by whatever means possible. Older derelict buildings would still constitute a brownfield site (meaning it was previously developed) but more complex planning procedures may be necessary to re-establish a residential connection.

From a project management point of view, you may well be able to live in the existing house while the build takes place – depending on size, replacement footprint and overall site logistics. In addition, there could be savings up for grabs by retaining the existing services, but sometimes these will need upgrading to provide better capacity.

Planning

Local authorities each have their own policies regarding replacement dwellings. Each council prepares its Local Plan based on guidance from the NPPF (National Planning Policy Framework), its own measured housing need and its attitude to architecture, character, culture, design and overall integration – plus there may be some less obvious considerations to take into account.

Most replacement proposals seek to increase the building's size. Policy might restrict this in some way, for instance, by not allowing an increase of more than 50% of the original dwelling. Or there may be a more subjective clause that refers to new building proposals being to a design that matches and reflects the local vernacular. So, like much in planning procedure, applications can be successful (or not) based on officer evaluation, consultee response and sometimes committee opinion. Regardless of the outcome, the most important thing to remember is not to demolish a thing before your consent is approved.

Considerations

Many dysfunctional properties are still valued on the basis of providing some usable accommodation and, no matter how poor, a house is still a house – so you may end up paying above the odds for the plot. Many people take the long view and accept their acquisition cost may be at a premium, but it is the only way to unlock a dwelling to the design and standard they want in an area of their choice.

Some folks take a punt and acquire a site with the ambition to get two or three units from a single plot. Whichever way you look at it, this is really just a case of straightforward property development – sometimes this kind of gamble pays off and other times it doesn't. The trick is not to buy until you are certain about the outcome, and this usually involves an option agreement and the possible sharing of any uplift with the vendor.

Bear in mind that demolition does not come for free, but to help mitigate this, you may be able to save money by salvaging some of the existing materials. You could use brick rubble as a base for your drive and possibly reuse some timber if you can be bothered to de-nail it and clean it up. It's a good idea to properly calculate the costs of exporting waste off site to landfill and make a sensible allowance for exceptional items like asbestos cement roofs, which have compliance procedures attached.

Always remove the old foundations and prepare for the new ones to be deeper to compensate for some site instability where the property stood. If there was a cellar, it will need to be properly filled with compacted layers.

SITE APPRAISAL CHECKLIST

1 Acquisition or opening value Be clear about the price to be paid and be sure about comparative values. Or, where you already own the site (eg if it is your existing home), take professional advice to establish a base value now.

2 Permitted development Be aware that some properties will have unused permitted development opportunities (outbuildings etc), which could be lost if you apply to rebuild. Exercising these before you commence design negotiations could give you a bigger property in the future.

3 Local precedent It's a good idea to identify what has already been done in the neighbourhood. Sometimes an early pioneer has established some principles that can be used to argue your position. Replacement dwellings can often be the start of wider overall regeneration.

4 Pre-application discussions It's a good idea to seek an informal opinion from the planning department. This will help steer your thinking, but you may need to get some sketches done first for this to have value.

5 Schematic designs Have some ideas prepared based upon the pre-app guidance; the more detailed these are, the better.

6 Design valuation Have your plans professionally valued to confirm the target uplift in the new finished property's market price.

7 Detailed planning application Submit and secure detailed consent. Do not demolish anything until this is approved in writing.

8 Building control & detailed costings Prepare these, including any structural engineering, and have a concise price breakdown in place.

9 Valuation Sometimes details of the scheme will change as you secure formal consent, so be sure about the end value versus build costs.

10 Demolition & build programme Only when you're satisfied with the financial equation, should you start the works in earnest.

You may plan to reuse the drains only to find they are inadequate and need wholesale replacement. New service supplies are often required, especially in cases where you need to rely on your own metered water source from a main with adequate capacity. There are also some concessions when refurbishing an existing house in terms of building control; however, the moment the dwelling becomes a new replacement, all current regulations will apply. This is no bad thing, but sometimes this catches people out regarding access and turning spaces for the fire brigade as just one example.

Finally, be warned that where dwellings are replaced with fresh new contemporary alternatives, your neighbours may well consider the same in years to come. This could lead to successive building operations in and around your area for some time until the whole street is complete.

TIM DOHERTY



Tim Doherty was the founding MD of the National Self Build & Renovation Centre and a founding member of NaCSBA. He now runs Dobanti Property Consultants (www.dobanti.com), a specialist surveying and building consultancy providing support to both the residential and commercial sectors.

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Restoring period features

Uncovering an original detail could create a stunning focal point in your newly renovated house, but taking the incorrect approach to restoring it could damage its historic value.

Alan Tierney explains how to reinstate heritage elements without ruining them



As part of the renovation of this mid-18th century cottage, the designers at Phillips Tracey Architecture (www.phillipstracey.com) were keen to preserve the original main chimney stack. The exposed brickwork (right) was left on show and white-washed with paint to create a striking visual feature

Much of the value, interest and inherent pleasure associated with a period building lies in its history and character. This means that most people taking on the refurbishment or renovation of an old building will endeavour to recover or restore the property's period features; but this isn't limited to just original details – high quality additions or alterations that have been made during its long life may well be worth preserving. Here, I'll be revealing what to look for and how to make the most of what you find.

General principles

Firstly, always proceed with caution – old fabric can be delicate and fragile, especially if it's been neglected in the past. If you aren't careful, you could end up causing damage during the investigation or even when you're attempting to repair. It's best to go slow; be prepared to pause and reconsider your approach, and get advice or assistance from experts when necessary.

The second thing to remember is that signs of age (including wear and tear, patina and lack of uniformity) are part of what gives period features their character. It's best not to over-repair or try to make details new and shiny – less is more in most cases.

Try to understand how the building was originally finished and follow that lead to get the best result – was it painted, stained, waxed or simply left unfinished, for instance? If the original finish survives, it might be best to leave it as it is, even if it is damaged or imperfect.

Finally, be aware that any work affecting the character of a listed building will require listed building consent. This

could apply to various works, so it's best to consult the local conservation officer before you start.

Floors

Original floors often survive, sometimes hidden under carpets, vinyl or even cement screed. If the covering can be removed without causing damage, a usable floor can frequently be recovered. Older solid surfaces are often made of stone, brick or quarry tiles and, if they are in a reasonable condition, they might need no more than a thorough scrub and careful repointing with lime mortar. Bear in mind that



Kaner Olette Architects (www.kanerolette.co.uk) made a series of interventions to modernise this grade II listed watermill in Hampshire. The existing elm boards were sanded and re-sealed to retain their characterful effect in this first-storey studio space



Above: Egon Walesch and Richard Goodwin were keen to retain the period charm of their Edwardian terraced house in London. The traditional moulding on the ceiling works in harmony with the decor scheme

it's not possible to insulate an old solid floor – this is probably why it was covered in the first place.

Victorian encaustic tiles make beautiful, colourful floors (often found in hallways) but they are easily damaged and difficult to repair. However, there are a few specialist manufacturers out there who have rediscovered the technique and make replacement tiles. Even if the units are unharmed, they may need a lot of careful cleaning to be restored to their former glory – avoid abrasive or caustic cleaning materials, as these can cause irreparable damage.

Most 19th century wooden floors are made of high quality, uniform softwood boards. These can be sanded, oiled or even painted to create an attractive surface. If some boards are damaged or worm-eaten it should be possible to selectively lift units and swap them around to hide the damaged ones (or replacements, if necessary) under furniture. Suspended timber ground floors can often be lifted with care to repair joists and pack breathable insulation in-between them.

The upper floors of older houses might still have thick, wide oak or elm boards. They will inevitably show the signs of age, but are extremely durable and, with reasonable care, are capable of lasting indefinitely. The boards will be irregular because each one will have been cut and shaped

to fit its particular space. Because of this, any attempt to lift the boards risks considerable damage. It can be almost impossible to replace them exactly in the right position – and they won't fit anywhere else. This is why it's vital to have any repairs carried out in situ by a skilled carpenter.

Joists

Many period buildings – from high status medieval houses to humble Victorian cottages – were built with exposed ceiling joists; this part of the room was often the underside of the floorboards above. Modern plasterboard versions can sometimes diminish the character of the room and reduce the already limited ceiling height.

You may need to remove a section of ceiling to assess the quality of the joists. If they were originally intended to be seen, they were often decorated with chamfers or mouldings and would make an attractive period feature if re-exposed. The underside of floorboards are unlikely to be an appropriate ceiling for modern living, so form lime or clay plastered ceiling panels between the joists.

Panelling & joinery

Timber panelling was a key feature of houses from the 16th to 19th centuries and (where it survives) makes a notable contribution to their character. Panelling will often have been installed with alterations at some time during the property's lifetime, which means that some dwellings have a range of different styles and periods; these alterations are an important part of the history of the house. Bear in mind that the finish will have changed over time – the earliest oak panelling was left untreated; later it was stained and waxed; and then softwood panelling from the 18th century onwards was always painted.

Repairs to panelling are relatively straightforward for a skilled joiner; but it's important to understand that the panels themselves are intentionally loose fitted within their framework to allow for dimensional movement. If they're fixed or become stuck they will tend to crack.

High quality softwood joinery was a feature of pre-20th century houses, which was later superseded by a Modernist desire for clean lines and flat surfaces. Panelled doors, turned balusters and mouldings were often boarded over, so can easily be uncovered in many cases. These details were always painted, so vinyl paints should be avoided when repainting – linseed oil, acrylic or even clay paint can work well.

Windows

The style of windows makes a major contribution to the look of a period house. Unfortunately, original units have often been replaced with poor quality timber, PVCu or aluminium. This is particularly problematic in terraces or groups of buildings that have a unified architectural style.

If any original windows have survived, they should be retained and repaired if at all possible, including any old glass. The timber used for windows before the 20th century was of exceptional quality and highly durable. Nevertheless, they often suffer from some decay as a result of poor care and maintenance. The damage is usually very limited and easily repaired by a good joiner or a specialist company, who can also sympathetically draught-proof windows to improve energy efficiency.



Top: Charlie Walker transformed this stone cottage in Yorkshire to provide a new home for his mother, Sylvia. The internal walls, floors and ceilings were removed, so you could see right through from the ground floor up to the roof beams. Inset: Charlie decided to retain the property's original staircase and cover the uneven steps with oak treads. The plasterwork has been cut back to the original solid profiles to achieve a neat finish

you may need to carefully strip away modern paint layers and redecorate to pick out the features.

Fireplaces

Large open fireplaces that burnt loads of wood were the norm in many houses in the past. However, they were inefficient, so eventually became unfashionable. They were often filled in with smaller coal fires, which in turn were boarded over when central heating arrived.

Carefully investigate behind modern fireplaces or boarded up chimney breasts to potentially reveal an iron art deco fireplace, ornate Victorian tiled surround, the remains of a Georgian range or a large inglenook.

Decorative plasterwork

Cornices, mouldings and ceiling roses are typical features of 18th and 19th century houses, which were often damaged by later alterations, penetrating damp or water leaks. Older work was carried out in situ from scratch, so any repair is a job for a skilled craftsman.

Later on, the use of prefabricated moulded elements became widespread – these are more straightforward to repair or replace if the appropriate pattern can be correctly identified. Sometimes all that is needed is to remove the newer boarding to uncover mouldings; alternatively,

TOP 10 FEATURES TO RESTORE

Floors Look for hidden solid or wooden surfaces.

Windows Try to retain, if possible (including glass) and consider reinstating the original style if they've been lost.

Panelling Be careful with repairs and reinstate the original finish.

Doors Remove the boards that are hiding panelled doors and carefully repair any boarded entrances.

Fireplaces Investigate boarded up fireplaces with care and beware of structural issues, ventilation and draughts.

Joists Be aware that good quality joists may be hidden by modern ceilings; plaster between the joists to maintain.

Decorative plasterwork Work to uncover, repair or reinstate, and pick out detail during decoration works.

Brasswork Even the most tarnished brasswork will eventually regain its original shine with enough effort.

Ironmongery This was usually painted, but try to identify the previous finish; if unpainted, Liberon Iron Paste will give it a lift (www.liberon.co.uk).

Architectural details Reinstall or repair decorative details, such as finials, barge boards, architraves, string courses etc.

Unveiling any of these would reinstate a fine feature, but it's important to consider the impact on draughts and energy efficiency, as well as the need to maintain ventilation of the chimney stack and the possible structural implication of removing later masonry fill.

The walls and fireplace in this period property have been stripped back as part of the restoration process



ALAN TIERNEY



Alan Tierney is a period property consultant and conservation specialist. He runs Picketts Historic Building Conservation (www.pickettsconservation.co.uk), which offers hands-on advice to owners of heritage homes.



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A planning refusal doesn't have to mean the end of the road for your dream home project. **Mike Dade** looks at four enlightening case studies that will help you decide on the best route forward

With all the hard work and emotion that gets poured into designing your dream home, it can be immensely frustrating to be faced with a refusal of planning permission. The good news, though, is that sometimes you can adjust your scheme to address objections and resubmit a scheme that stands a better chance of success. In other situations, there may be no way forward with the council – in which case there's the option of lodging an appeal.

How to deal with a refusal

The best way to deal with your application being turned down will vary from case to case. So here I'm going to explain the basics of refusals, resubmissions and appeals.

An application can be rejected either by the local authority's planning officers, under so-called delegated powers, or by the planning committee (presided over by the councillors). In the latter case, politics can play a significant role in whether you'll be granted approval.

Either way, a refusal notice must set out the reasons permission has been withheld. The first step when your

What to do if... your planning application is rejected

project is rejected, therefore, is to look carefully at the issues and see whether you can address them. If you think adjustments could be made to the design or layout to accommodate these concerns, discuss them with your planning case officer and try to get an idea of whether a resubmission might succeed.

If you do decide to resubmit, you will get a free go with no additional fee to pay the council. Likewise, there's no charge for an appeal – although given the last resort nature of this approach, you may well want to employ a planning consultant to help you, and you'll of course need to pay for their time and expertise.

The time to decide written appeals is currently running at around five to six months from submission to decisions for new houses, and 14 weeks for extensions and garden outbuildings (technically known as householder appeals).

These real-life scenarios that will help you get a handle on how to manage your planning appeal:

Case study: Brian Howell's rural plot

About 10 years ago, Brian Howell bought a large piece of land situated just outside a village. The site came with a residential caravan on it. Initially he applied for permission to replace it with a large house, but was refused and an appeal failed. Brian then sited a much larger residential caravan on the site. A few years later, he applied once more to remove the caravan and erect a new home. Again, this was refused and an appeal failed. Undaunted, last year he



geared up for yet another application. Local policies had changed and the council had a housing land supply shortfall. Brian's latest attempt at gaining consent was narrowly defeated at planning committee and a third appeal ensued. This time it was successful. The inspector handling the case felt that a new, permanent dwelling was an acceptable alternative to a large mobile home, and would be more in keeping with the village and nearby conservation area. It was a triumph for common sense, and a good result bearing in mind the past appeal failures.

Case study: The Henshalls' side garden plot

The garden of their semi-detached, village edge house seemed to offer John and Chris Henshall the perfect opportunity to build a new home. Yet despite being within 100m of the settlement's centre, pub and school, it lay just outside the village development boundary set out in both the Local Plan and Neighbourhood Plan.

There was a chink of light, however, due to the fact that the council hadn't earmarked a sufficient five-year housing land supply. In practice this meant that its housing policies, including those prescribing the village development boundaries, should be considered out of date and of limited relevance. In this situation, national policy indicates a presumption in favour of sustainable development is supposed to prevail and permission be



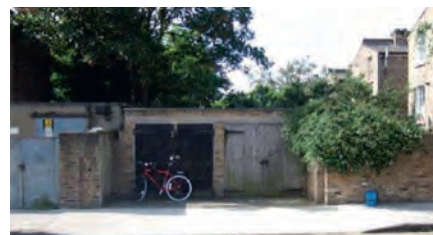
approved unless there are significant issues with the scheme. John and Chris felt the location was sustainable and there were good prospects for success with an application.

The couple felt the key issue was to establish the principle that something could be built on the plot, so they decided to make an outline planning application, with the aim of moving on to a detailed design should that succeed. Unfortunately, they ran into a strong objection from the parish council, which contended that, as the plot was outside the village boundary, it should be refused. A new house would, they

thought, harm the character of the settlement and encroach into the countryside. The planning officer took the same view and the application was refused. As the issue was one of principle, there was no scope to negotiate, so the Henshalls opted for an appeal.

This was a fairly straightforward policy situation, and it was no surprise when the appeal decision came down firmly on their side. The inspector agreed the location was sustainable and that, as John and Chris's existing home was farther from the village than the plot, a new house wouldn't encroach into the countryside. He also rejected concerns about conflicts with the Neighbourhood Plan. So, a positive outcome but arguably one that should never have had to go to appeal in the first place.

Case study: Janet Buttler's urban infill



When Janet Buttler bought a rundown pair of garages on a small plot in a north London conservation area, she was keen to follow the example of other self builders in the borough. Although there was no current planning permission in place, Janet thought knocking them down in favour of a well-designed house would improve the streetscene and thus support its heritage status.

Detailed plans were prepared by an architect, who thought that a contemporary style would work very well alongside the nearby Edwardian terraced houses.

The problem was that the council's conservation officer disagreed, claiming the design was out of keeping, the plot too small and that the new house would adversely impact neighbours by blocking light and appearing overbearing.

After the initial application was refused, Janet had the plans amended in a bid to take account of these factors.

The revised scheme fared little better, however, with the council nit-picking about various aspects of the design. Despite further adjustments of the course of the resubmission, the scheme was again rejected.

Janet felt she'd got as far as she could with the council and decided to appeal – but it didn't go to plan. Despite a clear, well-considered argument showing that the design would sit comfortably in the setting without causing issues for neighbours, the inspector could not be swayed. Fundamentally, he felt the plot was too small and that virtually any development on it would be out of keeping with the sensitive conservation area surroundings.

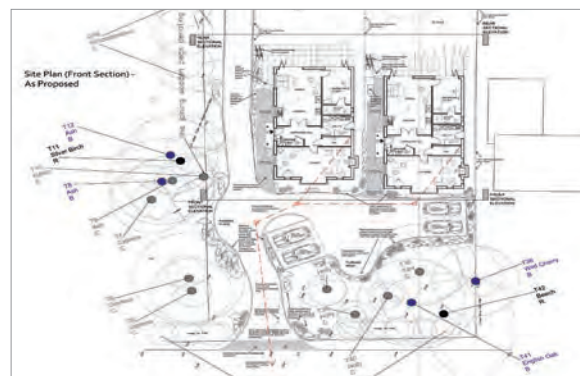
Sometimes there's nothing you can do, and with no way around the in-principle appeal rejection, Janet was unfortunately obliged to draw a line under the situation and call a halt to her plans for the site.

Case study: Andy & Steve Jackson's suburban plots

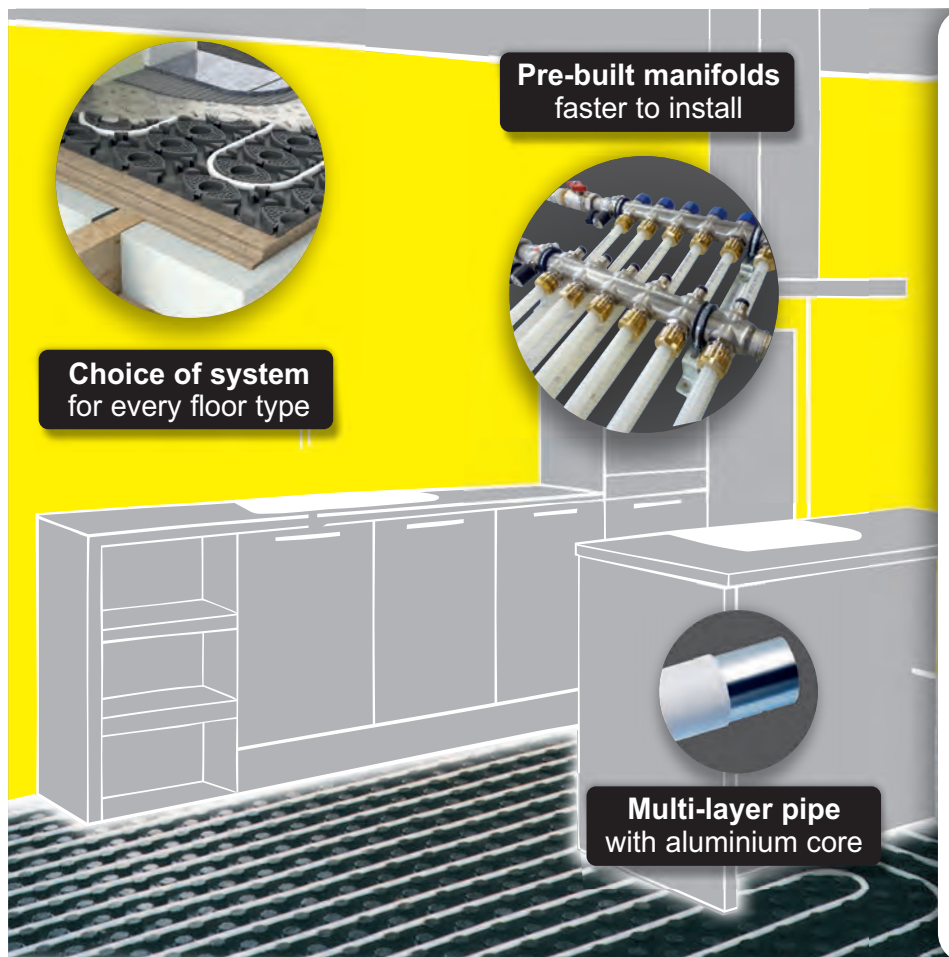
Brothers Andy and Steve Jackson own a house on the edge of a market town. It's in a leafy suburban street with detached houses, which for the most part front onto the street. Their home is an exception, being set about 80m back from the road in a wide plot. The land falls away from the road, and there's a dense roadside hedge, making the huge front garden area virtually invisible from the road.

Andy and Steve wanted to get permission to create two houses on the road frontage, with a new drive running to their existing home behind. Working with an architect and planning consultant, they drew up a detailed design that made good use of the space and took into account key factors such as preserving the best trees on the site and the amenities of neighbouring properties.

Their application ran into objections from the local amenity society and adjoining neighbours, and was refused on the grounds that the two houses would be out of keeping and harmful to the street scene.



Given that the new properties would be set well below street level, and largely screened by the frontage hedge, this reason didn't make any sense. Andy and Steve's planning consultant suggested getting the architect to produce some illustrations of the street scene, and with these looking entirely acceptable, recommended an appeal. This, thankfully, was successful and the two houses are now under construction.



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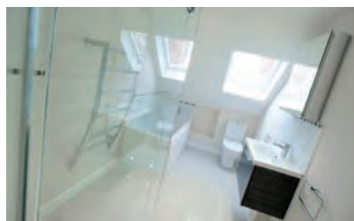
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How to get realistic quotes from builders

Mike Hardwick explains why the prices you call in from contractors can differ – and what you need to know to get an accurate figure for all the works involved in your project

Whether it's for a complete house build or a job undertaken by an individual trade, gathering quotes is a time-consuming but necessary part of your project.

Simply accepting the first price you get from a general builder is a dangerous game because there's a raft of reasons why prices can vary. There will always be a difference between quotes for the same work, regardless of what kind of scheme you're tackling – be it a new home or a simple extension. This month I'm looking at how to approach the process to ensure that you get the best possible value for money.

Estimate or quote?

There's a lot of confusion about the terminology used for pricing a job. To be clear, an estimate is just that: an educated but quickly reckoned and non-binding guess of what a job might cost. Estimates are common on renovation work where the full extent of work that needs to be done might not be obvious at first glance, and they can vary depending on what happens as the job progresses.



A fixed-price quote, meanwhile, is an agreed price based on work shown on a drawing or specification (and the accompanying terms and conditions). So provided nothing changes, that's the final sum you'll pay – but any variations to the spec will attract an 'extra over' cost.

Be clear about the work

The more information you give, the more accurate your quote will be; and it's always better to know the likely costs at the start of the build, rather than suddenly find that extras have been added to the bill. If the full extent of the work wasn't made clear in the original tender process (when you invite quotes), there's a strong chance the resulting additional costs will render the original figure, and therefore your budget, meaningless.

Why do quotes vary so much?

If you send out the same information to several builders and ask for a price, you'll soon find that you get different answers from each. There are several factors at play here, including:

Demand In a rising market, where builders and tradesmen are highly sought after, there is always someone somewhere who will be willing to pay the going rate, even if you don't want to. So it is in the interests of builders to price high. Conversely, during a slump in the construction industry, work can be hard to come by and prices reduce – so some trades will

take anything they can get to keep their business afloat. It may seem counter-intuitive, but a recession is a great time to be a self builder.

Single quotes Contractors know some people only ask for one quote, typically from a local firm they trust. If they are particularly busy, these companies can offer a high quotation with impunity. Should it be accepted by the client, they make a lot of profit; or they might even sub-contract the job to another builder, taking a cut of the profit themselves. If their price is rejected, they will still have plenty of work to get on with elsewhere.

The loss leader We're often drawn to cheap quotes – but beware judging on price alone. Builders know that once they've started a job, it's rare for them to be kicked off, so putting in a low price gets a foot in the door. The problem is, as the project progresses, extras appear for additional work not included in the original quote. Before long, that attractive price is a distant memory and you're way over budget.

There's a huge difference between a cheap quote and one that offers good value for money. If one is clearly lower than the rest, be extra careful before accepting. Alarm bells should start ringing if you see a single-liner offering a price but no supporting detail. Always ask for a full breakdown of the quote so you can see that everything is covered and compare like-with-like. Insist on verifiable references, too – you're in cowboy territory so you need to be vigilant.

Risk Constructing a simple house, comprising four walls and a gable roof, isn't difficult. The big developers do it day-in and day-out, and they build these simple designs for a reason. They are quick and easy to put up and the risk of it going wrong is minimal, maximising the profit.

However, if you are contemplating creating a cutting-edge contemporary eco palace, boasting cantilevered balconies and a brand new structural system that's all the rage in Japan, builders in the UK are going to see nothing but additional risk and will factor this into their prices. If it goes wrong and needs extra work to sort out, it won't be at the expense of their profit margin, so the risk is factored in as a higher quote. Plus, of course, it's a simple fact that complex designs will cost more to build.

Getting a reliable quote

One of the first things to do when pricing up a major project is to get a basic idea of the likely build cost. This service can be offered by your architect, designer or package house company, but will be very crude in the early stages as there is little detail of materials or finishes. Many will simply refer to the build cost tables that can be found in the self build press, such as the online ready-reckoner at www.self-build.co.uk/calculator.

A step up from this is to use an estimating service. Using your plans and a series of algorithms, a basic price for all the materials and labour that will go into your scheme can be established which could then be used as a yardstick against other quotes. *Build It's* own estimating service starts from just £249 – find out more at www.buildit.co.uk/estimate.

The Rolls-Royce solution is to go for a full quantity surveyor (QS) appraisal. This is not cheap, but will give you an accurate costing for your build, listing the materials and work to

DO I NEED TO CALL IN THREE QUOTES?

You'll often be told to call in at least three quotes for any job you've got in mind. That's fine in principle, but in practice it's a time consuming task and you may find the market is so tight that they're all very similar.

If a quote looks reasonable, well thought-through and you're happy with the price, why not accept it? Similarly, and notwithstanding the risk of the single quote route, you may know a good local trade who is the go-to person for a particular type of work, such as ceramic tiling. If so, it's likely they'll give you a decent price because local clients will be comparing notes and word will soon get around if someone has been treated unfavourably.

If you're getting a main contractor to take on the whole job for you, then you should of course obtain quotes from three to five general builders. And if you're going down the individual trades route and don't personally know the workers, calling in at least three is still the most sensible option.

A note of caution: you may well be asked by builders how many others are quoting for the work. Be careful how you answer, as if you say there are 10 others in the running, they might see their chances of getting the job as so remote it's not worth replying. Putting a quote together for a self build or similar project is time consuming and potentially expensive for the builder, especially if they need to hire a QS. So they need to have a realistic chance of winning the work if they're going to bid.

be done. A full QS report might cost between £1,000 and £2,500 but it can be used as the basis for tender documents (minus the prices, of course) so the builder has no excuses for missing out vital work in his quote.

Although it might seem expensive, getting this right from the outset can save you a lot of money in the long run, as it will quickly identify any elements of the contractor's price that are obviously too high.

No-one works for free

While we would all love to get the lowest possible quotations, remember everyone who works on your project is there to make a profit out of you. This is how the industry works, and it's not a bad thing, so you need to accept you're dealing with businesses.

The art is to get the whole scheme completed within your budget (which should be set at a realistic figure but ideally less than the completed house will be worth on the open market). Depending on how the general economy is doing, a builder might make 20% profit or more on your project – although in a recession, I've seen people price at almost no margin at all because they need work simply to stay in business.

Fundamentally, if you get your house built within the budget you've set and to the quality standards you require, who cares who made what profit? Ultimately, you will have the home you want at the price you wanted to pay for it – and the chances are it will already be worth a good deal more than it cost to construct.

Right: The Federation of Master Builders (www.fmb.org.uk) has recently identified growing shortages in skilled trades such as bricklaying, carpentry, roofing and electrics. These kinds of market forces can impact on the rates self builders and renovators receive

MIKE HARDWICK



Mike Hardwick is a self build consultant and project management specialist. He is consumer representative for NaCSBA, and delivers a three-day self build course at Swindon's NSBRC (www.nsbrc.co.uk).



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PLANNING

Mike Dade is a land and planning specialist. He is a contributing editor of *Build It*, a plot hunting expert and author of books on planning and plot issues. He is one half of Speer Dade consultants (www.speerdade.co.uk).



FINANCE

Rachel Pyne is director of financial services at BuildStore (www.buildstore.co.uk). She has worked in self build finance for over 10 years and deals with a diverse portfolio of lenders across the whole market as well as on exclusive self build and renovation mortgage products.



SUSTAINABILITY

Nigel Griffiths is director of the Sustainable Traditional Buildings Alliance (www.stbauk.org) and a consultant working mainly on energy efficiency policy and evaluation. He is the author of the *Haynes Eco House Manual*.



CONSERVATION

Alan Tierney is a historic building consultant and conservation specialist. He runs Picketts Historic Building Conservation (www.pickettsconservation.co.uk), which offers hands-on advice to period property owners.



BUDGETING

Tim Doherty was the founding MD of the National Self Build & Renovation Centre and a founding member of NaCSBA. He runs Dobanti Property Consultants (www.dobanti.com), a specialist surveying & building consultancy for the residential and commercial sectors, including project management and custom build solutions.



PROJECT MANAGEMENT

Mike Hardwick is a self build consultant, project management specialist and NaCSBA's self build representative. He has first hand experience of the processes involved and helps to deliver a three-day course at Swindon's National Self Build and Renovation Centre (www.nsbr.co.uk).



DESIGN

Opinder Liddar is a director at Lapd Architects (www.lapdarchitects.co.uk). The practice specialises in residential projects from extensions to new builds, making him the ideal person to answer all your home design questions.

PROJECT MANAGEMENT

How does the discounted VAT rating work when it comes to renovations?

We are about to undertake a major revamp of our new home that, due to being vacant for over two years, qualifies for a reduced VAT rate of 5%. However, we plan on doing some of the work ourselves. I had assumed that, providing we give suitable evidence of the property previously being empty to the builder's merchant, we would be billed at the discounted cost. Is this the correct approach or is there a mechanism for reclaiming the tax down the line?

Unfortunately the system is not quite as accommodating as that. My understanding is that you won't be able to take advantage of the lower concessionary rate when you provide your own labour. All builder's merchants, as suppliers of materials only, must charge VAT at the prevailing 20% rate at the point of sale, regardless of project circumstance. This is because, no matter how much evidence there may be, the seller cannot guarantee that the products will be used on the qualifying scheme, even if they are delivered to that site. When materials are supplied and fitted by the same organisation, there is no doubt surrounding where they have been used.

For qualifying zero or reduced rates of VAT, it is normally up to you to reclaim the tax spent on materials from HMRC afterwards. However, when it comes to an empty property renovation, you must appoint a contractor who will invoice you at the concessionary amount. They will have to pay VAT at 20% on their materials and bill them to you as part of a supply and fix service at 5% (and then reclaim the rest themselves). In which case, they will want to see indemnities and proof from you that your project qualifies.

In your circumstance, where you plan to provide your own labour, I am afraid I do not know of any method you can use to benefit from a lower rate on material supplies only – though I would recommend contacting HMRC for clarification on this as there's money at stake.



ALEX PRATT

SELF BUILD

How can we ensure that our home will be properly ventilated?

My wife and I are currently self building our new house in East Yorkshire. We are hoping to install PVCu windows, but we're not keen on the look of the optional trickle ventilators so don't want to specify them.

We have investigated the viability of positive input ventilation (PIV) as an alternative and found a company that sells what looks like a suitable setup. It also appears to meet Part F of the Building Regulations with regards to newly built homes. The firm that provides the system advises that it will only work correctly in dwellings that have an air permeability value above three. Our house has a design objective of five. However, by the time we establish our final rating, we will have already installed the windows without trickle ventilation. What could we

do to remedy the situation if we install the glazing, only to find later that the home has scored below three?

Deliberately seeking to make your home less airtight after you've built it is somewhat counter-intuitive, so I would suggest you consider an alternative route. As I understand it, PIV just pushes an overpressure into the house (forcing air out of the home to ensure low humidity). It was designed principally to combat condensation issues. If you are building to the levels of airtightness you suggest, the air will have nowhere to go, so a PIV system will do very little.

My advice would be to opt for a full mechanical ventilation and heat recovery (MVHR) setup. This would negate the need for trickle vents under Part F. MVHR systems are ineffective unless you are looking at designing for at most seven ACH (air changes per hour) at 50pa. I would say they become a necessity at five ACH, and you really don't want to be without one at three ACH or lower – as the house will be very stuffy. A level of five ACH is a typical target for most self builders and is often exceeded by good building practice.

DESIGN

How do we create a glazed wall?

We are converting an old commercial property into a home. It is a brick-clad, single-storey timber frame with a pitched roof. We would like to install a bank of structural windows, approximately 8m wide, but we're unsure how to proceed. What do we need to consider to make this feasible?

As this is such a large area of glazing you will need to specify supporting steel beams (and possibly columns) to bear the weight of the building above. Depending on the type of fenestration used, you may also need the new structure to carry the load of windows – particularly if they are sliding or bi-folding types, which are often top-hung. At 8m, the steelwork required is likely to be quite substantial in depth so you may want to consider splitting up the width into smaller sections. The columns used for this tend to be relatively slender (around 100mm) and this would allow thinner beams – which work well as part of the overall glazed screen.

As it's an existing property going from commercial to residential use, Building Regulations will probably require upgrades to the thermal envelope, especially given how much glass you wish to add. Whether double or triple glazed, windows are relatively poor performers when it comes to retaining heat (compared to a fully-insulated wall, for instance). Therefore, I would suggest looking at introducing as much insulation as is practical to the floor, walls and roof. If you wanted to achieve even greater thermal efficiency, look at improving airtightness by using an internal membrane. While doing this will likely necessitate a mechanical ventilation system to control airflow and avoid condensation issues, the end result will be a better performing home that should be cheaper to run in the long term.

Lastly, consider the orientation of the glazing for privacy and potential overheating issues. If the windows happen to face south, you may need some form of external shading device or internal blinds to minimise heat gain and glare in the height of summer.

PLANNING

Do we need planning consent for the building materials we want to use for the exterior of our new home?

We're in the process of designing our self build scheme. How do product specifications factor into your planning application? Are we required to identify items such as bricks and roof tiles, for example?

External materials form part of any full submission to your local authority for a new dwelling, as the planners are primarily concerned with its outward appearance and how it fits into the setting. There's a possibility the council might give approval if you stipulate in detail the nature of the products you want to use, either on your plans or in an accompanying statement. More often than not, however, they impose a condition on the grant of permission requiring either a specification or actual samples to be agreed at a later date, usually either prior to the works commencing or before they get above slab level.

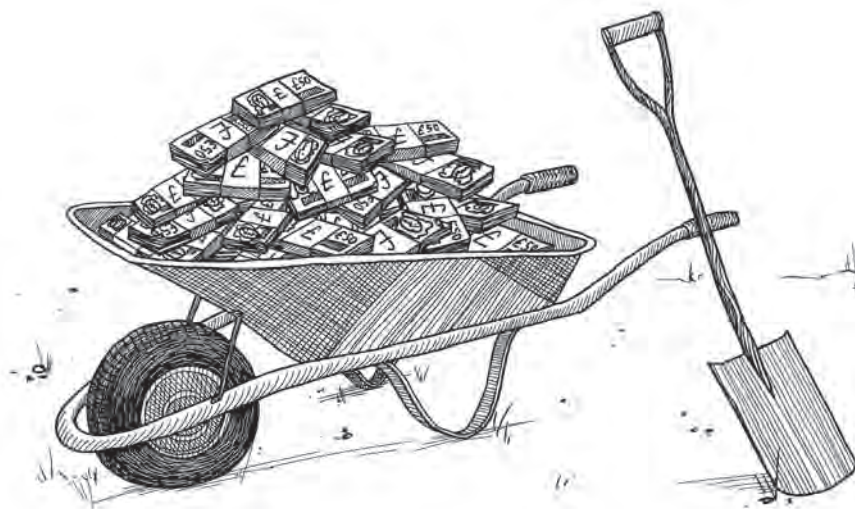


How suitability is judged varies a good deal and is inevitably a somewhat subjective process. In some cases adherence to the local vernacular, for instance by matching or complementing neighbouring buildings, might be relevant. In more isolated locations or where there's a broad mix of materials used in the area, planners shouldn't be too prescriptive.

ANY QUESTIONS?

Send all your self build, renovation and conversion questions to buildit@castlemedia.co.uk or visit www.self-build.co.uk/question
Please note all correspondence may be published in the magazine

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Mortgage Type	Lender	Phone	LTV Land	LTV End Value	Interest Rate	1st Stage Payment
Advanced Stage Payment Mortgages Created by BuildStore, these products pay out prior to the start of each phase of works – offering cashflow benefits for those requiring guaranteed capital.	Bath BS	0345 223 4647	85%	80%	4.74%	DPP & Building Regs
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	Penrith BS	0345 223 4647	85%	75%	5.50%	DPP & Building Regs
Arrears Stage Payment Mortgages These products pay out in stages following completion of pre-agreed phases of the works, so are best suited to those with significant capital (eg savings or the cash from the sale of your current home). With this type of mortgage, you fund each phase yourself. The lender will then reimburse you to a percentage of the value of the project at that stage. The trigger points for these draw downs can vary, but a typical pattern might be: foundations; wall plate; wind & watertight; first fix; completion. The exact value of each stage of works will be determined by the lender's surveyor. BuildStore exclusives (arrears and advanced) can lend on plots with only outline rather than detailed planning consent (which is not always the case with other products).	Buckinghamshire BS	0345 223 4647	75%	75%	4.59%	Foundations
	Chorley BS	0345 223 4647	85%	80%	4.74%	Foundations
	Darlington BS	0345 223 4647	80%	80%	4.99%	Foundations
	Dudley BS	0345 223 4647	50%	75%	5.49%	Foundations
	Furness BS	0345 223 4647	80%	80%	4.74%	Foundations
	Holmesdale BS	0345 223 4647	85%	80%	5.24%	Foundations
	Ipswich BS	0345 223 4647	75%	75%	4.84%	Foundations
	Loughborough BS	0345 223 4647	75%	75%	4.54%	Foundations
	Mansfield BS	0345 223 4647	80%	80%	4.74%	Foundations
	Newcastle BS	0345 223 4647	80%	80%	5.40%	Foundations
	Cumberland BS	01228 403141	75%	75%	Call	Flexible
	Ecology BS	0845 674 5566	80%	80%	4.65%	Flexible
	Halifax	0345 850 3705	75%	75%	5.59%	Foundations
	Hinckley & Rugby BS	01455 894083	N/A	75%	5.64%	Footings
	Loughborough BS	0345 223 4647	75%	75%	4.69%	Foundations
For advice on funding your self build project, speak to the experts at BuildStore on 0345 099 2234 or visit www.buildstore.co.uk	Newbury BS	Local branch	66%	75%	4.70%	Foundations
	Progressive BS	Local branch	N/A	75%	4.25%	Wall plate
	Scottish BS	0131 313 7700	80%	80%	5.99%	Foundations
	Vernon BS	0161 429 6262	75%	80%	4.95%	Wall plate

BUILDSTORE EXCLUSIVES



Rachel Pyne
BuildStore

What to consider when applying for a self build mortgage

Applying for a mortgage is more complicated than ever, with new affordability rules to understand as well as a variety of changing criteria to keep up with.

With a self build or renovation project this can become even more challenging, as there is so much more to consider when arranging your finance. For instance, where do you intend to live whilst your new house is being built and how will the cost of these arrangements

(ie mortgage or rent payments) affect the amount you are able borrow to construct the new property?

Most lenders now take these costs into account when assessing your project profile and what level of funding you can afford to service. This will be the case even if the costs are only short term – so it makes sense to find out early on exactly what your borrowing options are, as different lenders will apply different rules.

PLOT WATCH:

The Millers have spotted a potential building plot in an area of woodland – but getting planning consent could be tricky. **Mike Dade** analyses their chances of success

WHO Emily and Peter Miller

WHAT The couple have come across an area of woodland that has the potential to provide the self build opportunity they have been searching for. Mike Dade assesses their best route forward

WHERE Bedfordshire

Mike Dade *investigates*



INTO THE WOODS

Emily and Peter Miller have discovered an area of woodland for sale that immediately adjoins the edge of a village. While they recognise that creating a home in such a location would be difficult, they're committed to a green build, and hope this might sway things in their favour. They'd like to create a modest two-bedroom house, and are open to innovative design approaches that could address the challenges. So, is this a genuine possibility, or a step too far in planning terms?

The site

The wood extends to about 1.5 hectares, and has a frontage of 50m or so to the main village street. There's a bridleway running up one side, and the trees are mostly a mix of ash, oak and hornbeam around the edges of the site. The centre is home to a thicket of young birch, willow and sweet chestnut trees. It appears to have been coppiced recently, and partially cleared in places.

The built-up part of the settlement extends up to the wood and to the opposite side of the road, beyond it. The plot itself is only 200m from one of two local pubs and 500m from the centre of the village, which is also home to a shop and other facilities.

Planning principle

The development boundary of the village, defined in the Local Plan, runs up to the wood but, not surprisingly, excludes it. The council, though, does not have a five-year housing land supply, so its policies for

new homes, including those prescribing development boundaries, are considered out of date. In these circumstances, the National Planning Policy Framework (NPPF) dictates that planning permission should be granted unless any harm arising from the project 'significantly and demonstrably outweighs the benefits'.

The site is close to a village centre with a range of amenities and is well-related to the built-up edge of the settlement. Therefore, it's broadly a location where – subject to all other relevant planning details being acceptable – permission for a new house should be acceptable in principle.

Key obstacles

Planning policies aim to ensure that new housing is compatible in design and layout with existing homes in the vicinity. This doesn't necessarily mean they should be the same, and judgements on what does and doesn't fit into a street scene or area are inevitably somewhat subjective. In all probability a new dwelling on this plot would be largely screened from the road by trees, so there would be greater scope for introducing an aesthetic that was different to the typical brick and tile properties on the street.

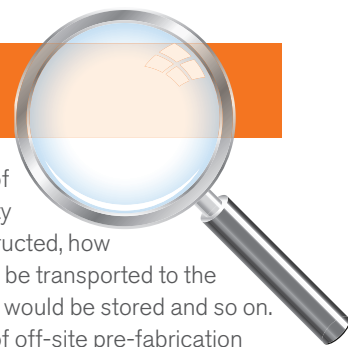
There is also legislation to preserve trees, natural habitats, and protected species. The NPPF states that local authorities should aim to conserve and enhance biodiversity. This overarching goal is likely to be at the forefront of consideration of any kind of development in a forested area. On the face

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of it, the challenge here for Emily and Peter is to assess whether a house could be built that not only avoids harm to the wood, but brings positive enhancements as well.

Planning potential

The issue here isn't just a new building, but also access to it, drainage and amenity space around it. A further obstacle is how these things can be erected without the construction process harming the surrounding area of forest. From experience elsewhere with a woodland-based holiday facility, I believe it might be possible to overcome these particular challenges, subject to two provisos.

First, there needs to be sufficient space on the plot where a house could be sited without harming trees or valuable habitat, including encroaching on root systems. There must be access to it for construction

On the face of it there could be a way forward, but there's little doubt that a scheme like this could stir objections locally. Planning officers are likely to be wary too, as they might fear setting a precedent. Therefore, this is one of those projects where it would be realistic to assume any application might have to go to appeal.

First steps

Emily and Peter will need specialist input if they're to make a success of a self build here. A detailed assessment of the overall health and makeup of the wood from an arboriculturist would be a good starting point, and that process could aim to identify possible locations for the house.

The cleared coppice areas appear to be the obvious choice to the untrained eye, but what plants and animal species might be lurking in or under the trees isn't obvious

out the details of how the property would be constructed, how materials would be transported to the site, where they would be stored and so on. A high degree of off-site pre-fabrication might be one way of minimising the impact, together with lifting the building components into the wood from the road by crane. The practicality and cost of all these ideas must be factored in too.

These initial investigations would incur some fees, so unless Emily and Peter are firmly wedded to the possibility of building on this particular site, then the costs might not be justified in view of the risks. However, the woodland is being sold at a price that would be cheap if they could buy and then get planning permission. Again, though, that route would involve considerable uncertainty.

Conclusions

This isn't a straightforward case at all. My assessment is that planning consent is unlikely, but not necessarily impossible. If the Millers wanted to invest in buying the woodland for its own sake, that would make the whole idea a great deal more sensible. But, if the couple's only interest in the land is its potential to provide them with a plot, I'd advise them to look elsewhere – unless they are fully prepared to take some considerable financial chances. These risks could potentially be reduced if the owners of the wood would consider a subject to planning offer, but that might provoke them to reconsider the current asking price.

Whichever way Emily and Peter view the opportunity, the important point is that an application to develop a new house would be a waste of time and resources unless it was supported by a robust, carefully-planned case. This would have to provide assurance that the project would not only protect the woodland, but enhance it and its biodiversity too. It's a fascinating challenge.



and scope to get drainage and services to the house – all without damage to the wood. The property could use piled foundations and possibly a floor slab raised above the floor. Drainage or service runs could be hand-dug and possibly follow a path to the dwelling. Design and materials need to be sympathetic to the setting and even seemingly small details like outside lighting need careful consideration due to their implications for bats.

The second proviso is that there must be an absence of rare or protected species or habitat that might be damaged. Ideally, there should also be potential to enhance the biodiversity of the area.

in winter. Again, to my untrained eye, there appears to be potential to thin out the dense growth, to enable more in the way of oak, ash and hornbeam trees to flourish. An opinion from an ecologist would be valuable too, to determine if protected species are likely to be present, and also what scope there might be for habitat enhancement.

Subject to the results of the initial investigations the next question, which could be put to an architect, would be whether a house could be built without the construction process causing unacceptable damage to the surroundings. A construction method statement would be needed alongside the planning application, spelling



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From the outset, the biggest challenge was the wall height, normal standard doors are manufactured at 2.5m, however a 3.5m high sliding door was required for this site. The Bi-Fold Door Factory successfully installed a curtain walling system from Schueco UK., a German engineered, double-glazed and

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Location

Monmouthshire

Price

£160,000

Plot number

135991

Description

This plot comes with detailed planning permission to create a spacious five-bedroom detached house with an integral garage. The site enjoys a secluded location within the picturesque Sirhowy Hill Woodlands on the eastern edge of the town of Tredegar. The settlement is home to an array of amenities, including schools, pubs, restaurants and shops. It benefits from good road and rail links to Cardiff.



Agent

Clee Tompkinson
Francis

Location

Dumfriesshire

Price

£75,000

Plot number

135992

Description

Outline planning permission has been granted for the construction of a single detached dwelling on this site within the small hamlet of Croalchapel. Though the plot is positioned in a scenic rural location, the small village of Thornhill is nearby for access to schools and a range of leisure facilities, including a golf course. The larger town of Dumfries is 14 miles south for further amenities.



Agent

Pollock &
McLean

Location

Cheshire

Price

£395,000

Plot number

135996

Description

Measuring roughly 315m², this plot comes with detailed planning consent for the development of a large detached dwelling. Situated within the village of Lymm, the site is ideally-located for access to nearby shops, restaurants and schools. The larger towns of Altrincham, Warrington, Manchester and Chester are within easy reach thanks to nearby links to the M6, M56 and M60 motorways.



Agent

Gascoigne Halman

Location

Somerset

Price

£179,500

Plot number

135997

Description

This site comes with detailed planning permission to develop a four-bedroom house. Situated in the small village of Coxley, the plot is within easy reach of the Somerset Levels and the Mendip Hills. The settlement is home to a primary school, although the small city of Wells is nearby for access to further amenities including secondary schools, shops, restaurants and a twice-weekly market.



Agent

Roderick Thomas

Location

Essex

Price

£450,000

Plot number

135999

Description

Detailed planning permission has been granted to change the use of the barn currently occupying this plot to a two-bedroom detached property. Positioned within the village of Little Baddow, the site borders on fields and enjoys a splendid outlook over the surrounding countryside. The settlement lies between the villages of Danbury and Hatfield Peverel. Chelmsford is eight miles away for access to a wide range of amenities.



Agent

Meacock
& Jones

Location

Warwickshire

Price

£200,000

Plot number

136002

Description

Outline planning permission has been granted for the construction of a three-bedroom detached dwelling in the village of Clifford Chambers, which is a short distance from Stratford-upon-Avon. The settlement is home to a church and a village hall. The site is around seven miles from the M40 for access to the motorway network, and Stratford train station offers direct connections to London.



Agent

Victoria Jeffs

InFocus



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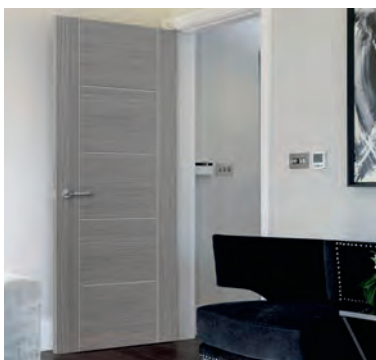
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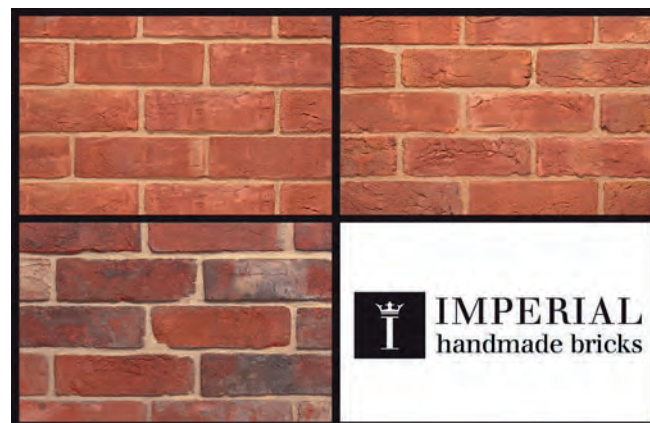


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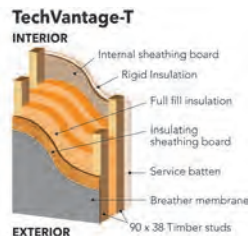
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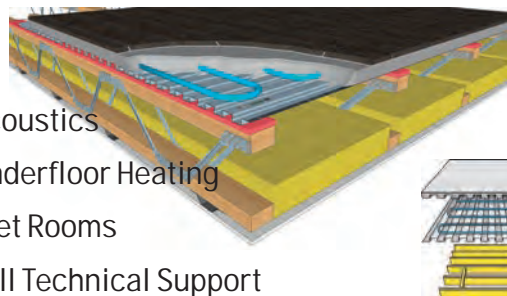
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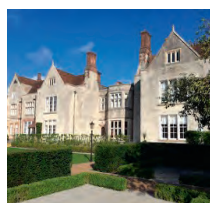
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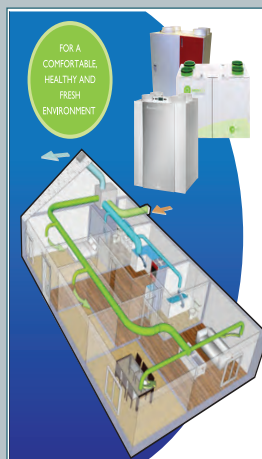
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focus on:

This month we catch up with **Andrew Dixon**, head of policy at the Federation of Master Builders (FMB) about how the UK's decision to leave the EU might affect the country's self build sector



These slate roof tiles from Travis Perkins are imported from Spain



The FMB recently revealed that 70% of UK contractors have observed an increase in materials prices due to the falling pound following the Brexit vote. How is this likely to impact on self builders?

Around a quarter of all materials used in the UK construction industry are imported, so there's no doubt that Sterling's fall in value is having an effect on materials prices, and this applies as much to products as it does to commodities. Many goods manufactured in the UK will use components from overseas, so it does tend to push up costs all round. In terms of specifics, at the FMB we've heard reports of a 22% growth in the price of Spanish slate and a 20% rise in the cost of imported timber.

Is the demand for materials sourced on our shores likely to grow as a result of this?

It's quite possible, as one of the main reasons UK manufacturing has been hit so hard in recent decades is because we simply can't make products as cheaply as countries that operate with different labour laws, wage rates and cost structures. So, the falling value of the pound could start to make imported materials look a little like less of an appealing option for self builders.

There's always going to be volatility in currency markets, so we probably wouldn't expect to see any dramatic changes in sourcing policies that could affect self builders' projects immediately. However, in the long-run, if Sterling does continue to remain this weak then goods sourced in the UK will certainly start to feel more affordable than they may have done previously.

Are there any other issues self builders might face as a result of Brexit?

More generally, the UK's decision to leave the EU is likely to result in some changes to immigration policy. This could potentially have an effect on the cost of labour, however, that's not a direct consequence of the falling value of the pound.

This is something that has the capability to have an impact further down the line, but the construction industry and housing supply are government priorities for various reasons. Therefore, we would expect any kind of post-Brexit immigration policy to take the sector's needs into account.

Do you think the rising cost of materials would serve to put people off tackling projects?

On balance, I think it's pretty unlikely. The cost of building materials only makes up one part of the overall project budget, which would also include the plot, labour etc. Even then, it's not as if all of the goods you're sourcing for your scheme are going to be from overseas. Therefore, the increase is likely to be limited in terms of its effect on the entirety of a project and it's unlikely to be a game changer. In essence, I think that many self builders are working on long-held dreams of creating bespoke homes. In some cases, these projects could have been planned down to the finest detail over many years. A small rise in price probably isn't going to be enough to put the brakes on these kinds of schemes.

When it comes to interior fit-outs, for instance, prices can vary much more widely. Someone who is creating their own dwelling is in a good position to get their costs back on budget by switching the spec of the floor tiles or bathroom suite, for example.

How can self builders protect themselves against price swings when they're organising their project budgets?

You can ask your contractor to provide a fixed-price quotation. In this instance, any growth in the cost of materials will be swallowed up by the building firm. However, we wouldn't necessarily recommend this route, because if you're asking for a pre-determined price the contractor is going to build this into the conditions of the quote anyway. Your chosen builder might have allowed for a certain degree of contingency, so you may well end up paying more than you need to.

It's also worth bearing in mind that if your builder has to accommodate any unforeseen price rises as a result of a fixed-price contract, they're more likely to cut down on the amount of time they spend on the job, and rushing is going to lower the overall quality of their work. In that sense, the safer option is to get quotes for everything yourself and then create your own contingency fund in order to cover unexpectedly high outlays. Normally, a backup sum of around 10% of your overall project cost is sufficient, but if you're expecting prices to be volatile it might be worth building in an extra 5%.

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