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- **Extension Costs Explained**
- **Projects That Don't Need Planning**
- **Sliding Doors: Buyer's Guide**

Follow Build It's Real-Life Self Build!
Part 7: The SIPs Roof Goes On

NEED TO KNOW

Building Contracts: Why You Need One

Finding a Project with Real Potential

The Latest Self Build Mortgages

EXPERT ADVICE

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Welcome

With summer beckoning, I'll warrant many of you are making hay while the sun shines and getting stuck in to the nitty gritty of your projects. That's certainly the case on site at the Build It Education House. We've just fitted the SIPs roof (see page 62 to find out why we plumped for this panelised system, and how the install went) and are motoring ahead now that we're (almost) in the dry. With the roof on, we've even been able to get the whole Build It team on site to see our real-life project in action. Check out our Twitter account (@BuildItMagazine) to get the latest behind-the-scenes updates from our groundbreaking self build scheme, or log on to www.self-build.co.uk/ourhouse to get the full story so far.

Opening later this year as a unique learning experience for people who want to create their dream home, the Education House is part of the innovative Graven Hill custom build scheme in Bicester, where up to 1,900 bespoke projects are set to be completed in the next 10 years. Bicester is also home to our next Build It Live exhibition on 8th & 9th June. The show is the perfect place to get practical expert advice and inspiration for your self build, extension or home renovation. Find out more about this unmissable event and claim two free tickets over on page 17.

Meanwhile, this month's magazine is packed full of tips and ideas to help you realise your project on time and on budget – from our new renovation series, kicking off with assessing a property's potential (page 76), through to guides on sliding doors (page 69), extension costs (page 85), securing planning permission for your self build (page 96), the value of good contracts (page 109) and more. Plus, the print edition comes bundled with a free copy of our Complete Guide to Self Build, which is sure you to help you successfully realise your dream home.

Chris

CHRIS BATES, EDITOR

MEET THE TEAM

EMILY SMITH is Build It mag's deputy editor and supplements editor. She has a detailed understanding of the challenges self builders and renovators face. This month, she looks at how to assess a property's renovation potential (page 76).

CHARLEY WARD is Build It's editorial assistant, and newest recruit. She has a passion for architecture and loves visiting readers' real-life projects to hear their self build stories. Turn to page 69 for her in-depth buyer's guide to sliding doors.

TIM DOHERTY was the founding MD of the NSBRC and runs Dobanti property surveyors. He advises on a range of project issues, including finance. On page 101, he looks at how to get foundations right on your extension.

MIKE DADE is a planning specialist and plot-finding expert. He's the author of several must-read books on land and planning. For his expert advice on projects you can do without seeking full planning permission, turn to page 115.

JULIAN OWEN is Build It's design doctor. He is a self build architect and the founder of the Association of Self-Build Architects. In his regular house design masterclass (page 96), he helps you navigate planning.

ALAN TIERNEY is a historic buildings consultant and conservation specialist, offering hands-on advice to owners of heritage homes. Think your period property might be suffering from woodworm? Don't miss his guide on page 104.

MIKE HARDWICK is a consultant and project management specialist, and has been heavily involved in promoting self build with NaCSBA. See page 109 for his tips on why you should always set up a proper contract with a builder.

OPINDER LIDDAR is director of award-winning Lapd Architects. He is a regular expert at the Build It Live shows and the National Self Build & Renovation Centre, and was the designer behind Build It's Education House (page 62).

NIGEL GRIFFITHS is a sustainability consultant and author of Haynes' Eco House Manual, and a fount of knowledge for heating solutions. Get free advice from Nigel and all our experts at the upcoming Build It Live show (www.builditlive.co.uk).

EDITOR'S FAVOURITE FEATURES

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READERS' HOMES

COVER STORY **New & improved** 20

A drastic remodel has transformed Rachael and Dan Gardner's dated 1970s dwelling into their dream home

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The east coast of Scotland proved the perfect place for Margaret Laird and Roger Gibbins to build themselves an impressive timber frame property for retirement

Sea breeze 37

Despite delays with their planning application, seasoned self builders John and Jennifer Rosser created their new home in just seven months – and for £3,000 under budget

Make the connection 45

Richard Ball has given a Victorian-era farm workshop a fresh lease of life by undertaking a smart renovation and adding a new single-storey extension

Concrete example 53

For their latest project, Andrew and Gisela Blee took on the challenge of constructing a large contemporary abode with a few traditional touches on a Cotswold hillside plot

RENOVATION & BUILDING

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Editor Chris Bates celebrates getting the shell of our Graven Hill self build complete, as the SIPs roof is installed

COVER STORY **Buyer's guide to sliding doors** 69

Adding glazed doors can create coveted light-filled interiors. Here's what you need to know to specify the right units

COVER STORY **Renovations: assessing a project** 76

How can you tell if a property is ripe for renovation? Emily Smith gives her top tips on spotting real potential

COVER STORY **Extensions cost guide: Part 2** 85

In the second of this series, Adrian Wild breaks down the average costs involved in adding a two-storey extension

Outdoor living ideas 87

Forget bringing the outside in and bring the inside out instead with our pick of must-have garden features

Structural systems FAQ: ICF 90

Discover an innovative modern construction technique that can offer a quick build and comfortable, efficient living

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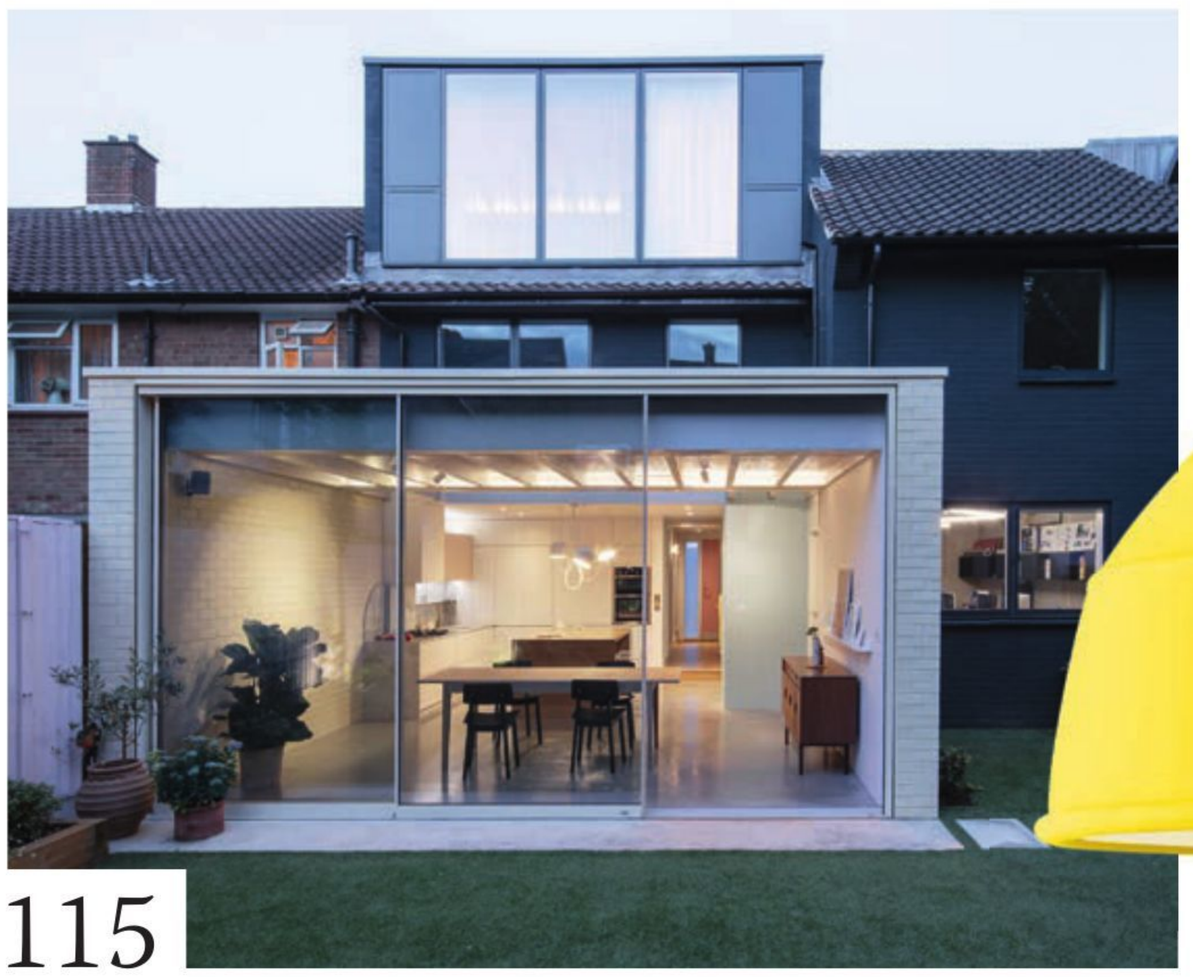
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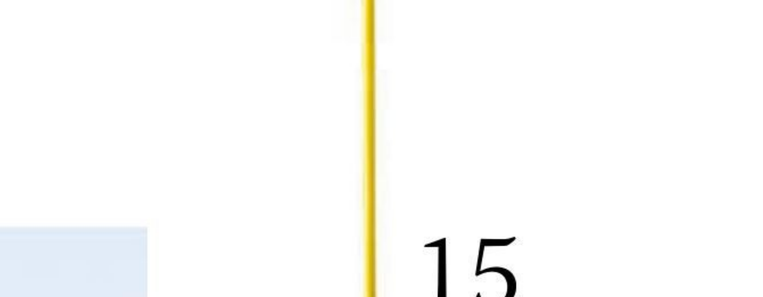
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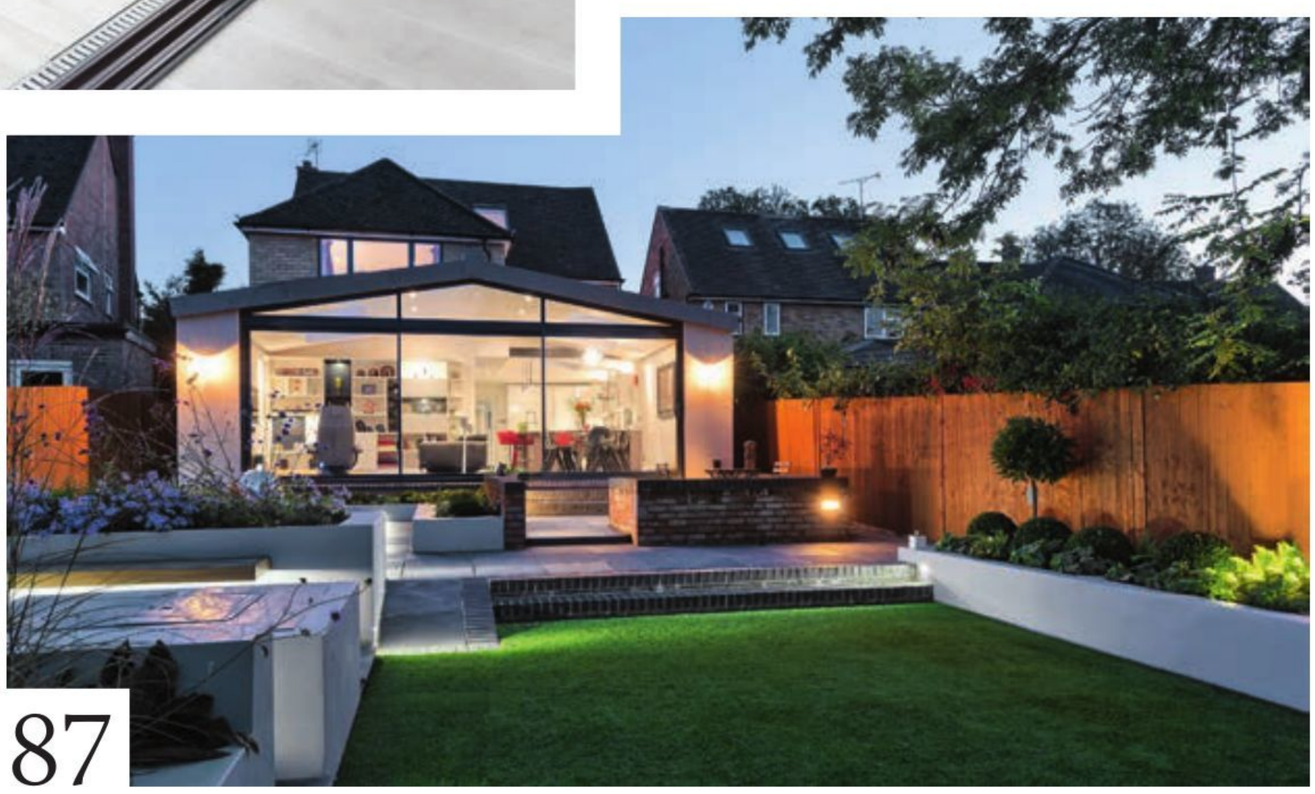
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It's time to turn your ideas into reality, as architect Julian Owen sets out what you need to know to win over the planners and get approval for your design first time

Foundations for extensions 101
Tim Doherty explains how to ensure that your property's new addition starts out on a firm footing

Dealing with woodworm issues 104
Alan Tierney shares his knowledge on what to do if you think your period home has woodworm – and how to tell if it's something you genuinely need to worry about

COVER STORY **Can a contract save you money?** 109
In order to get the best value, a legally binding agreement between yourself and your builders works out best for all parties, says project management expert Mike Hardwick

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Top tips for securing a plot – plus a selection of sites for sale (page 127)

Plot watch 129
Mike Dade assesses a site's potential

Next month 145
Coming up in the August edition

Focus on 146
Karen Curtin fills us in on the latest news from the Graven Hill self build scheme

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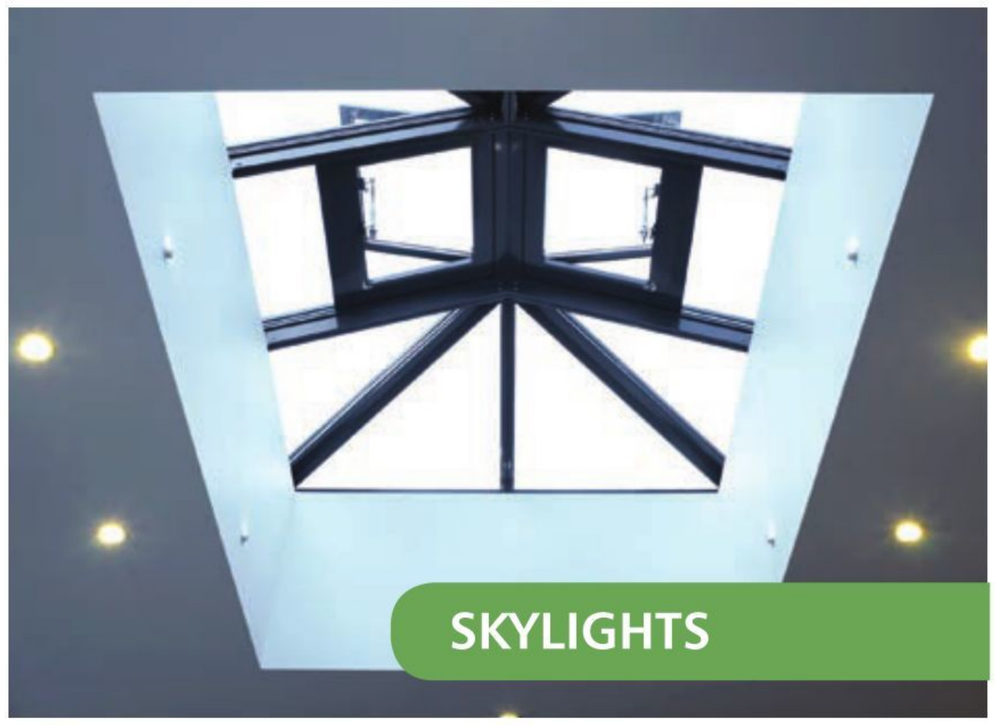

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Light filled extension

The previous rear facade of this family home was of poor quality construction and the internal layout was disorganised. Studio 30 Architects removed walls and replaced the existing rear extension and loft conversion with larger, full width ones. This created enough space to rework the floorplan to better suit the owners' needs. The kitchen forms the heart of the new zone and naturally darker areas have been allocated to lesser used spaces.

By raising the dormer loft ceiling and adding full height fenestration, more light is allowed in and views of the garden are enhanced. The ground floor addition extends out the full 6m that's allowed under England's larger permitted development rights and includes sliding glazed doors installed across the entire width of the elevation. A rooflight allows more natural brightness to flood into the reworked open-plan living area.

All the glazed elements feature frames in an anthracite grey finish, which gives the building greater coherency, while dark blue engineering bricks on the ground level clearly define the new extension. Up on the first floor, two new windows with substantially lower sills have been fitted to open up the internal spaces to the outside.

For more information log on to www.studio30architects.co.uk

PROJECT OF THE MONTH

Watson Annexe

by Strom Architects

This annexe sits in the grounds of a home architect Magnus Strom had worked on prior to setting up his architectural practice. The new timber-clad building replaced a dated two-storey structure that was not fit for the owner's purposes, as he wanted a fun and flexible space that could host parties and also serve as extra accommodation when needed.

As the property sits within the New Forest National Park, it's an ecologically sensitive site. Extensive wildlife surveys were needed to ensure the necessary measures were in place to maintain natural habitats.

The annexe is finished with vertical panels of sweet chestnut cladding and sits on a base of black bricks. A pitched roof and small punched windows contribute further to its simple design. A wooden decked area outside features a semi-sunken hot tub and built-in seating. There is also a pizza oven, wood store and hidden LED lighting that provides subtle illumination.

Inside, there are two cosy bedrooms, one bathroom and an open-plan living/games/bar area with bespoke shelves. The main walls and ceilings have been clad in reclaimed pine and the floors are made from the same bricks used for the external plinth.

For more information call 01590 677442 or log on to www.stromarchitects.com

RICHARD CHIVERS

UK's must-have smart home tech is revealed

The popularity of home technology is rising, with almost a quarter of us owning at least one smart device. Research by National Home Improvement Month found that the most desired functionality was the ability to control heating through an app, with almost a third (30%) of respondents prioritising this. In second place was app-controlled lighting, with 25% thinking that it made a valuable addition to their property. Wireless charging, door answering apps and smart security systems also ranked highly.

1 in 5

British families are hoarding various paraphernalia in their houses, according to a study by home interiors specialists Hillarys. The surplus included clothes and shoes, books, old electronics and out-of-date tinned food, with an average worth of £500. Reasons for holding on included a lack of willingness to have a clear out (44%), that they might be worth a lot of money one day (36%) and that they hold sentimental value (10%).

Larger home extensions set to stay in England

Temporary permitted development (PD) rights enabling homeowners in England to extend at the rear of their properties by up to 8m for detached houses, and up to 6m for terraces and semis, have been made permanent. In the latest round of tweaks to the General Permitted Development Order, coming into force on 25th May, the government has quietly removed all references to the original 30th May 2019 deadline – confirming the larger home extension and neighbour consultation scheme is here to stay.

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COMMUNITY SELF-BUILD CONFERENCE
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DOVER
dover.gov.uk

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LONDON
houseandgardenfestival.com

SELF-BUILD & COMMUNITY EVENT
20TH JUNE
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LANCASTER
lancaster.gov.uk

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icobcourses.com

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EXETER
architecture.com

SELF BUILDING AN EARTHSHIP
12TH - 14TH JULY
£87.50
BRIGHTON
brightonpermaculture.org.uk

ENERGY EFFICIENT SELF BUILDS
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FREE
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nsbrc.co.uk

PASSIVHAUS COURSE
17TH JULY
£145
BIRMINGHAM
architecture.com

DOOR FITTING COURSE
24TH - 26TH JULY
£390
LONDON
thegoodlifecentre.co.uk

Tax rate hike on renewables sparks criticism from experts

Despite the declarations of a climate emergency in May, VAT rates for renewable tech including solar panels, battery storage and biomass boilers will rise from 5% to 20% on 1st October. The news comes following a consultation by HMRC, which saw rates for fossil fuels like gas and coal remain at 5%.

Experts have raised concerns that this move could have the effect of making installation of solar panels and other tech uneconomic. Frank Gordon, head of policy at the Renewable Energy Association, said that the decision "risks setting back the decarbonisation of homes and businesses in the UK by a number of years" and that the government is "again erecting a barrier to cutting emissions and increasing costs for households who want to help."

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need to know

The introduction of this government-backed scheme in Wales should mark the start of an exciting new time for self builders

For a number of years, the Welsh Assembly has had devolved powers over planning. It has been know to add some extra hoops you have to jump through to get through planning and Building Regulations. Wales made complying with the Code for Sustainable Homes (CSH) a requirement when it was still only voluntary in England, adding considerable extra cost. With CSH subsumed into Building Regulations in England, it has also been rescinded in Wales, but the Welsh Assembly has since insisted on the installation of fire suppression or sprinkler systems in all new homes. Many saw this as sensible, but others resented the additional charge for just being on the other side of Offa's Dyke.

For a while, it seemed like self building here was harder than anywhere else in the UK, but this looks to be changing. Now, the Welsh government has allocated £210m to a new scheme aimed at diversifying the housing market by offering loans to self builders. Under this initiative, due to go live in mid 2019, loans will be made available for pre-agreed building plots. These are repayment free for up to two years or until the new abode is completed or mortgaged. The upshot is that self building now has the real potential to be a viable option for everyone in Wales, not just for those who are better off.

This project will make permissioned plots available through local authorities and housing associations. Individual sites will have passports detailing the price, approved designs, estimated construction fees and choices for personalisation. Interested parties will be able to see all the plots currently available, as well as those being prepared on an interactive map online.

Approved applicants can make a reservation with a deposit of 25% of the site's value. The development loan covers the balance of the plot (75%) and the full construction cost. To apply, applicants must meet the qualifying criteria, not own another property at the time of completing works and won't be able to rent or sell their completed new home for five years.

People can apply for up to five sites but will only be offered one and, once accepted, will be precluded from applying for another. It's open to everyone, not just first-time buyers, so those looking to go up or down the housing ladder can also get involved.

The scheme has been welcomed by the Federation of Master Builders Cymru and NaCSBA, amongst others. It should prove a big boost to small construction companies who have struggled against the dominance of the big developers and deserve to succeed. For more details, go to gov.wales/self-build-wales or read our interview with the Welsh deputy housing minister, Hannah Blythyn, at self-build.co.uk/wales-fund

MIKE HARDWICK

is a self build consultant and project management specialist. He is also NaCSBA's general manager. He has first hand experience of the processes involved and is a regular expert at the Build It Live shows.

Follow Mike's blog online:
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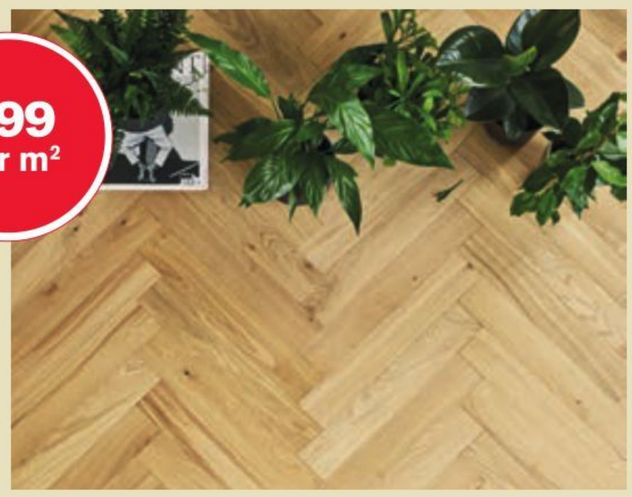

£99 per m²

The texture of this engineered oak floor is revealed as the wood grain catches the light. A classic oak finish provides a wonderful anchor for traditional and modern schemes, creating harmonious interiors. Habitation Cotswold Manor parquet, £99 per m², www.claybrookstudio.co.uk

£55 per m²

This vinyl wood-effect parquet flooring has a thick wear layer that allows for an authentic, textured appearance and a very practical, hardwearing finish. The elegant, honey-toned oak makes a warm and welcoming space. Amtico Form parquet in Rural Oak, £55 per m², www.amtico.com

SMART MONITORING

This wireless detector featuring a motion-activated light turns green (good), yellow (warning) or red (danger) to alert users of their home's air quality. It checks for radon, CO2 and volatile organic compounds. **Wave Plus smart radon, C02 & TVOCs detector, £239, www.airthings.com**

GREEN ENERGY

Boasting exceptionally quiet performance, this air source heat pump has an A++ energy rating and can achieve a seasonal co-efficient of performance (SCoP) of up to 4.69. **Arotherm split heat pump, £POA, www.vaillant.co.uk**

MODERN FINISHES

Rainclear Systems has added a new white colour to its Infinity galvanised steel rainwater collection. This premium option is a longer-lasting, higher quality and more sustainable alternative to typical PVCu gutters. **Infinity galvanised steel rainwater system, from £24.86 for a 3m run, www.rainclear.co.uk**

POWER SAW

Ideal for cutting branches, firewood or flush elements next to walls, this cordless reciprocating saw has functions that extend to wood, steel, plastic, chipboard, rubber or plasterboard, making it a highly versatile tool for tackling multiple materials. **AdvancedRecip 18 saw, £89.99, www.bosch.co.uk**

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interiors notebook

Forget minimalistic whites and greys – bold, brave colours are back in full force. Mix rich tones in contrasting hues to achieve an interiors scheme that makes a real style statement

1

3

5

4

Shopping list

1 *Designed for use with wall mounted taps, this pink-hued concrete countertop sink has an unusual pleated design.* **Otto concrete basin in blush, from £1,788, www.alternativebathrooms.com**

2 *A playful take on the classic industrial lamp; this bold pendant is crafted from moulded silicone and comes with a colour-coordinated cable to finish.* **Unfold pendant light, £155, www.rume.co.uk**

3 *Blending a sleek silhouette with its tufted cushion details, this mid-century style sofa is upholstered in plush velvet to create a sophisticated allure.* **Scott 3 seater sofa in burnt orange, £999, www.made.com**

4 *This Shaker-style kitchen combines modern and traditional elements with a smooth matt finish. The Forest Walk green shade adds extra atmosphere and drama.* **The Dunham kitchen, from £3,736, www.magnet.co.uk**

5 *A classic, timeless purple tone that is well suited to modern decor. This paint has a rich, chalky matt finish and is mixed to order.* **Plum Pie matt emulsion paint, £38 for 2.5l, www.grahambrown.com**

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Whether you're planning a self build project, renovating an existing home or extending to add space and value, here are 10 key reasons you can't afford to miss the upcoming Build It Live show at Bicester on 8th & 9th June

1 Get one-to-one advice

Securing expert advice can cost £100s, but at Build It Live you can book a free session with one of the magazine's industry-recognised self build and renovation specialists to help make a success of your project.

2 See inside a build

The Naked House gives you a fascinating insight into how your new home will come together. This is your chance to experience what a project looks like at first fix stage – including how ICF blockwork, roof trusses, floor joists and underfloor heating are installed.

3 Land Zone

All you need to know about finding land, with access to PlotSearch, the UK's premier live online database – plus a gallery of available sites and current custom build projects.

4 Learn from the experts

Build It's team of specialists will deliver an extensive programme of free-to-attend seminars, covering all the essential elements of your project – from getting the design right through to running a construction site. You'll also get access to focused 20-minute workshops on the choices you'll face, such as choosing your home's glazing, as well as free Self Build Academy taster sessions.

5 NEW! Heating Advice Clinic

Head over to our brand new Heating Advice Clinic – brought to you by popular demand – to gain impartial guidance on the best heat source for your project.

6 Meet real self builders & renovators

Pick up inspiration and gain the confidence to move ahead with live, in-depth advice from Build It readers who've successfully realised their own individual homes.

7 Shortlist products & materials

See and touch 1,000s of cutting-edge and traditional products, and meet 100s of suppliers who can help you find practical solutions for your project – from cost-saving modern options through to the latest eco and smart tech.

8 NEW! Build Cost Clinic

Discuss your project with one of our experienced estimators, who can give over your plans to help you understand what it will cost to build your dream home.

2 FREE TICKETS!
SEE PAGE 18 FOR YOUR FREE **BUILD IT LIVE** TICKETS

9 Visit the Graven Hill Zone

Build It Live Bicester takes place in association with Graven Hill. With over 1,000 plots available, this is the UK's first large-scale self build scheme, as seen on TV's Grand Designs: The Street. It's also the location of Build It's own real-life project. Head to the Graven Hill Zone to learn more, reserve your plot, attend live expert talks, and hear from self builders who've completed their homes at Graven Hill.

10 Find a local builder for your project

Visit the Find a Builder Clinic and let the experts guide you through the process of finding a suitable builder for your project (and avoiding the cowboys!). Plus, gain some top tips on the do's and don'ts of hiring tradesmen.

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Readers' homes

SELF BUILD + RENOVATION + EXTENSION + CONVERSION + IMPROVEMENT

20 **NEW AND IMPROVED**
The Gardners have reworked their tired 1970s property into a bright and spacious abode

29 **ABOVE PAR**
Margaret Laird and Roger Gibbins built their stunning timber home on the edge of a golf course in Scotland

37 **SEA BREEZE**
Despite a slow planning process, the Rosser's seaside self build went surprisingly smoothly once underway

45 **MAKE THE CONNECTION**
Richard Ball has thoroughly modernised and extended this characterful red brick Victorian workshop

53 **CONCRETE EXAMPLE**
Although it was a challenging process, Gisela and Andrew Blee have created a beautiful house on a Cotswolds hillside

MORE ONLINE »

FOR MORE INSPIRATIONAL READERS' HOMES VISIT WWW.SELF-BUILD.CO.UK/READERS-HOMES

New and

Two sizeable extensions and a reworked floorplan have transformed the **Gardners'** dated 1970s house into a light-filled family home

WORDS **JANE CRITTENDEN** PHOTOS **ALISTAIR NICHOLLS**

IMPROVED

What was an uninspiring 1970s house has undergone a remarkable metamorphosis. It all started when Rachael and Dan Gardner connected with an innovative architect who was keen to push the boundaries of design. "Our home needed reorganising, updating and extending but we didn't want a standard structure plonked onto the back of the property," says Rachael. "We were keen for the whole dwelling to flow and feel redesigned like new."

Room for improvement

The couple set about their search for the perfect house, their first together, back in 2009. Keen to purchase something equidistant from their respective places of work, Rachael went to view this property in Winchester in spring that year. "Dan was in the army and stationed in Afghanistan at the time, so I came on my own," she says. "I loved the location because it's so quiet. The house overlooks the countryside. We put an offer in straight away, as I could really see us bringing up a family here, which is what we went on to do."

The pair were immediately drawn to the dwelling's living spaces and large garden. While they hadn't planned to take on a renovation scheme, it was obvious from the start that the property came with various problems that would need to be addressed. Featuring a series of poky and dated rooms, the downstairs floorplan lacked the flowing feel the couple craved. The dark dining room was enclosed by an unwelcoming conservatory, and there was little connection to the outside. Upstairs fared better, with a wide landing

FACT FILE

NAMES Rachael & Dan Gardner

OCCUPATIONS Finance professional & sales manager

LOCATION Hampshire

TYPE OF PROJECT Renovation & extension

STYLE 1970s detached house with contemporary extension

CONSTRUCTION METHOD
Extension was built from steel frame and blockwork, with render finish. The porch has a glulam frame

PROJECT ROUTE
Architect & builder

PROPERTY COST £420,000

BOUGHT August 2009

HOUSE SIZE 210m²

PROJECT COST £264,500

PROJECT COST PER M² £1,260

TOTAL COST £684,000

BUILDING WORK COMMENCED
November 2015

BUILDING WORK TOOK
Seven months

MOVED IN
June 2016

CURRENT VALUE
£795,000

The raw oak floor came from Andy Pool Flooring. It is laid in a herringbone pattern throughout the downstairs and is finished with a clear oil

Dekton's Aura15 marble-effect quartz worktop is 50mm thick and strong enough to frame the island

The raised snug and half wall provides a cosy division of space from the rest of the kitchen

with views across the fields and four good-sized bedrooms in each corner of the house. From the outset, then, the couple knew they had a big job on their hands but they weren't ready to begin straightaway.

About a year after they moved in, Rachael decided to make a start. "I'd lived in a nicely decorated house before and I couldn't stand that everything looked so dated," she says. "I was losing patience, so we decided to get going on the upstairs as we knew the changes wouldn't affect the bigger project on the ground floor later on."

On the upper storey, work revolved around the installation of two new bathrooms and redecorating. The main bathing zone and separate WC were knocked together, while the window was repositioned to the centre of the space. In the master bedroom, Rachael and Dan transformed their ensuite into a wardrobe. They then created a new bathroom that linked to their bedroom by removing built-in wardrobes from the master and adjoining bedroom. But then work came to a halt.

Next phase

The years passed and Rachael and Dan's daughter, Eve, was born in early 2013. This prompted the pair to get on with revamping the downstairs, so they began the design process. However, with Dan's job taking him abroad and Rachael's demanding full-time work schedule, they remained relaxed about the project timeframe.

An open, bright extension was at the top of their wish list, to create flow between all the downstairs rooms and a strong connection to the garden. The pair wanted to enlarge the porch and increase the size

"We took our time and spent a year finalising the design"

The 1970s fireplace was replaced with a stylish new Rais woodburner

WE LEARNED...

HIRING the right architect is essential. Olly understood exactly what we wanted and really focused on the detail. It ended up being the making of our project.

DON'T BE too rigid with the budget. It was hard to commit extra money to our scheme, but we kept reminding ourselves we were only going to do this once. We wanted an innovative design and now it's complete, we have no regrets.

STICK TO your guns. I wanted a flush ceiling in the extension, but the builders weren't sure if they could fit the beam high enough. I pushed them to find a solution and they did.

RESEARCH fixtures and fittings as much as you can – it pays off. We spent time visiting kitchen showrooms to get ideas. Houzz was amazing for inspiration and helped shape the bespoke joinery features, such as the staircase and doors.

Right: The WC and family bathroom were knocked together soon after the Gardners moved in and painted in Farrow & Ball's Bone. The Villeroy & Boch sanitaryware is from Little John Bathroom Design. Below: The nursery features a subtle wall mural, following the neutral decor featured throughout the home

of the entrance hall, as well as improve the appearance of the front facade. New cladding on the upper floor, along with replacement windows with a slimmer aluminium profile, would give the house a facelift. On a practical level, the Gardners were keen to allow space in the floorplan for a study, downstairs WC and utility, plus a spot for the piano. "We wanted to rejuvenate our home," says Rachael. "I didn't want to step out of the new part and feel like I was walking back into the same old house."

Rachael spoke to some local architects but didn't feel inspired until she met Olly Bray from OB Architecture. "Olly produced a range of innovative ideas that showed he had a good understanding of every single component that was important to us," she says. "We took our time with the process and spent nearly a year finalising the design."

The couple settled on a generous 38m^2 rear kitchen-diner extension, with a raised snug area and a separate study. A double-storey glazed porch adds a modern flourish to the exterior of the house, while the bespoke new timber staircase and glass sliding doors in the kitchen have revitalised the interiors.

"What we liked was Olly's 3D visualisation of the open space downstairs, but with different zones," says Rachael. "He showed us how having the raised snug would feel cosy, and when I sit at the desk in the study I have a direct view into the garden."

Getting started on site

The proposal needed consent for the alterations at the front of the house. It was submitted to planning in January 2015 and approval arrived a month later, so the process to find a builder began.

Olly put the tender package together, which went out to three builders. By the summer, Samuel Property Development had been selected. Groundworks began in November. Almost straight away an issue cropped up when the builders uncovered soakaways beneath the soil. These had to be reinforced using steel cages filled with concrete. "They were fairly big chambers and were likely part of the military camp that had been here years before," says Rachael.

In January 2016, the building team were ready to start inside, so the family decamped to a rented bungalow just a 10-minute walk away. "It was perfect as I was on maternity leave with Bella, our second daughter, and able to focus on the project," says Rachael. "I liaised with the joiner on design decisions, answered questions from the builders and spent time sourcing the kitchen and flooring."

The reconfiguration of downstairs began with the transformation of the old utility room into a study. In turn, part of what was previously the dining room became the new utility. The kitchen and dining area were opened out into the extension, which now also features the raised family snug. The front living room remains in the same position, however, the ugly 1970s fireplace has been replaced with a stylish woodburner. The door was also moved down the hall and new fenestration has been fitted. "I always thought the windows were too boxy and high," says Rachael. "But we decided it wasn't worth spending the money to change the shape

of the openings. We fitted models with slim aluminium frames, which let in more light. They've made the spaces feel quite different."

Outside, the old cladding was taken off and the entire upper floor was insulated. The couple chose Cedral Lap white weatherboarding, a low-maintenance wood-effect cement composite.

During construction, another problem arose when the builders fitted the structural beam to link the extension with the existing house. "To have a flush ceiling in the new space, the support needed to connect into the upstairs bathroom. But the floor above was too low," says Rachael. "The team did a great job by changing the way the bathroom waste ran so they could push the beam into place."

Another question mark arose regarding the support for the original corner wall adjoining the snug. "Building control came and ran some checks and decided we needed a supporting pillar," says Rachael. "It sticks out a bit, but it isn't the end of the world."

Olly put together the kitchen layout and specialist company, Controlled Interiors, finalised the plan. At their suggestion, the Gardners have an invisible pivot door within the bank of cupboards, which opens into the utility room and downstairs WC. When the kitchen suite arrived, however, rather than all the cupboards being a stone colour, part of the order was white. Not wanting to delay moving back in, the couple accepted the compensation offered. In fact, Rachael says the colour contrast has ended up working well.

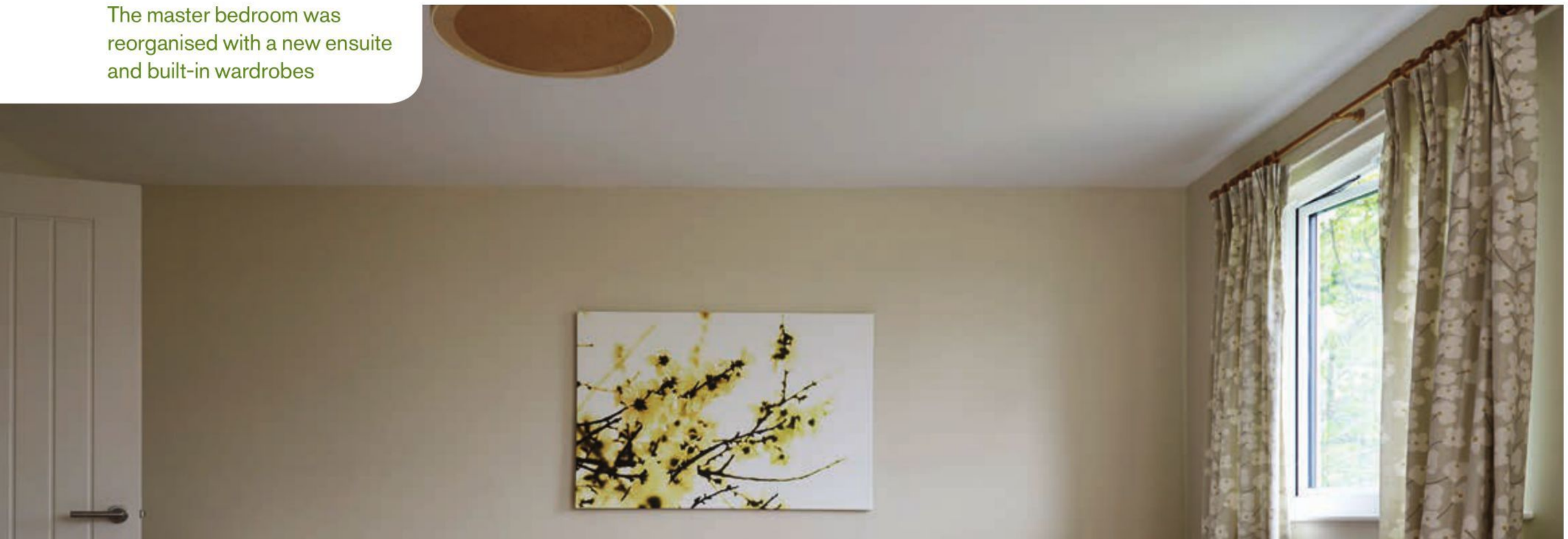
Pleasing result

The couple's home features a simple palette of white, pale grey and light wood, echoing the understated appeal of Scandinavian aesthetics. This allows the detail of the herringbone oak floor and bespoke joinery to take centre stage. "Olly's ideas were really simple but turned our ordinary house into a space that feels original," says Rachael. "We ended up more than doubling our budget because we upgraded the specification on the doors, chose oak frame windows for the porch, and decided to replace the entire staircase. However, this was a one-time project and it was definitely money well spent." That's reflected in the value of the finished house, which is worth a cool £100,000 more than the property cost to buy and update.

Seven months after starting work on site, the family were able to move back in and they're delighted with the outcome. "Olly's done a great job of transforming our home into a visual design statement," says Rachael. "The light and connection between all the rooms and the garden is amazing. Views we didn't have before keep appearing – like the tree in the front garden coming into blossom, which we can see from our dining table. Our whole house is just lovely now."

Useful contacts

ARCHITECT **OB Architecture** 01962 865344 www.obarchitecture.co.uk BUILDING CONTRACTOR **Samuel Property Development** 01722 334116 www.samuelpd.co.uk PORCH GLULAM FRAME **Glulam Beams** 023 8045 7236 www.glulambeams.co.uk FRONT DOOR, PORCH GLAZING, STAIRCASE & SLIDING POCKET DOORS **Shayne Ferguson at Ferguson Joinery** 01722 716565 FIBRE CEMENT CLADDING **Cedral** 01283 501555 www.cedral.co.uk SLIDING DOORS **Fineline Aluminium** 01934 429922 www.finelinealuminium.co.uk WINDOWS **Salisbury Glass** 01722 328985 www.salisbury-glass.com ROOFLIGHTS **Glazing Vision** 01379 658300 www.glazingvision.co.uk FLOORING **Andy Pool Flooring** 01980 610118 KITCHEN **Controlled Interiors** 01329 825932 www.controlled-interiors.co.uk BATHROOM **Little John Bathroom Design** 01739 231050 www.littlejohn.co.uk SANITARYWARE **Villery & Boch** www.villeroy-boch.co.uk GARAGE DOOR **Freelance Entry Solutions** 01722 711200 www.freelanceentrysolutions.co.uk WOODBURNER **Kingsworthy Foundry** 01962 883776 www.kingsworthyfoundry.co.uk



The master bedroom was reorganised with a new ensuite and built-in wardrobes

closer look

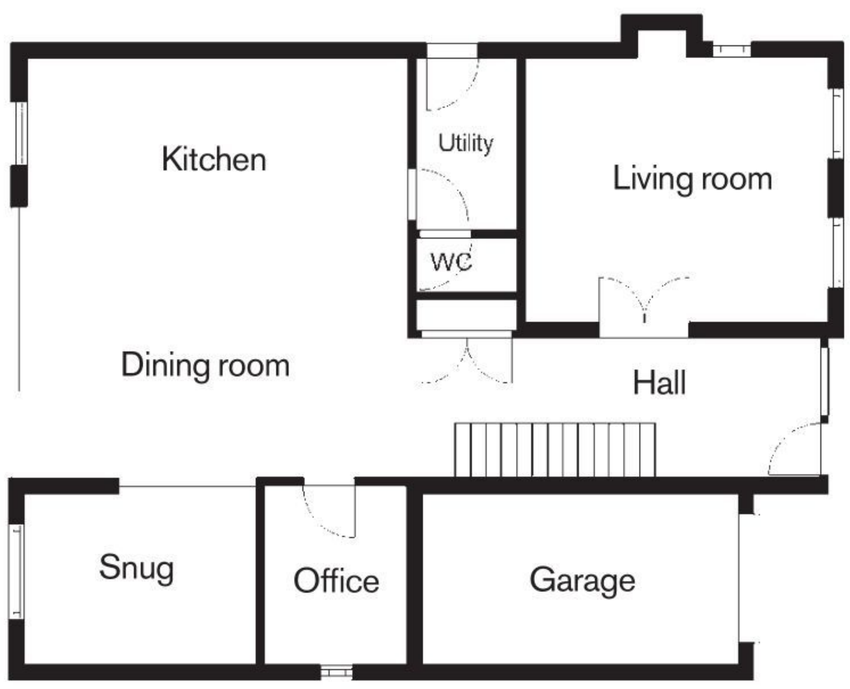
Tailor-made details...

Bespoke joinery was at the heart of architect Olly Bray's design concept to transform the Gardners' 1970s house. A striking double-storey spruce and oak glazed porch extends the hallway and brings a contemporary look to the property. A sliding plywood door acts as a moveable, gliding wall that separates the kitchen from the hallway. The new staircase is made with tulipwood and oak. "We were going to paint the balustrades white but we loved the chamfered edges and have instead chosen an oiled finish," says Rachael. "The tailor-made elements have lifted the design of our whole house to a different level."

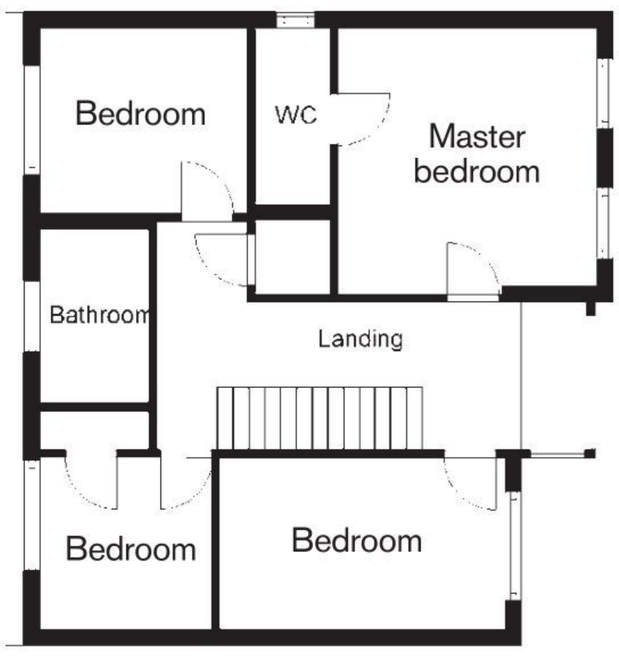
Striking entrance

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 m²	Cost %	Total cost
Building work	£381	30%	£80,000
Porch	£73	6%	£15,300
Front door	£18	1%	£3,700
Cladding & insulation	£59	5%	£12,500
Staircase	£49	4%	£10,200
Sliding plywood door	£17	1%	£3,500
Glazed living room door	£7	1%	£1,500
Windows	£60	5%	£12,700
Rooflights	£52	4%	£11,000
Sliding doors	£88	7%	£18,500
Internal doors upstairs	£5	<1%	£1,000
Flooring	£57	5%	£12,000
Kitchen	£176	14%	£37,000
Utility room	£18	1%	£3,800
Toilet & basin	£5	<1%	£1,000
Plumbing	£81	6%	£17,000
Electrics	£36	3%	£7,500
Woodburner & hearth	£19	2%	£3,900
Decorating	£24	2%	£5,000
Garage door	£9	1%	£1,900
Landscaping	£26	2%	£5,500
Grand total			**£264,500**

Note: The costs shown here reflect the original prices for materials, labour and services at the time this project was undertaken. As a general guide, inflation in the construction market runs at about 3%-4% per annum.

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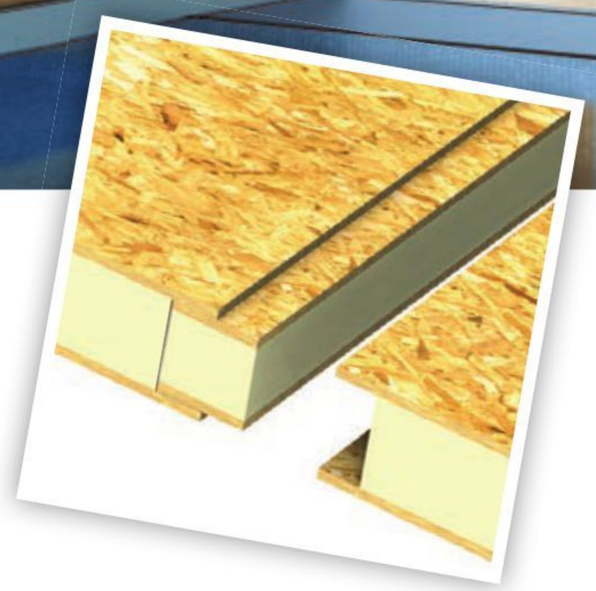

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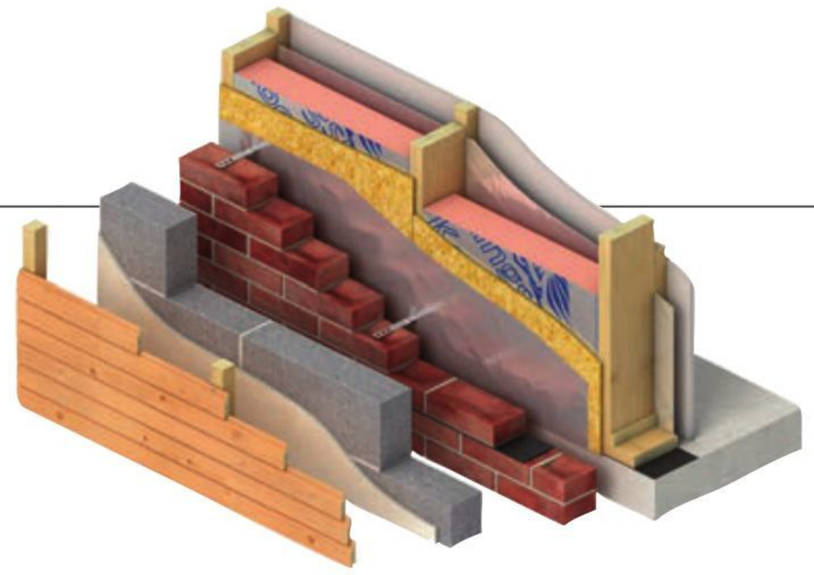

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Above *par*

As retirement beckoned, **Margaret Laird and Roger Gibbins** embarked on a project to self build a sustainable home on the fringes of a golf course

WORDS **JENNY MCBAIN** PHOTOS **KEITH HUNTER**

Margaret Laird and Roger Gibbins had spent many happy years in their home in the West Highlands, but as their work commitments eased off and they were able to spend more time outdoors, the couple made the decision to relocate to Morayshire, which is an area to the north of Inverness on Scotland's east coast.

The idea of building their own home was one that had evolved over time. "We have a good friend who built his place in Ireland and that was a source of inspiration for us," says Roger. "Also, I attended a rural building conference and began to get interested in modern, ecological construction methods." As for their choice of location, "the Morayshire climate and soil conditions were ideal for Roger, who is a keen organic gardener," says Margaret.

It was on a drive around their preferred area that the couple came across a particularly stunning new property. The signpost outside indicated it had been done by a design and build practice called Makar, which is headed up by architect Neil Sutherland. "We arranged a meeting with Makar architect Scott Reid and it was clear from the outset that they were right for our project," says Roger.

Green & pleasant

Securing a suitable site proved quite straightforward because the owner of a private golf course was selling off a series of plots within a woodland area. The land is surrounded by greenery and farmland and is in close proximity to a beach. It is also just a few miles away from Findhorn, an ecological community with integrated arts venues and shops, known for its sustainable housebuilding.

The planning process was plain sailing, and the finished house, named Tara Green, has since been used as a model for future development at the golf course because of its sympathetic design in relation to its surroundings. Architect Scott Reid describes its outward appearance: "The roof extends to form a series of covered external spaces, connecting the house to the landscape. The gently sloping, pitched design features a curved ridge, which blends into

FACT FILE

NAMES Margaret Laird & Roger Gibbins
OCCUPATIONS Retired
LOCATION Moray
TYPE OF PROJECT Self build
STYLE Contemporary
CONSTRUCTION METHOD Post and beam, SIPs & modular pod
PROJECT ROUTE Turnkey with a design & build company
PLOT SIZE Half an acre
LAND COST £85,000
BOUGHT 2016
HOUSE SIZE 186m²
PROJECT COST £453,200
PROJECT COST PER M² £2,437
TOTAL COST £535,000
BUILDING WORK COMMENCED January 2017
BUILDING WORK TOOK 11 months

"Our home is just such a beautiful place to be"

the surrounding undulating hills so the property nestles into the topography and feels part of the landscape."

The design concept

Scott asked a lot of questions about the couple's routines and lifestyle in order to come up with a layout that would suit them perfectly. He responded by making sure the living spaces were positioned to track the sun throughout the day. "The kitchen enjoys the sunrise in the morning with living and snug areas seeing the sunset," says Scott. "Rooms are open to each other but zoned by the change in level and volume between the spaces, while the double-height expanse in the dining area allows heat to circulate upstairs and provides a visual connection between the different levels."

The roof overhangs the walls to provide sheltered space, as well as ensure rooms inside don't overheat

The open-plan layout features ample glazing to create a light-filled home

A mezzanine landing overlooks the striking pink kitchen zone

The change in floor level between the living areas – the more formal space is on a slightly lower storey and is accessed by two wide steps – ensures each zone is clearly defined, yet there is still an easy flow between them. Scott also invested a lot of effort into making sure all the windows were placed in such a way as to bring natural light into the house and to frame distinct vistas.

The ground floor has a separate utility room with lots of storage space and an adjoining shower room. This allows outdoor enthusiast Roger to wash and change after running or climbing. The couple also use it to store their outdoor clothing for when they're gardening or walking the dog. A

WE LEARNED...

USING A COMPANY that offers a design and build package meant that it was easy to keep a track of financial outlay, while the system of staged payments also worked well.

WORKING WITH MASTER CRAFTSMEN was a really positive experience. Bespoke woodwork has been integrated throughout the house and there was ongoing collaboration about how this should look. As a result, the house is truly bespoke.

IN HINDSIGHT it might have been better to contract trades like electricians and plumbers ourselves, instead of them being subcontracted by Makar. It wasn't always easy to keep a handle on which stage of work was happening when, and sometimes our preferences and wishes got a bit lost in translation.

THINK ABOUT WHERE things will be positioned from the beginning of the project, such as thermostats – ours have ended up in key areas that we had originally designated for large artworks, which can't go there now.

Right: The landing features glazed panels in the balustrade to allow light to flow into the upper storey

downstairs loo and a carport with a large accessible loft space rounds off the layout in this storey. Should the need arise, the carport could be adapted to provide further living accommodation.

Upstairs there is a mezzanine space overlooking the kitchen, which Roger regularly uses for yoga practice; its glass balustrade ensures natural light infuses the whole property. There is also a small multi-purpose space here containing a sofa bed and workstation. It's become known as the star room due to its generously proportioned Velux window that captures beautiful sky views at night.

Structure & sustainability

The house has been built with a post-and-beam frame and structural insulated panels (SIPs), alongside a prefabricated pod that contains the guest bedroom and bathroom. This element had to fit on to the back of a delivery truck and fall within a weight limit of five metric tons. "The fact the property was largely put together in factory conditions means the construction was very smooth," says Roger.

The capital carbon cost of the building materials – that is, the amount of energy used to produce them, and their associated emissions – were a major consideration for the couple. Makar makes a point of sourcing locally grown wood, so the larch cladding and Douglas fir used for the timber frame were grown in Scotland. This fitted with the couple's aspiration to create a sustainable home. The larch is untreated, so over time it will naturally weather and the house will blend into its wooded context. Makar's timber first policy and its ethical sourcing of materials was one of the reasons that the house was Highly Commended in the 2019 Association of Sustainable Building Products (ASBP) healthy buildings awards.

The property has extensive glazing that maximises passive solar gain, but with overhanging eaves, both to provide shelter for the patio areas beneath, and to moderate the amount of direct sunlight that can penetrate the house when the sun is high in the sky.

A woodburning stove with glass on two opposing sides radiates a sense of cosiness in the sitting and dining areas and its flames can

be seen and enjoyed in the kitchen. Its output supplements the underfloor heating, which runs throughout the ground floor.

Due to the high thermal efficiency of the structural envelope there is no need for heating upstairs. However, the stove flue extends upward and provides some supplementary warmth. A mechanical ventilation and heat recovery system (MVHR) extracts warmth from outgoing air and uses it to heat the incoming flow. "The purity of air in the house is just wonderful," says Margaret. "Even when we pour a bath or have a shower, there is no condensation. During the hottest days of last summer when a neighbour's house went up to 35°C, ours had a steady pleasant temperature all season long."

On site

Although Makar provided a project manager, Roger and Margaret wanted to keep up-to-speed with the progress of the build. So, every two to three weeks, they drove across Scotland in their camper van, staying close to the site for a few days at a time. A high point was witnessing the pod being put into place. "It was delivered in one piece and craned into position to within a margin of 3mm," says Roger. "It was incredible to see the team making that happen."

The build had to be financed through savings because the couple's previous residence is currently being let out to tenants, although they plan to sell it in the near future. Under Makar's turnkey package, the total was agreed in advance and a payment was made as each stage of the project was completed. Makar also made sure that the correct insurance was in place at all times. They took responsibility for cover of a given phase until it had been paid for and handed over, at which point Roger and Margaret's insurance took over.

In this bedroom, a floor-to-ceiling glazed panel follows the angle of the vaulted ceiling

A new community

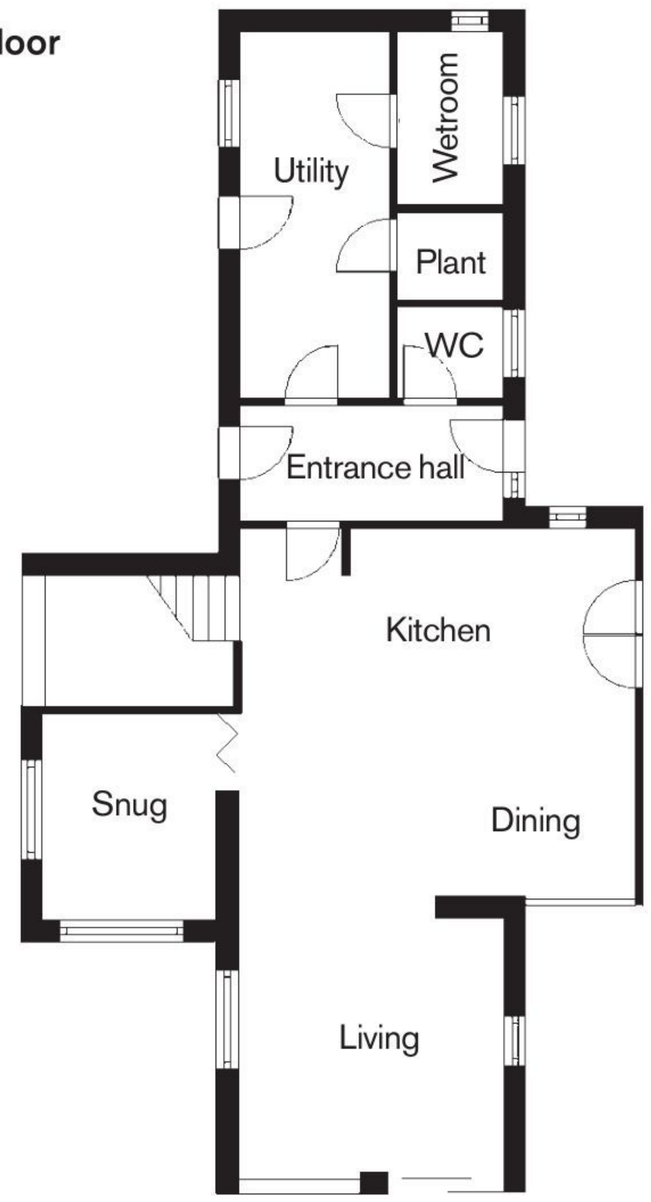
One of the main pleasures of living at Tara Green is that its location facilitates a vibrant social life. The neighbours all built homes at around the same time, so a cohesive and friendly community was established from the outset. The house also lends itself to hosting friends and family. In fact, last year a procession of around 50 guests came to stay. "Our home is just such a beautiful place to be," says Margaret. "There is something about the sense of endless sky, lots of lights and a peacefulness that you get living here. It is lovely to be able to share your home with people who appreciate it and to hear that echoed in their words. People go away with a sense of relaxation and contentment."

Useful contacts

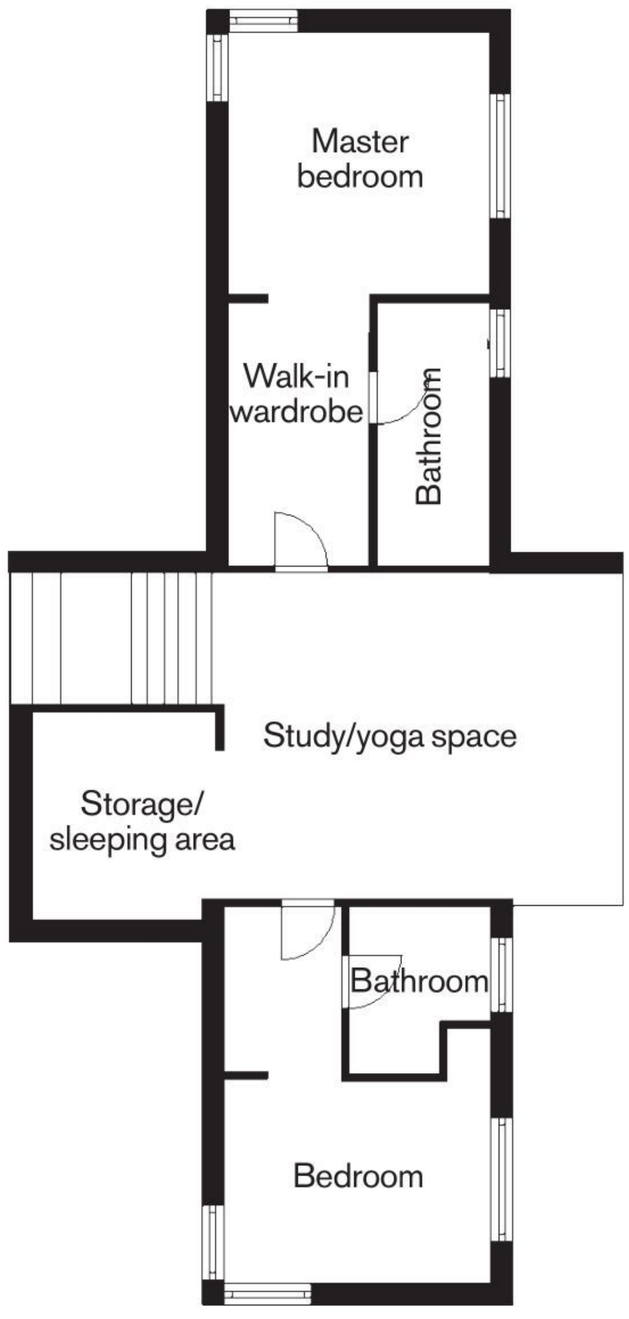
ARCHITECT & CONTRACTOR **Makar** 01463 709993 www.makar.co.uk ENGINEER **Fairhurst** 01463 724544 www.fairhurst.co.uk WINDOWS TREECRAFT **Woodwork** 01862 810021 www.treecraft-woodwork HEATING ENGINEER **Korrie** 01463 729111 www.korrie.co.uk BESPOKE FURNITURE DESIGN **Darren Barclay** 01997 433595 www.darrenbarclay.co.uk ELECTRICIAN **ICM Electrical** 01808 521709 www.icmelectrical.com OAK FLOORING **Russwood** 01540 673648 www.russwood.co.uk

Floor plans

Ground floor



First floor



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closer look

Nature-inspired interiors...

Light-filled home

Having a close link to the outdoors was the couple's reason for moving here and a large part of their brief, but they've also been very successful in incorporating a natural influence indoors. The kitchen's heather-coloured walls echo the colour of the heather plants that bloom within sight of the windows. The snug walls are the same colour, while a warm-toned bathroom picks up on the hues of the corn growing in adjoining fields. A sycamore dining table was designed, with a row of irregular spindles for a base, echoing the rugged beauty of untouched nature.

TOTAL BUILD COST BREAKDOWN

Elements	Cost m²	Cost %	Total cost
Professional fees & expenses	£233	10%	£43,300
Site works & services	£173	7%	£32,100
Foundations	£78	3%	£14,500
Ground floor (Incl. decking)	£51	2%	£9,500
External walls	£445	18%	£82,800
Loadbearing partitions	£44	2%	£8,100
Intermediate floors	£35	1%	£6,600
Roof structure & coverings	£335	14%	£62,400
Rainwater goods	£12	<1%	£2,200
Erection of house	£241	10%	£44,800
Internal joinery	£383	16%	£71,200
Plumbing & heating	£168	7%	£31,200
Electrics	£142	6%	£26,500
Wall tiling	£25	2%	£4,600
Taping/filling & decoration	£7	3%	£13,400
Grand total			**£453,200**

Note: The costs shown here reflect the original prices for materials, labour and services at the time this project was undertaken. As a general guide, inflation in the construction market runs at about 3%-4% per annum.

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Sea breeze

Ocean views, a zero-maintenance garden and comfortable open-plan design... the living is easy with **John and Jennifer Rosser's** smart new timber frame home

WORDS **SOPHIE GALE**
PHOTOS **CAMILLA REYNOLDS**

You couldn't ask for a lovelier spot to sit and watch the world go by than the gallery areas of John and Jennifer Rosser's seafront home in Penarth, South Wales. "They are comfortable, calming spaces," says John. "In the distance you can see shipping moving to and from the Bristol Channel and Monkstone Lighthouse keeps an eye over everything. You'll find us here with a coffee at some point most days, or out on the balcony with a cocktail when the weather's warm!"

Well, the couple should raise a glass or two, as they can now enjoy their retirement back in the small town where they both grew up. Their timber frame project achieved a feat not often managed; it was fully constructed in just over seven months and came in £3,000 under budget, with few hitches along the way.

The couple are experienced self builders, which partly accounts for why they breezed through construction work. This is the third home they have constructed in the surrounding area over the past two decades. Previous projects were of a similar nature but on a larger scale; a desire to downsize and return to Penarth was the motivation for the recent move. "We had over an acre of land and that's a lot of lawn mowing!" says John. "We wanted more time for walking, taking holidays and for Jennifer to play golf."

Excellent credentials

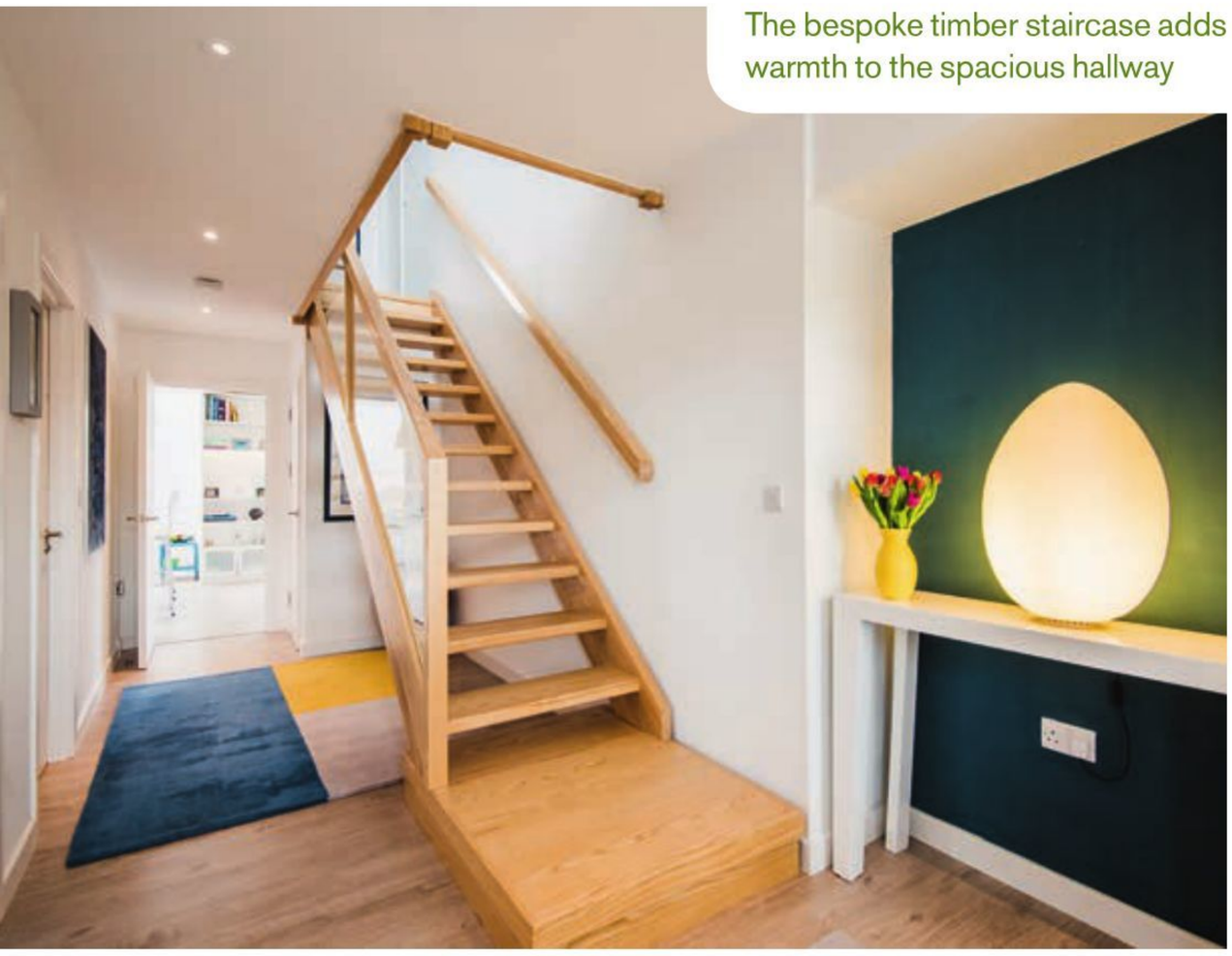
However, John's track record in housebuilding doesn't stop there. In fact, he is an accomplished architect who has spent decades designing private abodes and official buildings. He worked on the Welsh government offices in Cardiff, at Cathays Park, for which he was named Project Manager of the Year in 1981 by the industry body APM. Having designed dozens of homes in the local area whilst working freelance, John finally retired last year, producing the couple's new Penarth residence as his swansong. Meanwhile, Jennifer also had a career in property, working as a human resources officer at a housing association.

It was through his job that John was lucky enough to come across the coastal plot that the couple now call home. These days Penarth is a fairly built-up seaside resort, which means standalone sites can be quite hard to find here; planners are happier to allow discreet infill opportunities than more substantial projects. So John's ears pricked up when a contractor he worked with mentioned that he had just erected a fence in a nearby garden to create a building plot with full planning permission.

The land was flat with easy access to an existing road, where gas, water and electricity supplies could easily be tapped into. It was south-facing, with sea views, and only a short walk from the beach. "We hadn't yet decided to self build again, but this was too good to miss," says John. The couple wasted no time in getting in touch with the seller. They put in an offer before the plot was officially up for sale, which was accepted in November 2015.

The site came with full permission and plans, but as the designs were not to the couple's taste, they submitted new proposals a

Pops of colour in the interior finishes liven up the open-plan kitchen/living/dining zone



The bespoke timber staircase adds warmth to the spacious hallway

FACT FILE

NAMES John & Jennifer Rosser

OCCUPATIONS Architect & human resources officer, both retired

LOCATION Vale of Glamorgan, Wales

TYPE OF PROJECT Self build

STYLE Contemporary

CONSTRUCTION METHOD Timber frame

PROJECT ROUTE Self designed, contracted out a project manager

PLOT SIZE 356m²

LAND COST £298,500

BOUGHT November 2015

HOUSE SIZE 215m²

PROJECT COST £312,000

PROJECT COST PER M² £1,451

TOTAL COST £610,500

VAT RECLAIM £11,604

BUILDING WORK COMMENCED August 2016

BUILDING WORK TOOK 33 weeks

CURRENT VALUE £800,000

month before the sale completed with the site owner's approval.

Mondrian is one of their favourite artists, so inspiration was taken from his geometric style for the house's aesthetic. No objections were received, and the planners only required minor amendments such as lowering the property's ridge line.

Still, it was a frustratingly slow business. "All communications had to be conducted via post," explains John. "The Vale of Glamorgan council wanted everything agreed in writing." He sent 12 letters in total, finally receiving consent in March 2016.

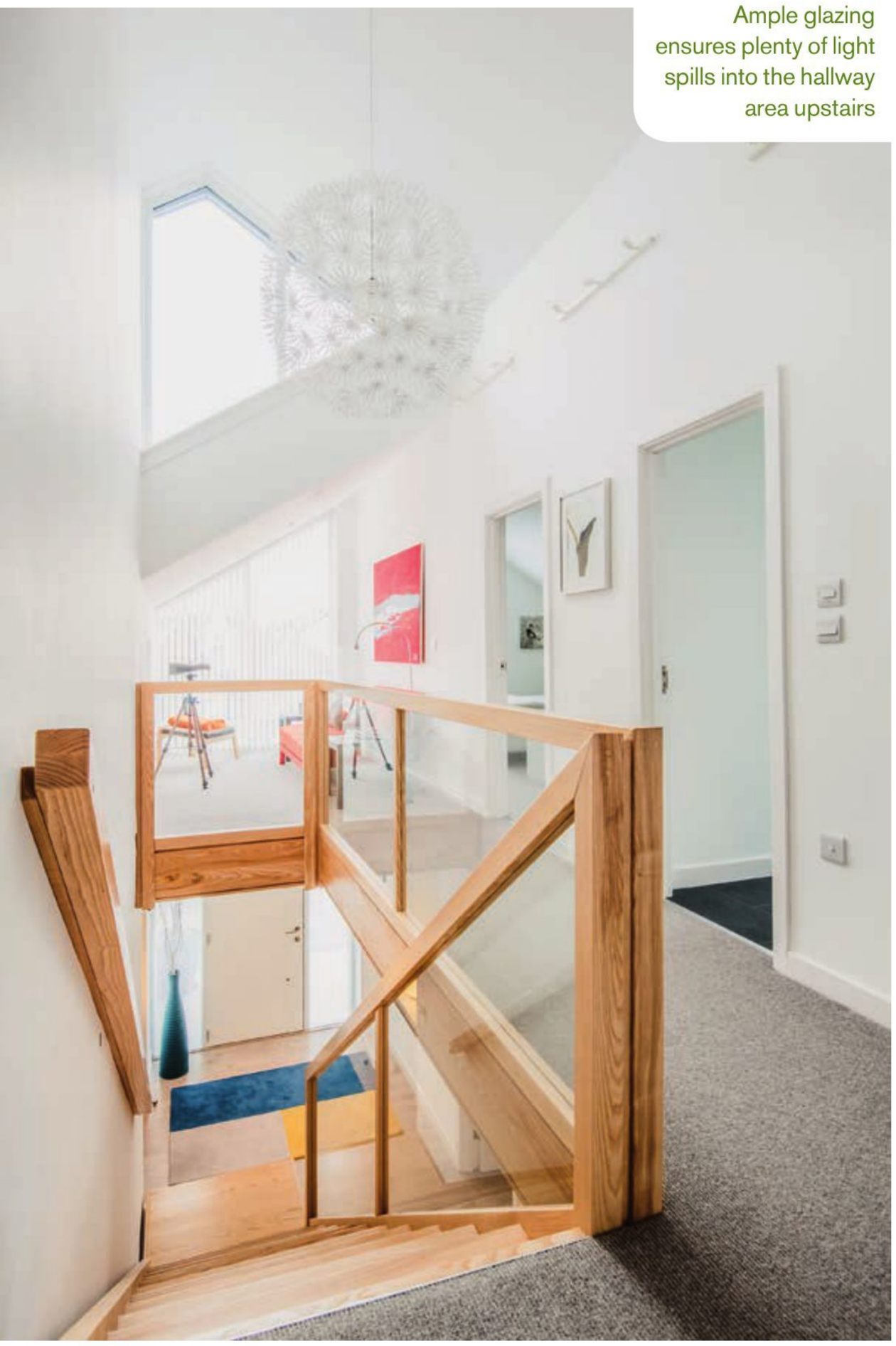
Home economics

Whether John is working on a large or small property, he believes that the same guiding principles apply: meticulous planning, competitive tendering for all contracts and a robust budget from the outset. This meant that John and Jennifer had costed every item for the scheme – even down to the nine Ikea flat-pack units for the bedrooms and walk-in wardrobe of the master bedroom – before a single work boot was seen on site.

"Comprehensive drawings and realistic costings are vital for any successful build," says John, who confesses to not being the best person to watch an episode of Grand Designs with. "I do tend to get exasperated. If the electrical contractor hasn't even been appointed when they're three-quarters of the way through a project, it's no surprise when fees start to spiral!"

The first job to be tackled on site was dismantling an old concrete driveway. It took one man and his digger just a day to break up the roadway and transport debris off site, at a cost of about £1,500.

Next came the groundworks. Being so close to the sea – the house is a two-minute



Ample glazing ensures plenty of light spills into the hallway area upstairs

walk to the clifftops and 30 minutes to Penarth Pier – means that the terrain is a rocky limestone. This is difficult to excavate, though supportive of heavy loads, so the structural engineer recommended that it would be best to install raft foundations.

The ground was dug down to 400mm, before being filled with 150mm of hardcore, 120mm of Kingspan insulation and a concrete

topping. The latter was poured in situ, reinforced with steel rods and vibrated to ensure full coverage. "The concrete was shot from a lorry into barrows," John recalls. "These were wheeled over and poured in. It took quite a few men, but it was finished very quickly. It was possible for the team to walk on the slab within two days."

As with all the main contributors, the timber frame supplier was a tried and trusted subcontractor known to John from previous

The bathroom features smart slate grey tiles and recessed shelving

WE LEARNED...

A GOOD ARCHITECT and competent mechanical and structural engineers are key. They will ensure that everything is carried out on time and to a high professional standard.

YOU MUST HAVE a good set of production drawings and a detailed specification for the whole project. This is absolutely vital if you want your tendering process to be successful.

LIST EVERY ASPECT of the build, including furniture and fittings – this is how to stop costs from spiralling!

DON'T BE AFRAID to renegotiate! We went back to suppliers after the initial tender, indicating we had found cheaper prices elsewhere. We made extra savings this way.

YOU CANNOT COST check enough! Keep going through the figures during the build and adjust as you go if any unforeseen extras occur; this way you can keep your budget on track.

professional projects. Fforest Timber Engineering supplied three lorryloads of materials to site, including a total of 10 prefabricated trusses. As specified by the structural engineer, 12 steel columns and 12 steel beams were integrated throughout the frame to provide the necessary bracing to keep the new building stable.

It took about two weeks to erect the main shell, and a further two to felt and batten the roof before making the property weathertight. The couple had no hesitation in choosing timber frame. "It is quick to put up, make wind and waterproof and easy to insulate," says John. "Wood is also strong; it's more robust than concrete blocks or bricks in many ways, as these buildings are weakened as soon as one block is removed. All the oldest structures in the country – those that are still standing after hundreds of years – are timber frame."

Not trussed up

The use of roof trusses was kept to a minimum, to help gain some extra space in some of the rooms at first floor. "Some elements were built as a cut roof," explains John. "This allowed us to create a tall ceiling height in the master bedroom of about 5m."

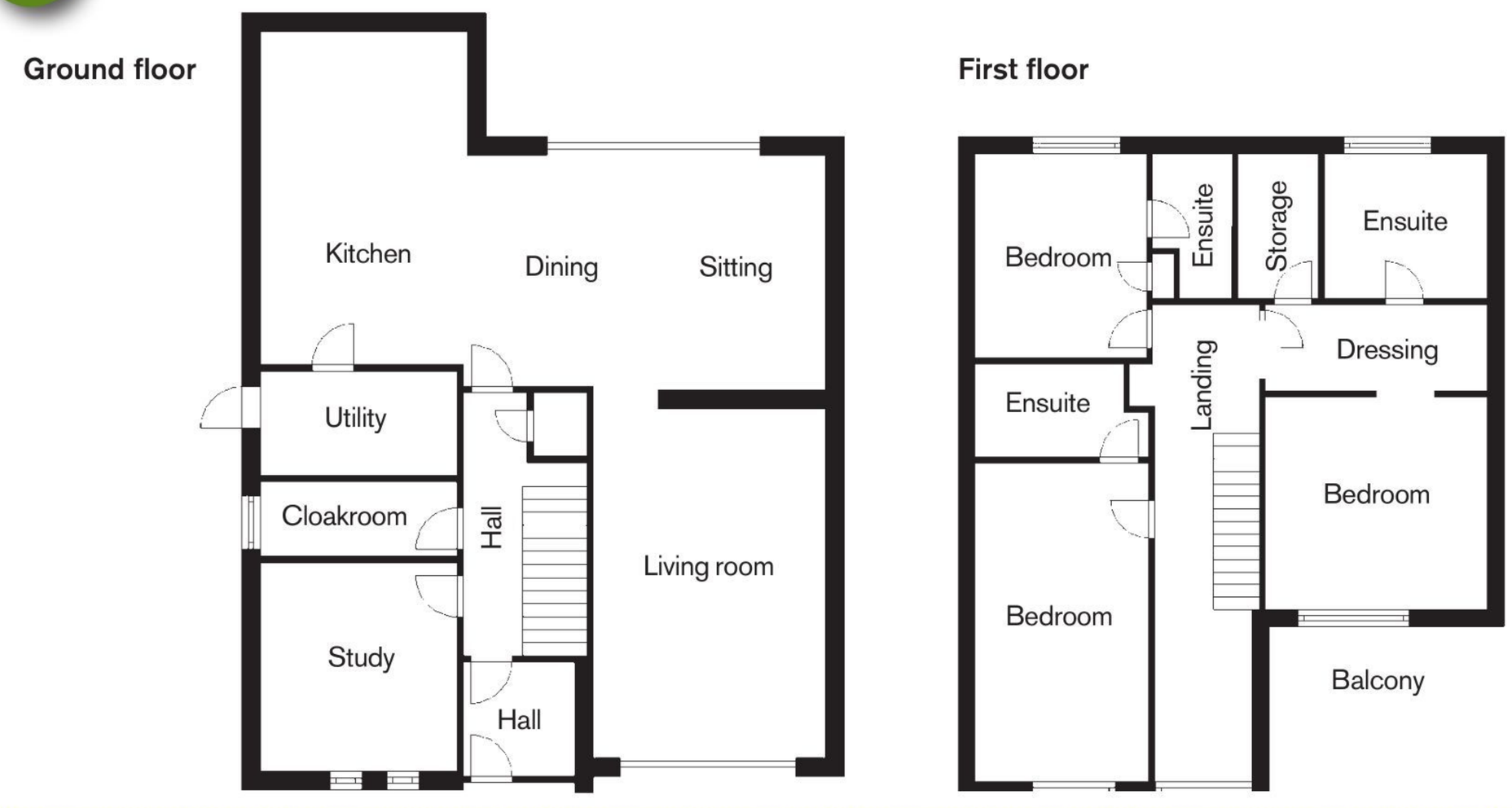
Although there is not full headroom within the loft, it still provides a functional space. "We have five grandchildren who visit often," says John. "At the moment they insist on sleeping in the attic! It is a great den area and it provides plenty of storage, too."

The house is designed to feel as spacious and airy as possible. The bespoke-made staircase has open treads and glass balustrades; its minimal design and translucency adding more light to the internal zones. The dining room, sitting room and kitchen are open-plan; the addition of large sliding doors to the front and back also help to bring more illumination to the internal spaces.

There isn't the usual division between outdoor and indoor zones. A sense of permanence characterises the outside spaces, which are just as neatly laid out as the interiors and feel like another room of the house. There are no muddy wilds here – rather artificial grass, rainproof furniture and decking. "We designed the garden around 900mm granite paving slabs that cover the ground," says John. "Everything is lined up to that basic unit, almost like a chessboard."

Anthracite grey sliding doors provide a link between the internal and exterior spaces

Floor plans



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The couple rented a nearby property during the works, enabling John to be on site at least once a day. His attentive approach and prodigious experience helped to ensure there were few hiccups during the build. "Some small issues arose, such as damp in some insulated timber panels and a glass balustrade that was dropped, but the contractors easily resolved these," says John. "Other than that, there were only a few tweaks to the positioning of doors and lighting on site, just for the sake of better ergonomics."

It was moving in itself, in April 2017, that proved to be the most testing experience of the project. "We had a lot of furniture and possessions in storage," says John. "When the time came to extricate everything, we realised much of it was no longer wanted and that we had wasted our money by storing it at all!"

Among possessions disposed of was the ride-on lawnmower. "After 19 years of mowing, it's quite a relief," says John. "The grass is still looking good after a year. Friends do a double take when I mention it's artificial as it doesn't look fake at all."

Life has relaxed in other ways, too. "We walk the coastal paths every day," says John. "We even got rid of one of the cars. Our friends, the sea, golf and the yacht club – all we need is comfortably in reach."

closer look

Sleek & stylish heating solution...

Minimalist features

At first glance, the Rossers' two-storey seaside home may not have a lot in common with the famous Eiffel Tower in Paris. Yet there is something they can both lay claim to: Hudevad radiators. On the ground floor of the couple's home, which is open-plan with minimal wall space, the Rossers opted for underfloor heating, so when it came to the upstairs, a similarly understated approach was wanted and slimline Hudevad radiators fitted the bill.

Manufactured in Denmark, these sleek-looking units use cutting-edge technology to keep rooms toasty with pipes and valves concealed beneath smooth and sometimes colourful exteriors. The result is units that are either unobtrusive, or statement pieces that can be disguised as benches, for example. "They are a little more expensive," says John, "but they are worth it for such a great design." John and Jennifer chose white heaters, each one projecting only 70mm from the wall.

TOTAL BUILD COST BREAKDOWN

Elements	Cost m²	Cost %	Total cost
Fees	£27	2%	£5,700
Preliminaries	£114	8%	£24,500
Foundations	£122	8%	£26,200
External windows & doors	£60	4%	£12,900
Timber frame package	£189	13%	£40,600
Roof covering	£44	3%	£9,500
Internal & external walls	£109	7%	£23,390
Floor, wall & ceiling finishes	£233	16%	£50,150
Joinery & fittings	£45	3%	£9,600
Plumbing & heating	£220	15%	£47,360
Electrics	£38	3%	£8,250
Decorating	£53	4%	£11,400
Landscaping, incl. garden room	£165	12%	£35,600
Miscellaneous	£32	2%	£6,850
Grand total			**£312,000**

Note: The costs shown here reflect the original prices for materials, labour and services at the time this project was undertaken. As a general guide, inflation in the construction market runs at about 3%-4% per annum.

Useful contacts

STRUCTURAL ENGINEER **Steve Morgan Associates** 01633 266244 www.smalimited.co.uk MAIN CONTRACTOR (INCLUDING EXTERNAL WORKS & PLUMBING AND HEATING) **Delta Property (Cardiff)** 02921175175 TIMBER FRAME SUPPLIER **Fforest Timber Engineering** 01792 895620 www.fforest.co.uk VELUX ROOF WINDOWS **Sterling Build** 01303 258641 www.sterlingbuild.co.uk ELECTRICAL CONTRACTOR **Westlec Electrical** 01446 412603 STAIRCASE **J S Bowsher** 01446 722878 www.jsbowsher.co.uk RADIATORS **Hudevad Britain** www.hudevad.com BATHROOM FITTINGS **Homerite Bathroom Centre** 02920 711001 www.homeritebathrooms.co.uk FRONT DOOR AND SCREEN **Kloeber UK** 01487 740044 www.kloeber.co.uk UNDERFLOOR HEATING **Continental Underfloor** 03338 001750 www.ufh.co.uk INTERNAL DOORS AND EXTERNAL CLADDING **Monmouthshire Timber Supplies** 01633 414414 www.montimber.co.uk HARDWARE **Project Hardware Cardiff** 02920 433900 www.projecthardware.co.uk UTILITY ROOM UNITS **Benchmarx Kitchens and Joinery** 02920 487091 www.benchmarxkitchens.co.uk LAMINATE FLOORING **Tile and Ceramic Solutions** 01484 320040 www.uktcs.com KITCHEN UNITS **Howdens Joinery** 02920 461368 www.howdens.com KITCHEN WORKTOPS **Llandaff Laminates** 02920 777333 www.llandafflaminates.co.uk WALL TILES **Walls and Floor** 01536 314730 www.wallsandfloors.co.uk GAS FIRE **The Fireplace Company** 01524 847398 www.thefireplacecompany.co.uk EXTERNAL DECKING **Cladco Profiles** 01837 659901 www.cladco.co.uk GRANITE PAVING SLABS **Simply Paving** 08081 155636 www.simplypaving.com

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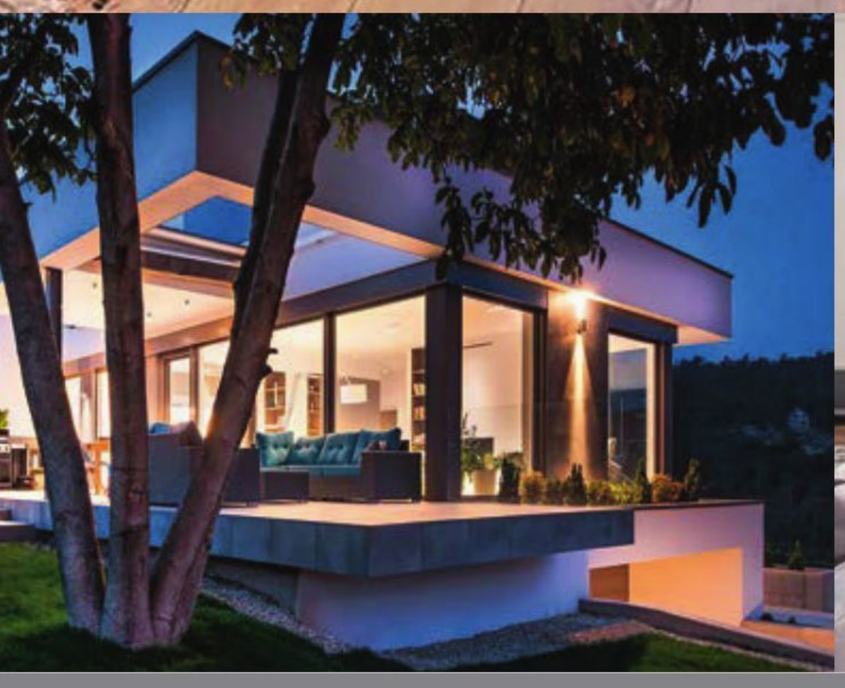

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Make the connection

Richard Ball has converted a Victorian farm workshop, adding a single-storey extension that provides a light-filled contrast to the characterful original building

WORDS **VICTORIA JENKINS** PHOTOS **LISA LODWIG**

FACT FILE

NAME Richard Ball
OCCUPATION Technology sales
LOCATION Warwickshire
TYPE OF PROJECT Conversion & extension
STYLE Traditional with contemporary extension
CONSTRUCTION METHOD Brick & block
PROJECT ROUTE Architect designed, project managed by main contractor
PLOT SIZE 0.5 acres
PROPERTY COST £250,000
BOUGHT 2013
HOUSE SIZE 110m²
PROJECT COST £375,000
PROJECT COST PER M² £3,409
TOTAL COST £625,000
BUILDING WORK COMMENCED January 2015
BUILDING WORK TOOK Two years
CURRENT VALUE £650,000

Above: The new extension is clad in reclaimed red brick from an old pub

Richard Ball spotted an old farm workshop in Warwickshire when he was idly browsing the internet one evening. It was a single-skin red brick building dating from the 1890s, and when he came to view it, he saw the concrete floor and wooden mezzanine that was still storing long-abandoned old tools.

The big lure was that it came with planning permission for a conversion and extension to create a three-bedroom dwelling. As he had always wanted to undertake a major project, he bought it, financing the move using a self build mortgage from the Hanley Building Society. "It had attracted a lot of interest but it was too small to make a family home," he says. "It had a roof, there was water and an electricity supply – but nothing else. It wasn't at all habitable."

At some point, the workshop had acquired two names: one was the Old Dairy and the other the Old Schoolhouse. There was even

The old children playing sign was hung on the wall at least 80 years ago, when it might have been a teaching room for a time

an old-fashioned metal 'children playing' sign on one of the external walls. "My neighbour, who is now in his eighties, grew up in the farmhouse next to the workshop and he remembers that sign there even when he was boy," says Richard. "But as far as I know it's only ever been a workshop." Both buildings were part of a wider historic estate, of which the main house (a stately home) had been converted into 11 apartments in 2000.

A change of plans

Richard employed architect Martin Smart of Hayward Smart Architects to readjust the design to suit his specific needs. It would take two years to get the scheme passed by the local planners in Stratford-upon-Avon, and then a further two years to complete the renovation and building work, so it was not until 2017 that the project was finished. "The first point we noted was that the new entrance was located on the rear side, furthest from the parking and overlooking neighbouring properties," says Martin of the original plans. "Internally the first-floor arrangement would not work as indicated due to the height of the roof, with many unusable spaces."

The previously approved scheme included a two-storey extension to the side of the dairy with matching traditional details. However, this option would change the character of the existing building by creating a wing with a new pitched roof intersecting the original fabric. "Our approach was fundamentally different," he says. "We wanted to retain the structure in its present form and character, and extend with a contrasting single-storey contemporary addition, linked by a very lightweight, fully glazed entrance lobby."

There was some discussion over the size of the first design, which led to changes to the scale of the extension. "This resulted in a number of amendments to ensure the addition remained

subservient to the existing building, which was challenging as it is very small," says Richard. Although the extension has a contemporary character in its minimal detailing and large amounts of glazing, it's clad in bricks that came from a demolished old pub in Stratford, via a reclamation yard.

Key features

"The new addition has been designed as a high quality, modern building that cuts into the sloping site, reducing its impact on the setting," says Martin. "A reclaimed brick garden wall along the driveway side of the property visually screens the extension from public view. The contrasting style and transparent link enforces the visual separation. The existing building has been conserved by retaining the main features, and some conservation rooflights have been added to provide natural light upstairs."

A wide span of sliding doors opens the new space onto the patio area

Renewable energy and other sustainable measures have also been incorporated, says Martin: "There's now a ground source heat pump with two bore holes at 110m deep, underfloor heating, solar panels in the garage roof and a rainwater tank to supply the loos and the washing machines. It's all very economical." A new mechanical ventilation and heat recovery system (MVHR) ensures that a flow of fresh air comes into the house without any loss of heat inside.

The first main job for builder Rob Berner was to excavate the floor of the old workshop to provide more headroom upstairs. Then he

I LEARNED...

WHATEVER BUDGET you've finalised for your plans, it will never be enough, so it's vital to have a contingency fund.

DESPITE the endless finessing of detail, be prepared for not achieving exactly what you expected.

UNDERFLOOR HEATING is great and I would definitely recommend it, along with ground source heat pumps. I don't have a gas supply, but my energy bills for the past 12 months came to just £900 – that's for domestic hot water, heating, lighting and cooking.

YOU WILL NEED TO make your choices very early on in the build for everything from tiling to kitchen units, from electrical points to bathroom fittings – much sooner than you think, as your builder needs to be able to plan them in.

A contemporary oak staircase leads up to the first storey in the original part of the building

removed the roof to put in a very high level of Celotex insulation ("higher than Building Regs required," says Richard) before replacing it with a mix of original and reclaimed tiles. The new upper storey features oak flooring and is accessed via a handmade oak staircase.

On the ground floor of the old workshop, Rob laid underfloor heating and then poured a concrete screed above it. Porcelain tiling was placed over that, and the same flooring flows into the new space. New wiring was installed and the plumbing extended, then the whole interior was plastered. Two RSJs in the addition hold up the flat roof and create the wide span needed for the floor-to-ceiling sliding glass doors that open on to the terrace.

At the same time, Richard converted the upper floor of his nearby double garage to supplement the space in the main house. This zone now contains an ensuite bedroom plus an office and small kitchenette, accessed by an external metal staircase. During the build, Richard stayed for a while in his old home in Birmingham, and after selling that, rented a flat in the main house on the estate. Then, when the space above the garage was ready, he moved in there. By December 2016 the converted workshop and extension with glass link was structurally completed, and by the following Easter the kitchen was installed and Richard could finally move in.

The glazed extension

Whilst the original building is traditional in form and materials, with arched headed windows and doors, the new addition contrasts thanks to large expanses of frameless glazing and sliding doors.

Low profile, thermally broken aluminium doors and windows from Greenways Contemporary allow maximum natural light to

enter the building, while flush thresholds and the use of the same floor finishes inside and out enable the extension and outside space to flow together. Hayward Smart Architects has created a glazed corner window detail with no visible supporting structure, which further enhances the transparent nature of the new building. A large overhanging roof forms a canopy above the sliding doors and provides weather protection for the outside terrace.

The frameless glass link (also provided by Greenways Contemporary) creates a new entrance between the new and old to reinforce the separation between the two elements. It also allows for a view through the building to a focal water feature in the rear garden. A simple palette of external materials – the reclaimed facing brick, plus black-stained timber – combine well with the black powder-coated window frames.

All in the details

The extension comprises a big open-plan kitchen-dining-sitting room with German units from Rotpunkt and V Zug appliances. Beyond the glass sliding doors is a wide terrace looking on to a garden that attracts all sorts of wildlife, from muntjac deer through to pheasants, rabbits and squirrels.

In the old Victorian workshop, the two original round windows towards the top of the building remain in place, single glazed as opposed to the double glazing that's been installed everywhere else. The original structure hosts two ensuite bedrooms, with the one on the ground floor incorporating a freestanding bathtub in the bedroom. There is also a downstairs cloakroom.

All the lighting and lamps – which were designed and supplied by Lightmaster Direct – are wired into the floor so no cables can be seen. Richard can operate these and other features via his phone. "I can tell the bath to fill up at the right temperature and correct level without moving from my seat – which might be miles away in my car as I'm driving home," he says. "I travel to America a great deal and stay in boutique hotels a lot, so I knew what look I wanted," he says. "Comfortable, luxurious and totally uncluttered."

The sanitaryware is from Villeroy & Boch and Burgbad, all supplied by Designer Bathrooms by Michael

The downstairs bedroom features a freestanding bath

closer look

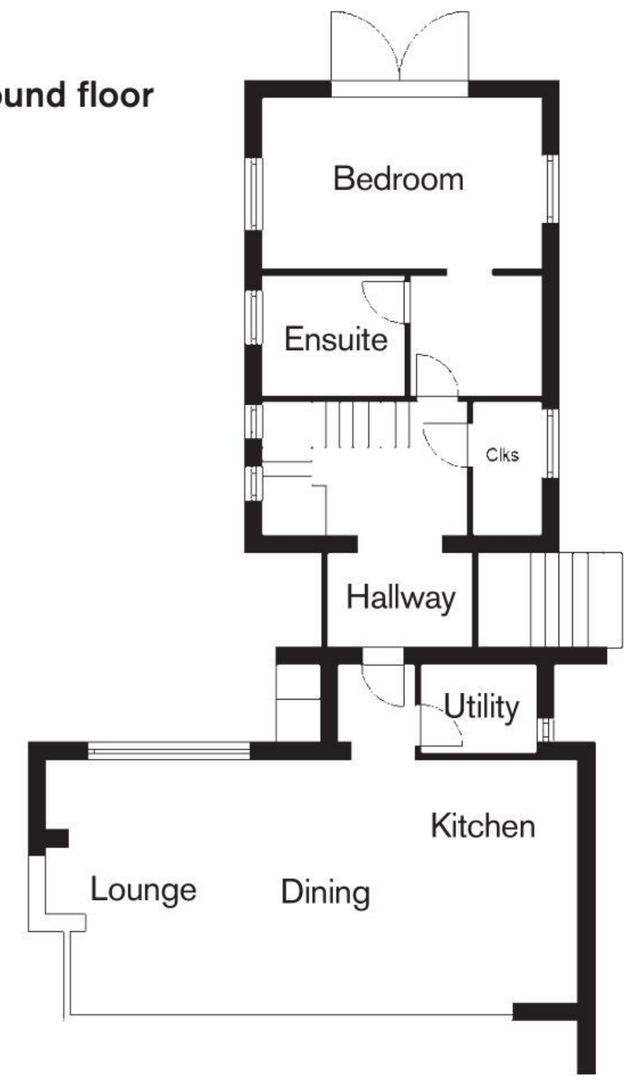
Lighting & blind control...

An automated home

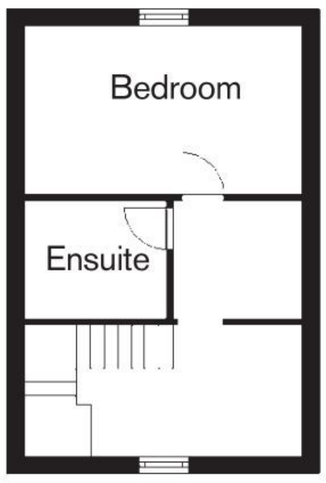
Richard worked with a lighting design specialist, Lightmaster Direct, to install a Philips Dynalite control system for his home. A variety of scenes have been programmed in, so he can change the mood at the touch of a button. "For example, there might be a circuit with four floor washers, another with a central pendant and then 12 downlights split between three more circuits. So you can have an 'all on' or 'all off' button, or one button on your switch might turn on the pendant and the floor washers for a low level, intimate scene, another can activate one set of down lights with the pendant for task lighting, and then there can also be a dimming up and dimming down button," Richard explains. "The possibilities are endless." Lutron automated blinds have been integrated into the system, so they can be operated by the same controls.

Floor plans

Ground floor



First floor



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TOTAL BUILD COST BREAKDOWN

Elements	Cost m²	Cost %	Total cost
Preliminaries	£182	5%	£20,000
Foundations	£182	5%	£20,000
External walls & windows	£500	14%	£55,000
Roof structure & covering	£291	9%	£32,000
Internal walls	£100	3%	£11,000
Floor, wall & ceiling finishes	£364	11%	£40,000
Joinery & fittings	£564	17%	£62,000
Plumbing & heating (incl. bathroom & kitchen)	£409	12%	£45,000
Electrics	£345	10%	£38,000
Decorating	£63	2%	£7,000
Fees	£182	5%	£20,000
External works	£227	7%	£25,000
Grand total			**£375,000**

Note: The costs shown here reflect the original prices for materials, labour and services at the time this project was undertaken. As a general guide, inflation in the construction market runs at about 3%-4% per annum.

Useful contacts

ARCHITECT **Hayward Smart Architects** 01608 66100 www.hsarchitects.co.uk STRUCTURAL ENGINEER **Forward Structural Consultants** 01295 722805 www.forwardtsructural.co.uk MAIN CONTRACTOR **Rob Berner Builder** 07980 931870 ELECTRICIAN **David Ritchie Electrical** 07786 030429 www.davidelectrical.co.uk BATHROOMS **Designer Bathrooms by Michael** 0121 444 0101 www.designer-bathrooms.co.uk KITCHEN **Bower Willis** 01608 690870 www.bowerwillisdesigns.co.uk GLAZING **Ultraline** 0121 550 3066 www.ultraline.co.uk LIGHTING **Lightmaster Direct** 01608 682115 www.lightmaster-direct.co.uk TILES **Grespania** 0121 457 6900 www.grespania.com WOODBURNING STOVE **Dik Geurts** www.drufire.com RENEWABLE ENERGY **Stratford Energy Solutions** 01789 262411 www.stratfordenergy.co.uk

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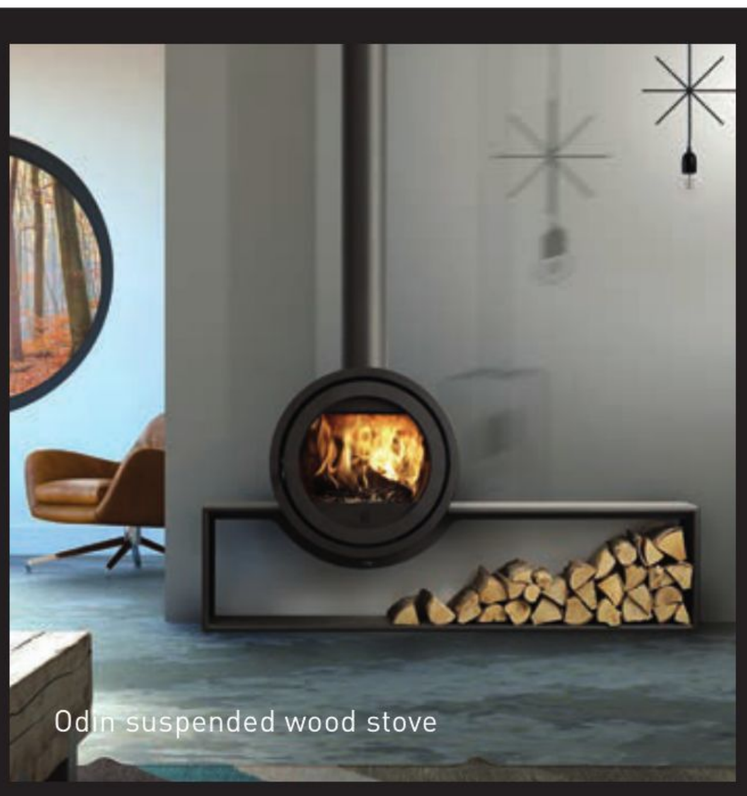

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Concrete example

Seasoned self builders **Gisela and Andrew Blee** challenged themselves with their latest project, built into a hillside in the Cotswolds

WORDS **SOPHIE GALE** PHOTOS **CAMILLA REYNOLDS**

It was a sunny day in late May 2015 when Gisela and Andrew Blee arrived by motorbike to view an overgrown plot in Stroud, Gloucestershire. The land was formerly part of a neighbouring property and was situated on a quiet stretch of lane. It had caught their eye during an idle moment of online house hunting. "The weather was beautiful," says Gisela. "It made us feel like it was to meant to be."

Andrew is a keen windsurfer, which proved a source of inspiration for working out how they could self build here. "The land was such a tangle of scrub and trees," says Gisela. "It was impossible to get a clear picture of what the views might eventually be like." So, when the couple returned to the site several times over the next few weeks to investigate further, they brought along a camera and a windsurfing mast. The camera was mounted atop the device and hoisted up among the tall Scots pines, brambles and bushes. Images captured revealed beautiful lines of sight across the Golden Valley, as this part of Stroud is known for.

Gisela and Andrew are not novice house-builders. The couple previously lived in Rugby, where Gisela, who had worked in marketing, turned her hand to managing four builds between 2009 and 2016. One

FACT FILE

NAMES Gisela & Andrew Blee

OCCUPATIONS Property developer & software engineer

LOCATION Gloucestershire

TYPE OF PROJECT Self build

STYLE Contemporary with traditional touches

CONSTRUCTION METHOD Insulating concrete formwork

PROJECT ROUTE Architect designed, construction system provided by ICF Supplies. Main contractor hired for build and shared project management responsibilities with Gisela

PLOT SIZE 0.3 acres

LAND COST £260,000

BOUGHT 2015

HOUSE SIZE 335m²

PROJECT COST £660,000

PROJECT COST PER M² £1,970

TOTAL COST £920,000

VAT RECLAIM £18,000

BUILDING WORK COMMENCED May 2016

BUILDING WORK TOOK 72 weeks

CURRENT VALUE £1,200,000

Above & below: With accommodation spread across three levels, Andrew and Gisela's house is built into the bank. 6m of excavation was required in some areas

of the projects in Rugby was their own house, while the other three were developed to be sold. "The first plot I worked with was flat, with easy connections for services – a great build to cut your teeth on," says Gisela, who continued to oversee final works and sales of two of the properties while the Stroud scheme was commencing.

However, this corner of the Cotswolds had always held a strong attraction for the Blees, ever since they'd stayed there with Andrew's father when they first met. With kids at, or approaching, university

"The ICF construction method could be used above and below ground, so we decided to go for the simplicity of one process"

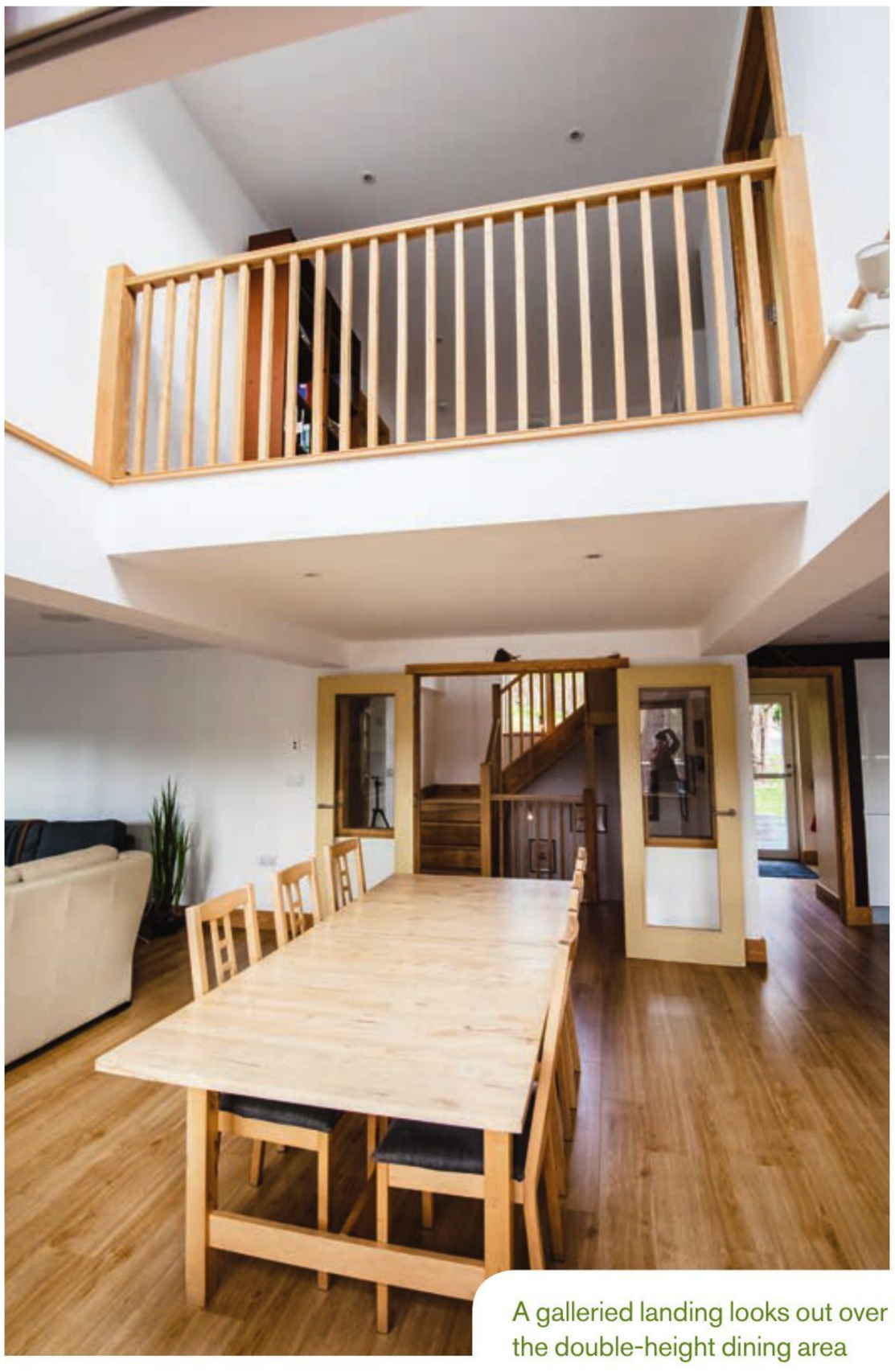
A central island forms the main hub of the contemporary kitchen. Handleless units infuse the space with a sleek, modern feel

age, the couple were tempted to relocate from Rugby. "We loved the area close to Stroud, mainly because of its walking and cycling possibilities," says Gisela. "The idea of building into a hillside, with a south-facing aspect, had always been at the back of our minds."

New layout

The plot came with planning permission for a four-bedroom house. However, after purchasing the property in October 2015, Andrew and Gisela reapplied for consent to make changes to the design. The couple were keen to lose the mock Tudor-style frontage and wanted to incorporate cedar cladding and balconies instead.

The dwelling would remain four-bedroom, with accommodation spread across three levels and much the same footprint as the original plans. However, the interior layout would be altered to better suit the orientation of the site. The pair planned to retain the position of the kitchen on the east side of the property, affording



A galleried landing looks out over the double-height dining area

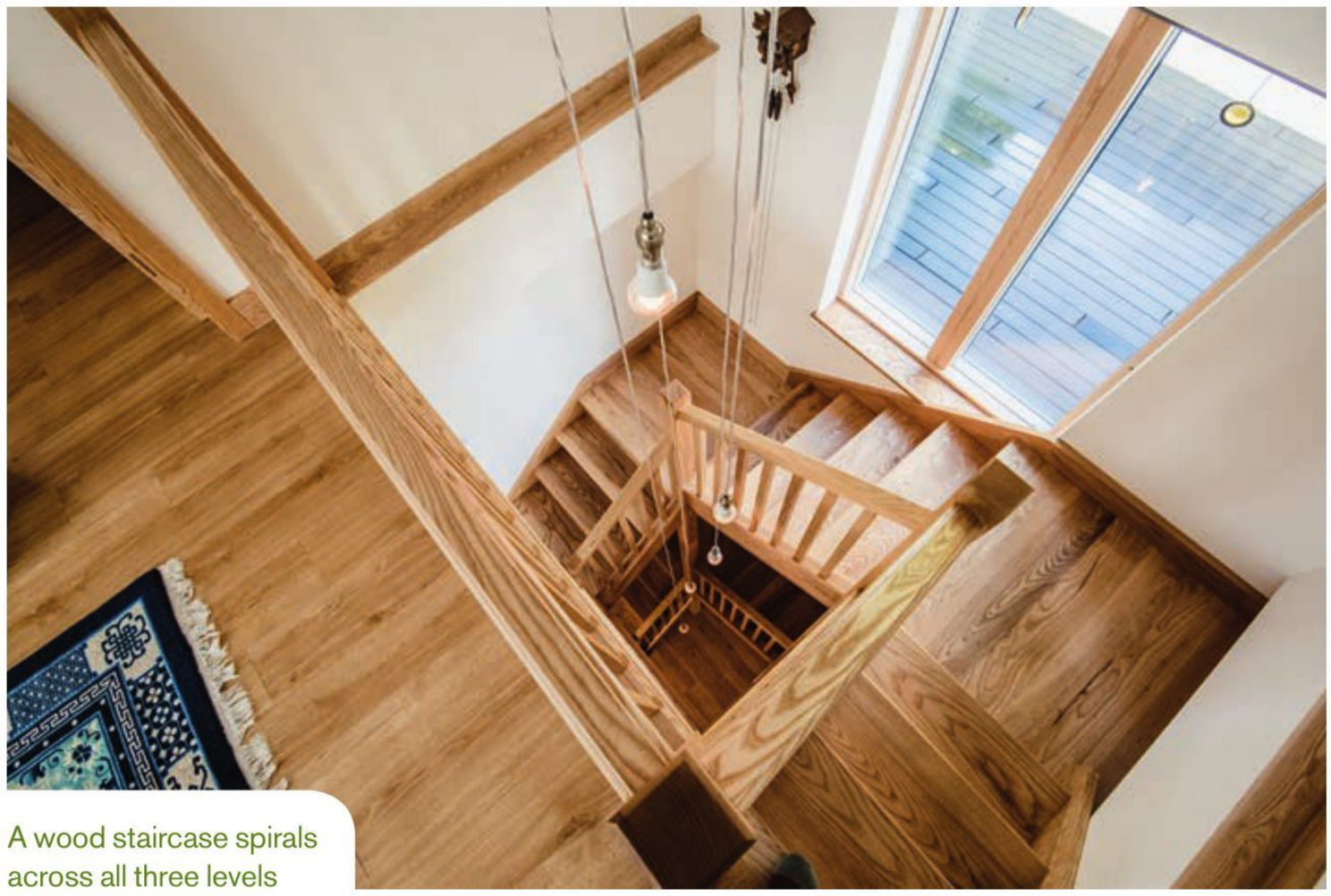
WE LEARNED...

DO SCALE DRAWINGS on graph paper for your layout. Lay over scale cut-outs of your furniture to work out the best fit for the dimensions you have.

INVOLVE SUB-CONTRACTORS such as electricians and plumbers early on. Keep talking to them throughout the project. Providing them with detailed layouts and itemised lists helps them to produce more accurate quotes.

DON'T BE AFRAID to ask questions or make comments to your builder. They don't always think of everything!

TALK TO THE NEIGHBOURS and keep them informed about big deliveries or utility companies working in the road.



A wood staircase spirals across all three levels

great natural light. The lounge, being mostly used in the evenings, went to the west. The position of the garage was also altered.

The Blees planned to use roof tiles made from reconstituted materials; at first, this detail was rejected. "The planners wanted only real stone – which is ironic since this would have had to be sourced from much further afield," says Gisela. "Luckily, we realised that the adjacent stables had existing reconstituted tiles, setting a precedent for their use. So, the council backed down." It was a good victory and saved the pair about £26,000. "The tiles were so authentically weathered that even the roofers didn't realise they weren't original."

Another sticking point was the use of brick slips, which the couple had hoped to use in place of real bricks on the lower ground floor frontage. These thin facings can be applied onto a framework beneath, making them quicker and cheaper to work with. However, the council stuck to their guns on this aspect and insisted on stone.

The Blees approached two or three contractors, but immediately warmed to local builder Ben Bennett. "He seemed a very competent, confident pair of hands," says Gisela. "We went to view a project he was working on nearby. It was very different to ours, as it was of oak frame construction, but we could see the high quality of the work."

Project priorities

Site clearance was a monster job. With deep shrubland to remove across a plot that sloped significantly at a ratio of 1:13, along with excavations up to 6m required for the retaining wall, this element accounted for just under £55,000 of the total project cost and took about two months. About 1,000m^3 of Cotswold brush and earth needed to be disposed of. "Plus, bringing heavy machinery and big lorries in was a problem, as the access roads are narrow," says Gisela.

Creating a warm, light-filled and comfortable space to live in was always the primary objective. Gisela grew up in Ireland, where the countryside is green and lush. However, her abiding memory of the houses is that they're draughty and damp. "By contrast, we have stayed in so many lovely warm homes in Germany," says Gisela,

The master bedroom benefits from a private balcony area

whose father was German. "They were solidly made and well protected against the elements." With this in mind, good insulation, a mechanical ventilation and heat recovery system (MVHR), underfloor heating and well-considered glazing positioning to make use of solar gain were high on the Blees' wish list.

The valley location, however, with its morning mists and deep frosts in winter, did not lend itself easily to damp-free living. The pair visited a self build exhibition in 2015, where they talked to a representative from Nudura, suppliers of insulating concrete formwork (ICF). This system of polystyrene blocks interlocks like enormous LEGO pieces to create hollow walls. Once filled with concrete and steel, the blocks harden to impressive strengths. "We initially thought we'd need to use separate contractors for lower and upper floors, with a cellar specialist for the subterranean parts," says Gisela. "But the ICF construction method could be used above and below ground, so we decided to go for the simplicity of one process."

Strong points

The advanced strength of the formwork, with up to 250mm concrete cores, meant the outer walls of the house were easily able to support a spacious open-plan layout on the upper-ground floor. "A hallelujah moment was realising we could in fact use the necessary retaining partition as a garage wall," says Gisela. "There was no need for spoil to shore it up. Instead, we gained an additional 55m^2 of space, which became a substantial subterranean garage."

The polystyrene blocks that take the concrete pour provide two layers of high-quality insulation. When combined with a mechanical ventilation and heat recovery system, the result is an energy efficient house with an even temperature throughout the year. A lobbied entry helps, as does the angling of the dwelling, which maximises natural light. For these reasons, along with the energy savings they're making thanks to solar photovoltaic (PV) panels on the roof, gas and electricity bills are low – just over £70 a month for both.

It took longer than hoped to get the building watertight. "The house is rectilinear, so I thought it would be fast to construct," says Gisela. "But I hadn't accounted for the curved garden retaining wall and many gable ends, all of which meant cutting the polystyrene blocks to size on site, adding time." The pair also hadn't initially appreciated the extent of works associated with each lift. "With ICF, the pour happens in a day. But then each layer takes seven days to cure. Several weeks were needed for the next lift to be fabricated – so it wasn't lightning quick." The slab foundation went down in May 2016, and the main house shell was completed in October.

Money pressures

There were other pressures building by Christmas 2016. Still trying to sell two properties in Rugby, as well as their own house there, the Blees were hit with cashflow problems. "It was a big risk," says Gisela. "Over Christmas we had no money. Presents were small that year. Our tree was a potted 120mm tall version!" The couple used online budget app Moneydance to keep a tight overview of ingoing and outgoing funds, and at this point they were glad about their builder's slightly erratic billing habit. "Luckily he didn't charge us over the Christmas period – we couldn't have paid it," says Gisela.

By spring, services were going in apace, with MHVR neatly boxed-in behind pantry walls and electrics inlaid into the ICF via channels cut with a hot knife. "It glides through the polystyrene and is a very accurate way to do things," says Gisela. Finally freed from ties in Rugby, the couple moved into their rental house near the site. The two-bedroom cottage was home not only to the couple, but sometimes their children and dog Peppa, plus occasionally their plumber and his apprentice, who travelled from Northamptonshire.

Completion was now in sight. "Being there in person to answer questions helped move things on considerably," says Gisela.

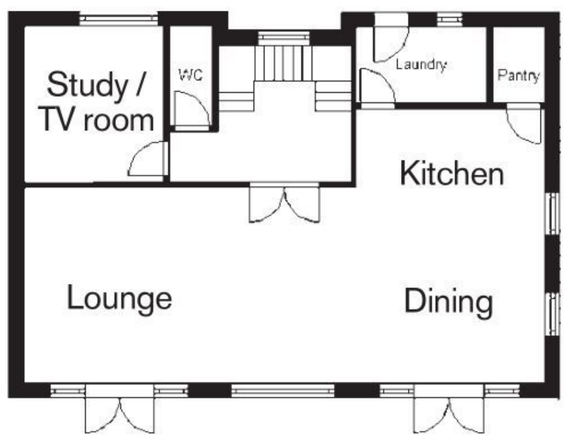
The finished house, which the couple moved into in early summer 2017, has a homely air, with its gables and Alpine-style cladding. There are numerous architectural details, but the inside of the property remains uncluttered. Gisela was amused that her mother described the house as "Spartan", though "Shaker" might be more appropriate for the understated interiors and wood finishes.

For Andrew and Gisela, the overall comfort of the house is more important than the decorative finishes. Top marks go to the kitchen, a light-filled suntrap featuring an outdoor walkway to the sundeck. Temperatures are perfect throughout, too. "To be honest, we really notice the difference when we go and stay at other people's homes!" says Gisela. "Especially in winter. You could say we've gone soft."

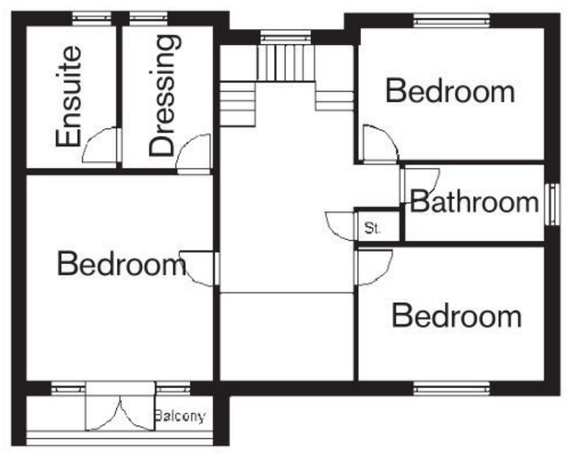
Useful contacts

SOLICITOR **Brethertons LLP Solicitors** 01788 579579 www.brethertons.co.uk PLANNING CONSULTANT **Urban Aspects** 01242 806170 www.urbanaspects.co.uk ARCHITECT **Chapman Design** 07859 049197 ARCHITECTURAL & PLANNING CONSULTANTS **Ian Barber Associates** 01227 770511 www.ianbarber.net STRUCTURAL ENGINEER **J Turner & Associates** 01527 835000 www.jta.uk.com SUPPLIER OF ICF SYSTEM **ICF Supplies** 01268 542748 www.icfsupplies.co.uk ICF MANUFACTURER **Nudura** www.nudura.com MAIN CONTRACTOR **S&C Bennett Construction** 07970 263110 RENDER, PLASTERING & PAINTING **T L Freeman** 01452 302761 WINDOWS **Velfac** 01536 313552 www.velfac.co.uk ROOF TILES **Fairford Roof tiles** 01285 712169 www.fairfordrooftiles.co.uk BALCONIES **Balconette** 01342 410411 www.balconette.co.uk GARAGE DOOR **Progressive Systems** 01453 882891 www.progressive-systems.co.uk PLUMBING **Home Plumbing & Electrical** 01604 889375 www.homeplumbingandelectrical.co.uk ELECTRICS **City Electrical Factors** 01763 272717 www.cef.co.uk, **MDP Electrical** 01453 810930 www.mdpelectrical.uk.com KITCHEN, UTILITY, BATHROOM, IRONMONGERY, FLOORING & INTERNAL DOORS **Kuche & Bagno** 01788 866930 www.kucheandbagno.co.uk JOINERY **PM Large Joinery** 01453 757220 www.pmlargejoineryltd.co.uk STRUCTURAL WARRANTY **BuildStore** 0345 223 4888 www.buildstore.co.uk MECHANICAL VENTILATION & HEAT RECOVERY **CVC Direct** 01491 836666 www.cvcdirect.org STOVE **Elcombe Fire & Wood** 01453 700211 www.elcombefirewood.co.uk WATER SOFTENER **Cotswold Water Softeners** 01242 375001 www.cotswoldwatersofteners.com

Floor plans



Upper Ground floor



First floor

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

closer look

Natural beauty...

Covered outside space

The cedar cladding tucked under the elevated walkway and beneath the eaves brings a beautiful softening effect to Andrew and Gisela's contemporary build. British-grown Western Red cedar was specified for the finish and has been laid in a tongue and groove format. Over time, it will weather to a silvery hue. "It breaks up the areas of render and adds a bit of interest to the overall appearance of the house," says Gisela. "As it ages the colour will change. We're happy to go with it, rather than trying to preserve the original colour by treating the wood with outdoor varnish or oil products. A small eco consideration!" The builders enjoyed working with this lightweight, easy-to-handle material, too. "It also has a wonderfully fresh smell about it," says Gisela.

TOTAL BUILD COST BREAKDOWN

Elements	Cost m²	Cost %	Total cost
Building works	£1,250	63%	£418,670
ICF kit	£79	4%	£26,500
Roof tiles & triple glazing	£33	2%	£11,100
Windows & doors	£71	4%	£23,900
Glass balustrade	£11	<1%	£3,600
Plumbing	£88	4%	£29,500
Electrics	£70	4%	£23,400
Kitchens & bathrooms	£126	6%	£42,160
Carpentry	£54	3%	£18,000
Professional services	£31	2%	£10,300
Warranty	£11	<1%	£3,700
Utilities	£13	1%	£4,400
MVHR	£20	1%	£6,600
Solar electric panels	£19	1%	£6,400
Woodburner & flue	£13	1%	£4,500
Floor coverings	£22	1%	£7,300
Decorating	£20	1%	£6,800
Garden works	£15	1%	£5,200
Miscellaneous	£24	1%	£7,970
Grand total			**£660,000**

Note: The costs shown here reflect the original prices for materials, labour and services at the time this project was undertaken. As a general guide, inflation in the construction market runs at about 3%-4% per annum.

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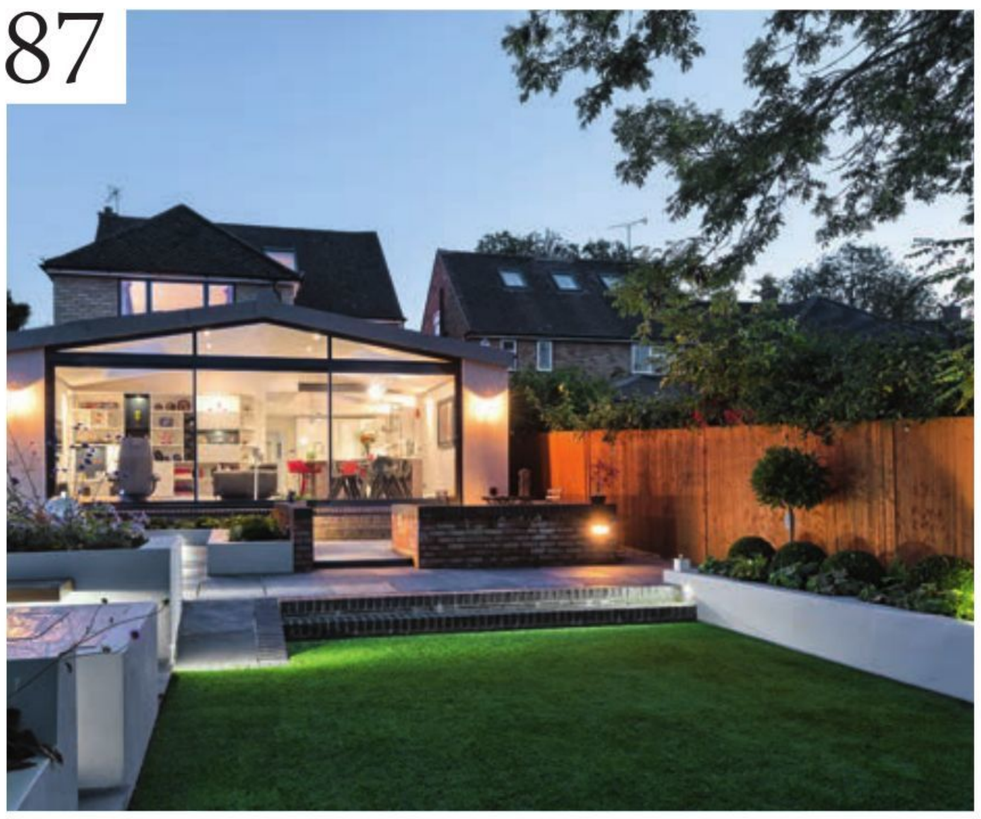

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Build It's Self Build Education House *PART 7*

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Chris Bates gives the latest update on our home building project at Graven Hill, as the SIPs roof is installed

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Could insulating concrete formwork be a a good choice for your project? Here's what you need to know

PLUS: JULIETTE BALCONIES (PAGE 81), PLANNING A STAIRCASE (PAGE 73) & SPECIFYING ENTRANCE DOORS (PAGE 93) »

Part 7

Installing the SIPs roof

Some complex design details and minute tolerances throw up a few challenges on site – but the Build It Education House roof is now on! **Chris Bates** updates us on progress

Right: A chippy created templates for the three gable ends; the most complex of which (shown in the foreground) is for the angled wall at the side of the house. Opposite page: The ICF crew's last job on site was to pour concrete into the gables. While it's more complicated than a standard pour, the three sections were completed in just a few hours

We're now entering an exciting phase of the Build It Education House project. Once you've topped out your new home with the roof structure, you're basically in the dry (minus the windows and doors). So not only can you see the full form of the building you've put months of work into designing and realising on site; but you're tantalisingly close to being able to start the fit-out works inside and out. Here's what was involved in getting our roof installed.

Why did we specify SIPs?

Quite simply, structural insulated panels felt like a natural fit for our project. We'd already chosen a modern insulating concrete formwork (ICF) walling system, attracted by its energy efficiency qualities and the fact that it works well for basements (find out more about this construction method on page 90). So we wanted to complement that with a similarly high-performance roof.

A factory-made product, SIPs panels can be used for the whole shell of a house – but we're reserving them for our roof. They are quick to build with and can deliver excellent insulation and airtightness performance in a relatively thin profile. That latter point was what tipped the scales for us over more conventional attic trusses. We want to create a conversion-ready roof void to help future-proof the finished house; but the rather tight 8.1m ridge height available under our Plot Passport means that we need to eke out every spare millimetre of head height. So this thin-profile, pre-insulated roofing system made a lot of sense.

Our chosen panel supplier, SIPCO, was tasked with translating the architect's drawings into a workable roof plan, via their own structural engineer. It was at this point we discovered the triple-aspect roof was going to be a bit more complex than we'd imagined. That's partly because of the amount of open-plan space we need on the ground floor and basement. As a result, SIPCO's design includes a number of load bearing steels and glulam beams – along with a structural attic floor (rather than the normal first floor ceiling). The latter includes special kerto laminated veneered lumber (LVL) plates to which interlocking fillets will be fixed to prevent the main roof from spreading.

QUICK GUIDE What is Build It's Self Build Education House?

The Build It House is a pioneering real-life project designed to give you a unique insight into the process of self building your own bespoke home. The Education House is being erected on Graven Hill, the UK's largest custom and self build development (www.gravenhill.co.uk). We'll be following the design and build journey both in the magazine and online – sharing the highs and lows of how a project comes together.

Once it's completed, the Self Build Education House will showcase the design possibilities and practical choices you'll need to make over the course of your own scheme. You'll get to see a wide range of innovative products in situ, from heat pump ventilation through to acoustic screeds, with cutaway panels demonstrating how they're installed. The finished house will also feature detailed informational graphics explaining the decisions Build It made on this project and how different choices would have affected our construction schedule and costs.

Follow our journey at www.buildit.co.uk/ourhouse

By this point, the steels were already in place and our first floor walls were built, so the main pre-roofing works were to install the attic floor, pour the three gables and fix the wall plates. This work was shared between the ICF builders and our main contractor, Scott Hunt from Drewett & Hunt, who has been much more heavily involved now that the house is approaching weathertight.

Pouring the gables

When using a pre-manufactured system like SIPs, you're dealing with very tight tolerances. So tight, in fact, that the ICF crew were asked to get the building within 2mm of perfect for the wall plates and gable ends (the triangular bits of a wall that go up into the roof apex), to ensure the SIPs panel installation would go smoothly.

There was quite a bit of to-ing and fro-ing involved in co-ordinating this. Most builders would probably say 2mm over a whole building is a pretty tall order; so when you're getting to this kind of accuracy on your own dream home, the buck will ultimately stop with you. We've experienced that common self build situation where different suppliers require exact tolerances from others; but don't necessarily deliver on those themselves. That can lead to finger-pointing when things don't work out perfectly. Communication up front is clearly the key.

Follow our journey online at **buildit.co.uk/ourhouse**

In the end, we agreed to finish the first floor concrete pour about 20mm low at the eaves. This would allow us to put in a mortar bed and laser-level the wall plates to get them as close to dead-on as humanly possible. With the gables, we decided the best approach was to get one of Drewett & Hunt's regular chippies on site to draw up templates for the ICF installers to work from.

The trickiest part would be shaping the gable on the angled external wall, as the intersection with the roof pitch creates a compound angle along the wall thickness. But something got lost in translation between trades here, and unfortunately we didn't spot it until we were already manoeuvring the SIPs panels onto the roof, well after the concrete had been poured (more on this later).

Pouring gables is a slightly more complex operation than for standard storey-height ICF walls. Wet concrete won't just sit at an angle without something to hold it back; so the crew used a slightly drier mix combined with small sections of plywood as shuttering, screwed into the top

BUILDING THE SIPS ROOF

Everyone mucked in to unload the SIPs when they arrived on site eight days prior to the install – including yours truly. While the panels may be lightweight compared to other systems, it's still a two-person job to shift them by hand; hence the need for a crane at roof level

The rear of the Education House, where our pre-insulated loft space will be, is the largest continuous section of roof; and that's where the Joinery Barn team started their work. Note the temporary central supports, which were put in to help align the panels

As each SIP goes into place, it's foam sealed to the adjacent one using a timber spline, and screwed and nail-gunned for a solid fixing. Where the rooflights are formed, SIPCO supplied smaller panels to create the aperture

By the end of day one, the rear roof was completed and work on the front section was underway. All the glulams and angled timbers for the eaves were in place, ready to accept the rest of the panels

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of the polystyrene blocks. Starting near the bottom, they would remove a piece of ply, pour in concrete, vibrate it to consolidate the concrete into the corners, and then re-attach the shuttering and repeat.

Gradually, they worked their way up the gable until the whole thing was filled – with the last bit being hand-bucketed (as pouring little loads of concrete can block the pump). After a couple of weeks scratching our heads, prepping the gables and waiting for the wind to be quiet enough to allow the pour, all three were concreted in a single morning, and we were ready for the next stage.

The panels arrive

Our SIPs were delivered to site just over a week before the install date. Offloading them was a good hours' work – and I was on hand to chip in with site manager Scott and the rest of the crew from Drewett & Hunt (no gym session required this year...). It may not be that much in the grand scheme of things, but if you're able to, helping out with a bit of labour here and there does give you more of a sense of being part of a team. Not to mention the chance to see what's going into your build up close!

Ideally, the supplier will pack the SIPs onto the lorry in the opposite sequence to how they'll be assembled, so when you unload them, they're pre-sorted for the install team. It's worth running a tape measure over a few of the panels while you're doing this to check the order is coming in as you're expecting. We stacked the panels down one side of the site, set off the ground on off-cuts that were packed in with the delivery, to protect against moisture ingress (with tarpaulin nearby in case the weather turned).

One thing I'd been anticipating was that the panels would arrive with pre-made cut-outs for the rooflights. So it was a bit of a surprise to encounter only solid panels of varying sizes, with no window opening in sight. But it soon became obvious why. While most of the panels span from ridge to eaves, SIPCO takes care of the apertures using a mix of shorter and narrower panels; and because these are prefabricated to the right sizes, they just get swiftly fixed into place, and voila – the opening is formed.

IN THE NEXT ISSUE

With the roof in place, we get started on first fix work inside the Build It House

Above: The full-height SIPs roof elements are craned into place. There's a hole in the panel to allow the rope through. Once all the panels are in, the team foam fills these to provide a continuous layer of insulation

As with most trades, it's a good idea to get your roof installers on site prior to the job to check they're happy with everything. That's especially true if you're dealing with a complex design. When you're hiring a crane for around £1,000 a day, you don't want the team to arrive with their tools only to discover something critical's not been done, or that there are a bunch of minor issues outstanding that could have been flagged up and easily resolved.

Installing the SIPs

The big day came a week later, when the crane arrived on site (we have to give five days' notice to Graven Hill if we need heavy-duty plant). The crane crew consisted of two guys, one of whom was on the controls, the other on the radio. Meanwhile, SIPCO's install team, Joinery Barn,

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Located near Bicester in Oxfordshire, Graven Hill is the largest self build scheme the UK has ever seen – and it's the government's poster child for how bespoke home building could become easier and more common. Build It fully supports this council-led initiative, and we saw it as the ideal location, right in the heart of England, to create our unique Self Build Education House.

Backing on to Grand Designs: The Street (to the west of the main development), our corner site is part of Graven Hill's Community Streets character area. There are some site-wide rules we have to abide by, such as ridge heights, build zones and the amount of gross internal floor area – but this location gives us a high level of design flexibility.

For standard self build plots at Graven Hill, the overarching parameters are set out in a Plot Passport – and provided your scheme falls within the guidelines, you should get fast-track planning permission within 28 days. These sites are also sold on a Golden Brick basis, including services up to the plot boundary and foundations built to suit your design – taking much of the risk out of a traditional self build.

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The masterplan for Phase 1 of the Graven Hill development

Above: The Build It team visiting site once the roof was installed. All that's left is to seal gaps for airtightness; which will be vital to the house's finished performance. You may notice we already have most of our windows in... to find out more, be sure to check out the next issue!

had a team of four: two up top fitting the panels; and the other two on the ground prepping them to be lifted.

Setting everything up (including attaching angled fillets to the kerto eaves plates) and fixing the first panel was a methodical process. But once that was done, things moved apace. Watching whole sections of roof get craned in is quite exhilarating. It really is quick work: by 11am, most of one side of the main roof was in place and you got a real sense of the finished size of the ready-insulated loft.

Each panel is fixed in place with long screws at the top and bottom, while a timber spline is foamed into a recess at the side of the panel and nail-gunned into position. This provides a key for the next unit to slot into. At the eaves plates, a stay is in place to prevent spreading. All things considered, it probably takes just as long to crane each panel up as it does to actually install it.

We did encounter a few minor glitches along the way. One was that the central ridge on the main roof was pretty flexible. This isn't a problem for the house itself, as it's not doing anything structural (the panels and attic floor are providing all the stiffness). But it did make fitting the SIPs a little trickier. So before they started on the opposite side, the roofers decided to put up a couple of temporary mid-span posts to stabilise the ridge. It did the trick, and the next run of panels was straightforward to install. The bigger headache was at the angled gable. As more of the panels were fixed into place, I could see the issue coming: because the compound angle hadn't been formed through the blocks, the concrete pour was going to be slightly too high on one plane. Thankfully, it wouldn't stop Joinery Barn getting on with the rest of the job – but it did mean that Scott would need to take on a bit of extra work and cut that area back slightly another day, to ensure the end panel (and our roof finish) would fit perfectly.

There were a few more fiddly bits to take care of. Joinery Barn was also responsible for installing the glulam post where the apex glazing will be fitted, along with the glulam ridge beams that support the front gables (which involved a little trimming out of the recess in the ICF). But by the end of day one, the whole of the main roof was in place (minus one short end panel), the ridges had been installed and the first few panels at the front of the house were in.

Finishing the roof

Unfortunately, the team didn't quite managed to fit all the SIPs panels on in one go. This was a blow for our budget, as we needed to get the crane back in for a morning the following week – but it did give us time to correct the gable wall and adjust the scaffold slightly to allow the rest of the install to proceed as smoothly as possible.

As well as fixing those last few panels, the Joinery Barn crew installed the breather membrane. As SIPs is an airtight, warm roof system, this is applied directly on top of the panels before the counter battens to create a ventilation gap (rather than above, as most tilers might expect on a traditional roof). Joinery Barn has since returned one final time to fit the angled splines at the bottom edges of the SIPs (where they form the eaves), which will provide the fixing for our fascia and soffits.

CONTACTS

We'll be updating this panel each month with details of the key suppliers and partners we're working with on the Build It Education House:

ARCHITECT **Lapd Architects** 01865 407722 www.lapdarchitects.co.uk MAIN CONTRACTOR **Drewett & Hunt** 01865 731214 www.drewettandhunt.com NUDURA BUILDING SYSTEM **ICF Supplies** 01268 542748 www.icfsuppliesltd.co.uk SIPs ROOF PANELS **SIPCO** 0151 424 5346 www.thesipcompany.com ROOF INSTALLATION **Joinery Barn** 01590 642 087 www.joinerybarn.co.uk STRUCTURAL WARRANTY **Self-Build Zone** 0345 230 9874 www.selfbuildzone.com BUILDING CONTROL SERVICES **Stroma** 0845 621 1111 www.stroma.com WINDOWS **Kloeber** 01487 740044 www.kloeber.co.uk FLOOR SCREED **Screedflo** 01621 874781 www.screedflo.co.uk

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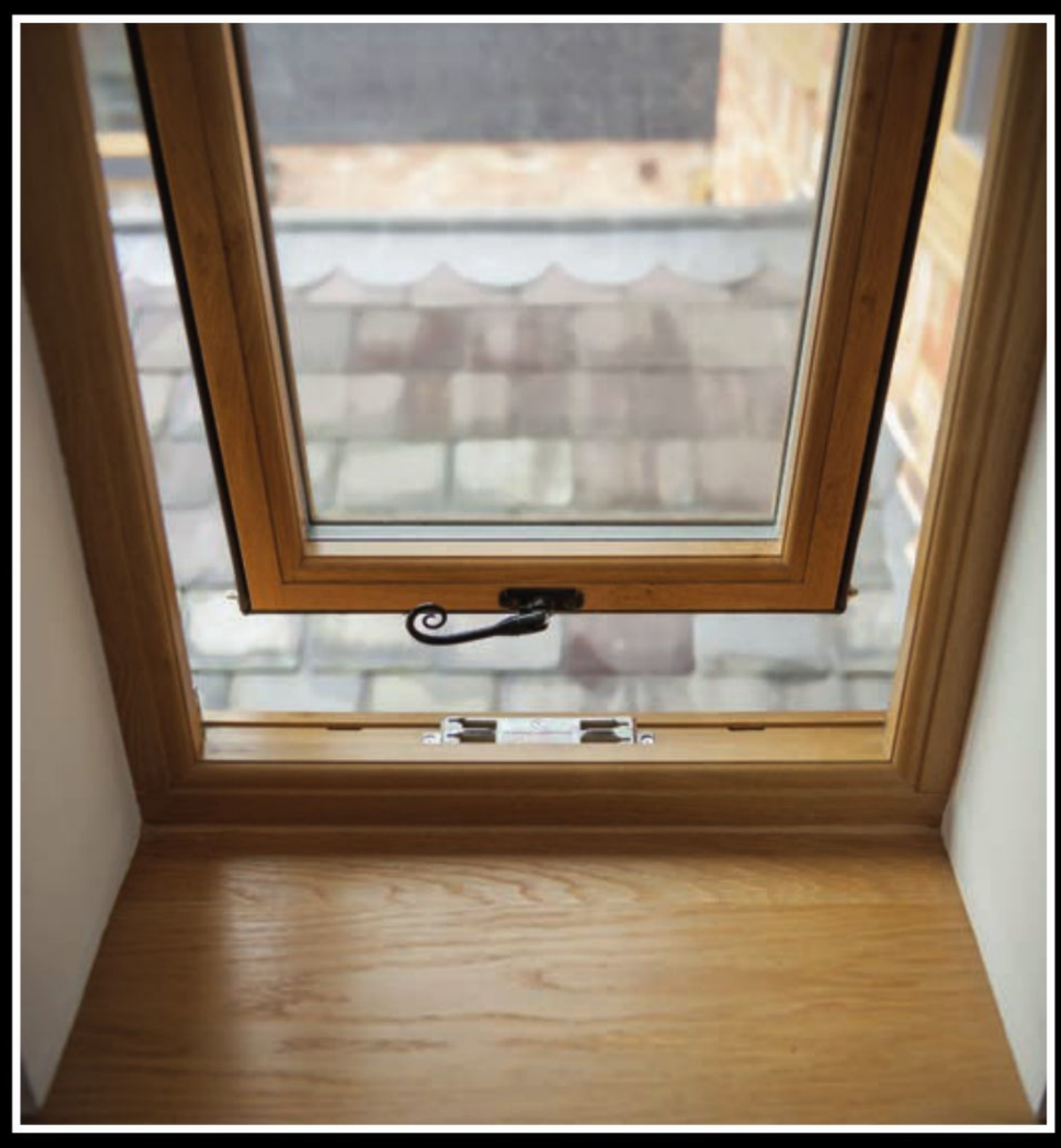

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Buyer's guide to sliding doors

If you're keen to create a seamless link between your home's indoor and outdoor spaces, then installing a run of sliding doors could be your best bet, says Charley Ward

After losing favour to their bifold counterparts in the early 2000s, modern updates to the sliding door – which allow for exceptionally slim sightlines – have seen them regaining popularity in recent years. Where bifolds have glazing broken up by multiple frames to allow them to fold shut, sliders have fewer but wider glass panes. This can bring in more coveted natural brightness to your home and allow for larger unbroken vistas.

Pros & cons

If you dream of a modern home with swathes of beautiful glazing, then you'll probably want to specify a set of sliders. These systems usually have one fixed pane that the others move behind; although some setups allow for all of the panels to slide. Either way, unless you opt for a pocket door setup, you won't be able to fully open the aperture – but this is more than made up for with the impressive glazed panel sizes possible. "Sliders do tend to give a narrower doorway then bifolds," says Mike Sullivan from Centor, "but they also allow for larger expanses of glass. This maximises the amount of natural light flowing into your room, creating a warm and bright environment."

While bifolds' ability to open up the full run might seem attractive, remember the climate we have in this country means your doors are probably going to be closed more often than not. "Bifolds are ideal for smaller apertures and really look their best when open, whereas sliders, ironically, are actually better suited to being shut," says David Clarke from IDSystems. "So if you've got an outstanding view across rolling countryside, or you're in the middle of town and bringing light in is very important, the bigger glass surface areas in sliding doors might prove ideal."

Frame materials

Typically, sliders will be framed with timber, aluminium or a composite (which features aluminium on the outside face and timber inside), although you can find cheaper PVCu products. Each material comes with its own aesthetic and functional capabilities and cost implications.

For those on a tight budget, PVCu can seem appealing, but it can't span big distances and won't match the long-term performance of other materials. "PVCu is not as stable as aluminium, engineered timber or composite," says Matt Higgs, director at Kloeber. "It moves and can warp when it gets really hot or cold; really any kind of climatic change can lead to issues with this material."

Aluminium is an attractive option that works well on contemporary properties or period homes with modern glazed extensions. It's very low maintenance, requiring only a good wipe down once a year in order to remain looking its best. It's probably also the right solution if you want to gain the slimmest sightlines. "At IDSystems, it's all about

Above left: This anthracite grey aluminium slider, by IDSystems, has colour-matched ironmongery that ties in with the property's internal fittings, like the light switches

aluminium," says David. "We feel it's best suited for achieving large glazed panels. If you opt for plastic or timber frames, these need to be thicker to be able to accommodate an equivalent size glass unit."

Engineered timber is also a strong, durable option but will need more upkeep than aluminium, so think about whether you have the time or inclination to undertake regular maintenance checks. If not, then a composite version might be a good option if you are set on wooden frames. "For sliding doors, we only offer timber internally

Above: These aluminium framed sliding doors by Kloeber provide some modern contrast to this home's traditional oak framing

Above: Centor's integrated doors feature the option to include integral blinds, providing you with privacy and shading from the sun when desired

with aluminium on the outside," says Mike. "It's easy to maintain externally, while inside you get the warm feel of timber and the option to repaint the frames if you want to change your decor scheme, so it gives you more flexibility."

Glazing options

Sliding doors should be fitted with safety glass as standard in order to meet Building Regs. Laminated glass is a good option, as this will also meet PAS24 security standards (see the box below for more on this). You'll also need to decide between double or triple glazing. In most instances, good quality double will be perfectly fine. However, if you want to create a very energy-efficient house, then triple will help to ensure that you hit the lowest U-values.

When making your decision, consider where your doors are going to be positioned in your home. If they're to be installed on a south-facing elevation that gets a lot of sun, there's the potential for the glass to retain a lot of that heat, keeping your property rather warm come the summer. There are numerous ways this issue can be combatted; a strategically placed balcony on an upper storey could create a shaded overhang above your doors, or consider opting for glass with a solar control coating. Alternatively, some sliders come with blinds pre-fitted to provide shade.

Additional features

You might want to include extras to suit your project, such as trickle vents to prevent condensation (unless you're building an airtight home with a mechanical ventilation system). What about ironmongery: do you want steel, chrome or a finish colour-matched to the frames? Then there's the question of blinds for privacy and shading: would an in-built product suit, or perhaps a smart version that seamlessly recesses into the ceiling? Centor offers a range of integrated doors, which come with integral blackout or light filtering blinds in a range of colours fitted to the slider's frame. There is also the option to include an internal insect screen. "The whole purpose of having a big glazed door is to let the outside in," says Mike. "But particularly when the weather is nice, you can run into problems with bugs. The insect blind comes right across the unit and stops them entering your home."

Costs

Sliding doors are usually bespoke-made, so it's difficult to give firm indicative prices. Shop around, visit suppliers and be sure to get multiple quotes before making your final decision. Costs can vary depending on what spec your glass is, the frames you choose, the size of the doors and if you've opted for any extras. More panels will obviously incur extra expense. But Matt Higgs says that he recommends not compromising on quality when purchasing sliding doors; they're a big investment and you get what you pay for, so it's worth spending a little extra to make sure that you get it right.

Kloeber's sliders start from £1,000 per (linear) metre but can go up to £3,000 per metre. Generally, units with very narrow frames tend to be more expensive because of the additional engineering needed to ensure the doors perform optimally. "For a budget of £1,000 per metre you'd be looking at standard-height two-panel doors with one fixed frame and standard ironmongery, colours and double glazing," says Matt. "For £3,000 per metre, you can expect electronic locking, slim framework, high spec glass and potentially a much taller model, too."

Ordering & installation

A good rule of thumb regarding lead times (between order and delivery) is to expect your doors to take six to eight weeks to arrive on site, but David Clarke recommends starting the process as early as possible. "Lead times will be taken from order confirmation stage, but to get to this point, there may be four or five weeks of refining specs and creating drawings," he says. "The sooner you start the conversation, the more realistic a timescale can be given."

You'll want your doors installed as late as you can to avoid any costly accidents. If you're fitting the units before first fix commences, make sure they're covered so you don't get plaster or render over them, as cleaning this off risks damage or scratches. "We've occasionally had requests to install doors before the roof's gone on and that's potentially asking for trouble," David continues. "You've got tradesmen running wheelbarrows full of material across the tracks and, whilst they are hardwearing, they're not necessarily designed for access with machinery and things like that."

QUICK GUIDE: SECURITY

- To ensure that your new doors are up to scratch with part Q of the Building Regs, ask for certification showing they've been approved to PAS24 or Secured By Design standards. Currently, only new builds have to meet PAS24, but for peace of mind, you may still want to specify units that meet the standard on renovations and extensions.
- Many sliders will come with toughened glass as standard. This can withstand considerable force, but if it does get smashed it will ultimately shatter (into safe pieces). Laminated glazing, on the other hand, has two panes of glass with a protective polymer sandwiched in between. If it's broken, this layer will remain intact, making it harder for burglars to enter.
- If you're not using your sliding doors as an access point from the rear of the property, consider if a keylock or even a handle is strictly necessary on the outside; not having one means one less targeted area for potential burglars to break in. David Clarke at ID Systems says they only fit ironmongery externally on 50% of projects.

CONTACTS

Centor 01217 012500 www.centor.com **Internorm** 02082 059991 www.internorm.com **IDSystems** 01603 408804 www.idsystems.co.uk **Kloeber** 01487 740044 www.kloeber.co.uk **ODC** 03300 586793 www.odcglass.co.uk **Rationel** 01869 248181 www.rationel.co.uk **Velfac** 01536 313552 www.velfac.co.uk

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5 STEPS TO PLANNING YOUR NEW STAIRCASE

Adam Rowland from staircase specialist Zakuna presents the key considerations when finalising your new home's flight

The stairs in your home are an essential element for moving between floors, but rather than being a purely practical part of your home, the flight can have a surprising influence on the overall aesthetics of a property.

Spiral, helical, floating, cantilevered, freestanding... there are many design options to consider, plus placement is another big decision. For instance, do you want it to be the first thing people see in an entrance hall, or could it add extra wow factor to your main living space? Here are my top five tips for getting the most out of your staircase.

1 Plan early

It's surprising how many people leave choosing their staircase until after the house design process. Instead, it should be a consideration right from the start as it will heavily influence a number of factors, such as layout and materials palette. Outline how much you can afford to spend, whether you want it to become a focal point and think about what style will work with the rest of the interior. It goes without saying that your staircase must conform to Building Regulations, so work with your architect or designer to understand what's best for your property.

2 Integrate it into the overall design

Another reason to plan early is that, as a major element of the internal scheme, the positioning will heavily influence the overall flow of the new property's floorplan. Where the flight is placed will impact on windows, doors, upper rooms and more. The style will have an effect, too, whether that means taking design cues from materials, for instance, or making space for a freestanding helical flight.

Left: Zakuna's Contender design has a metal stringer running down the centre, leaving the treads open

3 Think about how it will be used

This might feel like it has an obvious answer, but understanding who will be using the staircase will heavily influence the design. For instance, if you have a young family, closed steps are more advisable than open risers. In terms of aesthetics, if the flight is leading to an open gallery, could the same balustrade continue from the staircase into this space? Will including lighting in the treads bring an aesthetically pleasing dimension as well as a practical source of illumination?

4 Create an appropriate superstructure

Stairs are a structural element, so the right precautions need to be made to support the weight of the flight within the new house. What's needed will depend on the style you've gone for – for example, if you're keen on a cantilevered staircase then you will need to think about your wall structure and how you will phase the installation process with plasterers and decorators. Alternatively, if you prefer a hung or self-supporting design, you'll need to consider the fixing points and how the staircase will fit within the opening.

5 Coordinate with the interior finishes

Think about how your staircase can complement the other parts of your home. Do you want to colour match your treads with the doors or flooring? Glass railings suit contemporary schemes, or will traditional wooden spindle railing be more in-keeping?

Adam Rowland is business development manager at Zakuna. Winners of the Best Joinery Product at the Build It Awards 2018, the company is gaining recognition in the market for its bespoke, high quality staircases and service. The firm works closely with clients and their architects to ensure the stair design doesn't become an afterthought but instead is a statement piece within your home. **For more info call 01243 884104 or visit www.zakuna.co.uk**

5 tips for choosing an underfloor heating system to install yourself

If you are renovating a single area of your home, you might be looking to do much of the work yourself. Whilst traditionally this might involve painting and decorating, there is no reason why you shouldn't consider fitting the underfloor heating (UFH) yourself too – but it is important to choose the right system.

5 TOP TIPS FOR CHOOSING A DIY UFH SYSTEM:

1. **Consider the weight of the UFH system**
   If you are tackling the installation yourself, don't waste time and effort lugging pallet loads of heavy components into the right part of the house. Choose a lightweight system and your back will thank you.
2. **Choose quality**
   There's an old adage that says 'if you buy cheap, you pay twice'. This doesn't mean that you need to buy the most expensive UFH system that you can find, but choosing a quality product will save you both time and money in the long run.
3. **Opt for a low-profile system**
   When you are renovating a property and fitting UFH over the existing floor, choose a low-profile system that minimises any disruption to fixtures and fittings.
4. **Ditch the screed for a quicker, easier install**
   Choosing a completely dry UFH system avoids the need to call in specialist screeding contractors, and also means there is no waiting around for the compound to dry. Floor coverings can then be fitted immediately.
5. **Choose a system with pre-routed channels for the tube**
   Make life easier for yourself by choosing a UFH system where the channels for the tube are already in place. Pre-routed panels and boards make it straightforward to run the tube around the room and back to the manifold, changing direction when needed. They also hold the tube securely in place.

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Complete guide to renovating a house

part 1 Assessing a property's potential

In the first part of this series on how to ensure your renovation is a success, Emily Smith looks at how to tell if a house is worth taking on as a project

ANTHONY COLEMAN

Before

Buying a fixer-upper is an attractive and popular project for those looking to make their stamp on a house and achieve great value for money. Get it right, and it's a fantastic way to invest your cash. Not only will you be creating a space that's tailored to your needs, you'll also reap the rewards in terms of the property's end value. Get it wrong, and it has the potential to turn into a disaster akin to a never-ending soap opera, guzzling up your finances with no hint or hope of a profit at the end.

Over the upcoming issues of Build It, I'll be investigating what it takes to ensure your renovation works result in a wonderful home that you can enjoy for years to come. The first step, of course, is having a house to renovate.

Finding a project

A quick look on the online property search engines will show you that there are plenty of buildings out there for sale. But sifting through and determining what has the potential to be transformed into your ideal home requires you to first establish some fundamentals.

Think about where you want to live – not only in terms of the geographical location, but also regarding what amenities your perfect future dwelling has access to (ie good schools, transport links, a decent pub etc). To what extent would you be willing to sacrifice your dream location for the right house? How much do you want to spend in total (both on the purchase itself and the works needed) and how much of a project are you happy to take on?

Something key to bear in mind is that a house with renovation potential in a sought-after area is likely to come in at a premium cost because it'll be in high demand. On the other hand, doing up a property that's in an undesirable part of town may not yield a big return once renovated, regardless of how much money and wow factor you pump into it. Fundamentally, it's about weighing up your budget and local sale prices with what you're hoping to achieve.

Online property portals are a great resource for finding an opportunity, but make use of all routes to enhance your chance of success. Register with local estate agents, investigate property auctions and don't be afraid to track down the owners of empty properties that could have potential – the online Land Registry is a good option here.

Local planning policy

Before you walk through the door of what could be the right house, it's wise to do some local investigation to arm yourself with a good understanding of what works the planners might accept on the property you're keen to view. You don't need to worry too much if you're purely aiming to do internal works, as they won't require planning permission. But there's no point in imagining totally revamping the front facade and adding a shiny new extension if you're not going to get it past the planners.

Have a look at whether the property still benefits from permitted development (PD) rights, as this could put you in good stead for some changes (don't miss Mike Dade's advice on this topic on page 115). However, on a really involved renovation and extension you may well intend to go in for a full planning application, so understanding local policy before you buy is crucial.

Check if the house is positioned in a protected area, too. Designated conservation zones and areas of special interest will have more planning restrictions, potentially making getting permission for external alterations trickier.

Planning applications are logged with the local authority, so make use of these by investigating if works on nearby buildings have been approved. Were there complications with the planning process, such as local objection? Does the property in question have its own planning history?

Above: When Mark and Stephanie Fernandez came across an outdated bungalow in Berkshire, they knew a renovation and extension project could turn it into their dream home. Their hard work paid off, and for a build cost of £275,000, they've created a contemporary abode, packed with wow factor

It's also a good idea to actually visit houses on the same road – can you see any evidence of recent works?

Looking at structural quality

It's exciting to find an opportunity that seems to tick all the boxes on your renovation wishlist, but it's vital not to jump straight in with an offer before establishing if the structure is capable of realistically offering what you want, if doing so is financially plausible and if the asking price is fair.

You don't have to be a building professional to be able to get a good sense of the condition of a house when giving it a look over. Aesthetic upgrades, such as replacing dated wallpaper, carpets and bathroom suites, will need to be budgeted for, but the cost of doing so is fairly easy to predict. It's what's going on behind the scenes that can be a little trickier to check and price up – stripping out and modernising the electrics and heating, for instance, could push fees beyond your budget. Other problems to look for include damp and any structural movement, but these will probably need to be reviewed by an expert – more on key areas to investigate overleaf.

If a quick scout around shows that the amount of work needed is way beyond your project scope, there's no point in taking things further. But if you think it might work for you, the next step (unless you're extremely experienced in renovating) is to commission a building report by a chartered professional. Various levels of investigation are available, from a basic condition report (which you're likely to need for your mortgage valuation anyway) through to a full structural survey by a qualified structural engineer.

Obviously, the more thorough the investigation, the bigger the fee. It's reasonable to feel nervous about commissioning an in-depth report before you know for sure it's worth buying the property in question, but it could be riskier to go ahead with the purchase without one. Also, if it turns out that lots of work is needed, then you've got a good reason to haggle down the vendor's asking price.

"You have to make a judgement based on what you see, but I believe it's worth digging deep for the full works on an old house or somewhere with lots of damage," says architect and Build It expert Julian Owen.

Investigating design potential

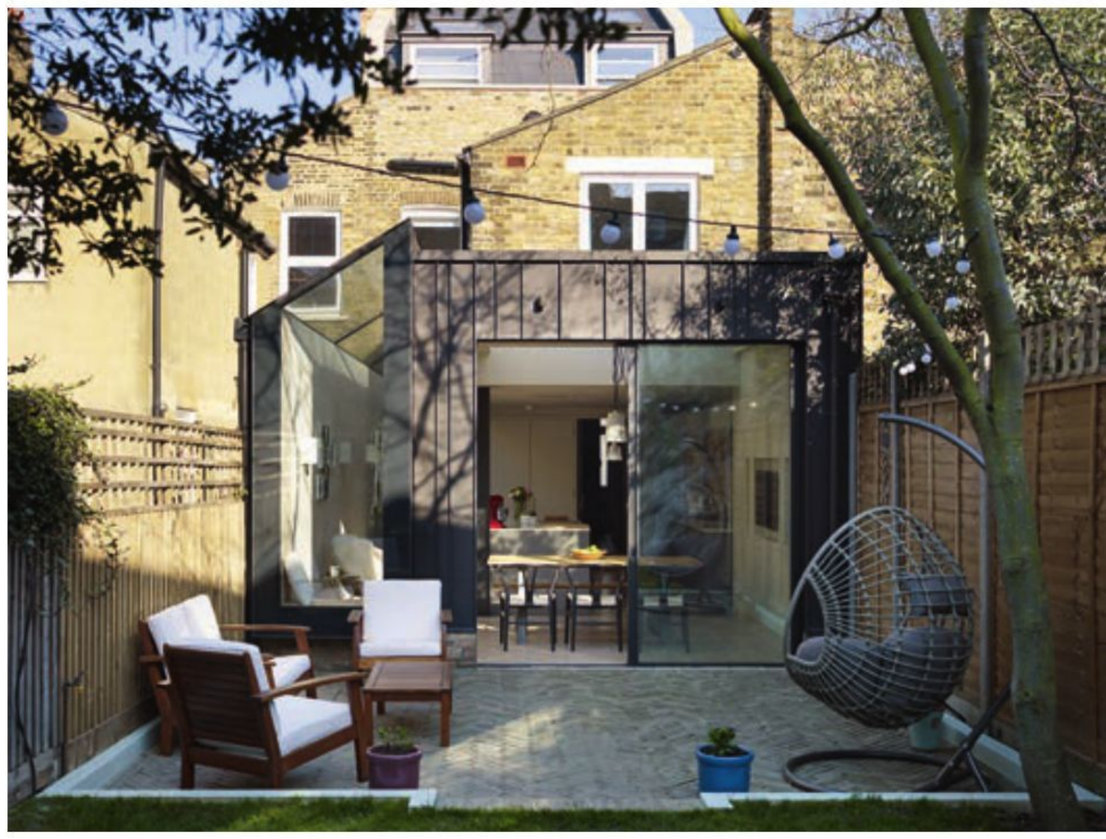
When you're assessing a property that you're thinking of renovating, there will be signs to look out for regarding what kind of changes could work with the building.

Firstly, look at the layout of rooms and establish if they would suit your needs. If the current arrangement wouldn't suit your household or lifestyle, understand what's missing – an extra bedroom, bathroom or spacious kitchen-diner overlooking the garden, for instance. Could these be integrated? Would any rooms benefit from being knocked together in order to create one larger area?

Perhaps an old conservatory would be better replaced with a new extension to provide a big living zone with glazed doors opening onto a patio? If you're thinking of

ALISTAIR NICHOLLS

This Victorian mid-terrace in South East London is the home of Helen and Jonny Brown, who spent £220,000 renovating the original rooms and adding a striking extension at the back, which now connects an open-plan kitchen-diner onto the garden



Right: Glenys and Paul Ferguson worked with their Victorian end-of-terrace home in Lancaster and transformed it into a modern, energy efficient dwelling, with works coming in at £308,400. Its new performance standard was so impressive that it was one of the first renovations in the UK to be awarded Passivhaus status. The couple are delighted with the results, and now enjoy a super low-energy, low-bills home

extending a property, look at the garden and how close the walls are to the boundary to establish what space there is to play with. The style of building could also hint towards what's possible. For instance, side returns are a popular space to build into on Victorian terrace houses and dormer loft conversions are often seen on 1960s bungalows.

Before

DAVE BURTON

It's worth peeking into the loft to investigate how high the ceiling is – could a small dormer window and rooflight combo be enough to make the storey habitable, or would it require major structural alterations, including removing trusses and putting additional support in? Obviously the more work needed, the higher the fees.

Estimating costs

While you want to understand how much a house project is going to cost before going ahead with the purchase, you also don't want to spend too much money before knowing for certain it's going to happen. There's a delicate balance here because getting firm costs will come with a price tag.

If you've forked out for a structural survey, then you'll have an idea of what works are needed. But getting them accurately priced will still be tricky if you don't have at least sketch drawings from a designer. Trouble is, paying for these before buying is a risky investment in itself.

You could ask a general builder to do some educated guesswork, but remember this will just be a rough estimate rather than a full quote. If you've got an established relationship with an architect or builder, from a previous project or through personal connections, it's worth asking if they'll walk around the house with you to give some professional insight into how much things might cost.

A good builder will have access to information and experience from past jobs to give them a rough idea of what things come in at, as well a general understanding of the trades needed and how long they might be on site for. "Do be wary, because whatever price a builder does estimate might be generous in a bid to guarantee you go back to them when you put the project out to tender... only to find that the final quote comes back higher," says Julian.

There's another big tipping point to keep in mind – are the changes you want so expensive that it's more cost effective to knock the whole property down and start again? This is something we'll look at later in the series, but it's a question that's worth debating early on, especially if the house is in a very sorry state of disrepair.

Final thoughts

Fundamentally, when assessing a potential project, use your common sense and get help where necessary. "It's a false economy not to pay for professional advice before buying, especially if the renovation requires significant work," says Julian. "Just recognise that any quotes given at this stage should be taken with a pinch of salt."

KEY THINGS TO INVESTIGATE

Damp Mould, damp patches, white salt deposits on bricks, rotting timber and failing plasterwork are all signs of too much moisture in a property – you'll probably be able to smell it before you see it. Don't let it put you off a house, though, as resolving issues might be fairly simple. Just remember you need to budget for getting any damaged parts of the structure repaired.

Structural movement Cracks on walls are an indication that the building might have moved, potentially because of a structural failure of some kind or because of changes below ground, known as subsidence and heave. You need to establish if there is active movement – which will need to be fixed – or whether these are old scars that just require a cosmetic facelift.

Electrics If this hasn't been updated for over 25 years then it's probably going to need some work. Tell-tale signs to look out for include dated looking fuse boxes with no circuit breakers, round pin plugs and old-fashioned dolly light switches.

Plumbing Replacing dated sanitaryware with modern units is easy to estimate in terms of costs, but if you're thinking of relocating or adding bathrooms then the plumbing will need to be extended to these areas. So why not consider upgrading the supply, waste and soil pipes at the same time?

Heating First establish if the property has a central heating system in place – are there radiators powered by a gas boiler? Electric storage heaters are a tale-tale sign of no central heating. If it's old, then it's worth replacing a boiler with a new energy efficient model. Remember that the performance of your heating system will have a lot to do with your property's thermal efficiency, which will need investigating, too.

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HOW TO GET JULIETTE BALCONIES RIGHT

Thomas Hagen, technical manager at glazing specialist Internorm, looks at the options

Above: Internorm's Juliette balcony comes in three rail options for the balustrade

Even if an upper storey walk-on terrace isn't possible for your home, you can still benefit from glazed doors and fresh air upstairs thanks to Juliette balconies. These setups combine a set of glazed doors with a flush or near-flush safety balustrade, allowing interiors to benefit from floor-to-ceiling views of the outdoors, natural daylight and ventilation.

There are various reasons why a Juliette balcony could be an excellent addition to your home. On new build projects, planning restrictions might mean a full balcony isn't possible on an upper storey, whether that's an aesthetic decision or because of overlooking issues. Or there might not be enough space, which makes the compact and subtle profile of a Juliette an effective way to have a door upstairs whilst keeping the planners happy. Another advantage is that it's a more affordable option than building somewhere to walk out onto.

For renovations, Juliette balconies can usually be installed without the need for planning permission, often simply bolted on to an existing wall.

Design options

The name comes from Shakespeare's famous play, where Juliet romanced with Romeo from her balcony. These designs originated in Mediterranean countries, and became popular in the UK during the Georgian era, hence traditional-style Juliette balconies feature decorative metal railings and ornate details. In recent years, glass designs have taken the market by storm, allowing uninterrupted views when paired with glazed doors for a seamless, contemporary look.

Juliette balconies are able to span considerable widths, meaning French, bifold and sliding doors are all suitable solutions. The balustrade is usually bolted onto the outside of the opening, but it is possible to install it inside the door if that works better for the setup.

As these designs are popular in bedrooms, you might want to consider including an element of frosted glass in the doors or balustrades for extra privacy. Another option is integrated blinds within the glazed doors.

Rules & regs

As with everything that goes into your home, there are guidelines to follow to ensure the finished design is safe. Juliette balconies fall under Approved Document K of England's Building Regulations. To ensure there's ample protection in place to stop anyone from falling, any gaps positioned between railings can not be more than 100mm. The balustrade must extend up to a height of at least 1,100mm from standing floor level.

At Internorm, our Juliette balcony designs comprise laminated safety glass, available with a choice of sleek stainless steel rails for a safe and secure fixture. Rails are available in round and square-edged designs.

For peace of mind that your installation accurately meets Building Regulations and achieves the best performance possible, consider going with a supplier that can provide the whole package in one – doors, balustrade and installation.

Thomas Hagen is technical manager at Internorm. The company specialises in windows and doors, offering a range of designs, styles and materials to ensure you find the ideal solution for your self build or renovation.

For more information about Internorm visit www.internorm.co.uk

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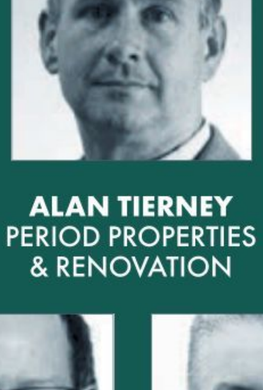

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Extension cost guide Part 2: Double storey

In the second instalment of our extension cost series, the Build It Estimating Service's Adrian Wild sets out indicative prices for popular two-storey additions

If you're after a value-for-money route to adding more space to your property, look no further than two-storey extensions. This style offers a great chance to rebalance interior layouts, for instance by getting the right mix of bedrooms versus bathrooms upstairs whilst integrating contemporary open-plan space on the ground floor.

What's more, this isn't simply a case of paying double to get more living area. You'll actually spend slightly less per square metre of extra space than you would with a single storey extension. That's largely because the new zone's footprint, and therefore the price of the foundations and roof, is pretty much the same with either route.

Generated by the Build It Estimating Service, this indicative double-storey extension cost guide assumes that you're integrating a kitchen on the ground floor, with a master ensuite bedroom above. The gross internal floor area (GIA) of the addition is 50m^2. Two of the examples feature a pitched construction, with the roof tying back to the existing building via valleys, while the third is based on a flat roof.

Prices include all the infrastructure (including cooker and socket circuits, hot and cold water supply, and extension of the heating system). Internal doors have been included, but a wide structural opening from the main property into the new extension would be an additional cost – as would internal walls, flooring and the kitchen and bathroom fit-out (all of which can vary significantly depending on specification).

Our **standard specification** is based on a brick and block cavity wall extension with PVCu windows and standard patio doors. The flat roof would be in torch-on felt, while pitched versions are based on concrete tile.

The **optimised spec** demonstrates what you might expect to pay for upgrading the project. It's based on stone and block construction, aluminium windows and bifold doors. The optimised flat roof option features a GRP covering, while the pitched designs include a clay plain tile finish.

You'll see that the optimised hip-end extension is some 63% more expensive than the basic flat roof option – so an awful lot comes down to your project priorities in terms of style, quality and long-term performance.

All the prices take in the builder's overheads and profit, as well as VAT. If you went down the DIY route, you might save as much as 50% on total costs; but at the expense of your own time and the risk of missteps along the way. Potential additional costs include architect's plans, clearing the site and moving services (such as drainage).

NB: All figures are based on 50m^2 extensions

Next month…

In the final instalment of our extension cost mini-series, Adrian takes a look at what you can expect to pay for wrap-around additions.

Flat roof two-storey extension

Flat roof extensions are often preferred for 1960s and 1970s properties, or to create a striking, contemporary look that contrasts with a heritage home. This style can work especially well where the main house is relatively low and planning concerns limit a multi-storey addition's ridge and eaves height, as the flat roof will give you maximum space across the entire upper floor.

	Project cost	Builder's overheads & VAT	Total cost	Total cost per m^2
Standard spec	£40,580	£22,725	£63,305	£1,266
Optimised spec	£62,136	£34,796	£96,932	£1,939

Apex valley roof two-storey extension

This type of addition has two sloping roof planes that come together at a ridge; so the wall features a triangular top section. Apex valleys are straightforward to construct and easy to waterproof. Extensions of this type work well if you're trying to match the pitch and scale of the existing property, or where you need a decent roof void (ie for storage or to turn into a feature vaulted ceiling).

	Project cost	Builder's overheads & VAT	Total cost	Total cost per m^2
Standard spec	£44,003	£24,642	£68,645	£1,373
Optimised spec	£64,541	£36,143	£100,684	£2,014

Hip valley roof two-storey extension

Hip roofs slope on all four sides, so they are slightly more complicated than apex designs. They're typically chosen where you want to match a hip on the main house. They're also a good choice for minimising the visual impact of the addition, and reducing overshadowing of a neighbour's property and garden. But if you're after maximum space in the loft, a hip roof may not be advisable.

	Project cost	Builder's overheads & VAT	Total cost	Total cost per m^2
Standard spec	£44,036	£24,660	£68,696	£1,374
Optimised spec	£66,258	£37,104	£103,362	£2,067

Adrian Wild is managing director of HBXL Building Software, which powers the Build It Estimating Service. The service will enable you to calculate your project costs right down to the last roof tile. Find out more at **www.self-build.co.uk/estimate**

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Outdoor *living ideas*

Make the most of your home's external areas with Charley Ward's round up of fabulous features to add to your garden space

While the average British garden may once have hosted little more than a set of rattan furniture and the occasional barbecue, the shift towards designing properties with large spans of glass means there's a much greater connection between our home's inside and outside zones than ever before. As a result, we've become far more adventurous in the way we use our outdoor spaces, to the point that you could even consider them another room of the house. Read on to discover the ways you can create the perfect garden living area this summer – and beyond.

Bring the outside in

Installing a run of glazed doors has myriad benefits; they can look stunning, will allow in large amounts of mood-boosting daylight and can help to you make the most of any pleasant views. The benefits are especially apparent during the warmer months, where you can throw them open and allow plenty of fresh air inside.

For those wanting more frameless views, opt for sliding doors over bifolds, as these tend to feature wider spans of glass with slimmer sightlines, like the IDSystems units featured in the main image above. You can find out more about sliding doors in our guide on page 69. However, if entertaining is your raison d'etre, then the fully opening entrance that bifolds offer might be more your bag.

Install a deck

Timber decking creates an attractive, warm living area that's highly versatile. It's also a relatively low cost option if you go for softwood or composite boards, although higher quality hardwood versions will be more expensive – and, as always, price is dependent mainly on the area you're covering. Decks come in a wide variety of colours and can usually be painted or stained to your exact specifications.

A well-placed deck can also cover unsightly drains or inspection covers (make sure they're accessible!) and they can still be appropriate even if your home is set on a sloping site. Plus, they can usually be extended or modified fairly easily if you want to alter them in the future. When the Cochrane family remodelled their Edwardian terrace house (right), they installed this area of anthracite grey decking by Ecodek; it runs right up to the edge of the glazing for a smooth transition from inside to out.

DAVID BARBOUR

Make a splash

Aside from any health benefits associated with swimming, nothing beats relaxing by the poolside on a summer's day, so installing one of these features in your garden is a real luxury. Planning permission is not generally required for

pools as they fall within permitted development rights. However, if you live in a protected area or own a listed property, then it's worth checking with your local authority before you commit to starting any works.

Adding an enclosure, like the retractable polycarbonate model by Starlight Pools on the previous page, is a great way to beat the weather and extend the usage you can get out of your pool. It will also protect the structure from the elements, keep it hygienic and provide full UV protection.

Create flow with floor tiles

A growing number of companies now offer matching tiles for use both indoors and outdoors. By using the same flooring either side of your glazing, your eyeline is not broken, ensuring a real sense of flow through your home and into the garden. This helps create that coveted feeling of space and openness.

These minimal white porcelain tiles (left) are part of the Valverdi range by The London Tile Company. They're slip resistant, stain and frost-proof and 100% colourfast, so the inner and outer units will always match – even after decades in the sun. Prices start from £35 per m^2.

Beat the British weather

Extend your living space into the garden with a dedicated all-weather patio roof. Designed to provide shading and rain protection, these roof panels lie flat and interlock to create a fully watertight covering when closed – so you can still sit out and enjoy dinner in the garden, even when it's raining. On brighter days, the panels can be opened, letting you control the amount of shading or simply allowing the sunshine to spill through.

This contemporary aluminium option (below), by IQ Glass, has a rotational range of 120°. Each installation is bespoke, with colours, size, configuration and optional integrations supplied to your preferred specification. Don't be afraid to dream big, as the structure can be designed to work with up to 7m between each supporting post, resulting in large outdoor living areas.

Stay warm in the evenings

A fireplace can make a fantastic focal point and, for outside zones, the warmth that's provided allows for extended socialising into the evening. While there are plenty of standalone models to choose from, if you're still at the design stage of your project, then consider if you could specify a built-in model for your scheme. This can add real architectural flair and, of course, some extra functionality to your new home.

BEN BLOSSOM

In addition, if you only have a modest garden, a built-in unit can save valuable floor space that you could use for a set of garden chairs, for example. In this project by Gruff Architects (pictured above), the stone chimney makes for a pleasing contrast with the simple timber-clad structure, while the decked area provides a space to relax by the fire.

Enjoy al fresco dining

Bring your summer barbecues up a notch by installing an outside kitchen. You could get your architect to design something bespoke and have it made to your exact requirements, or you can take advantage of one of the modular options available. These WWOO concrete kitchens (below) come in two-to-six segments, with corner units and additional outdoor showers available. They typically feature a sink and a woodfired oven or gas barbecue plus some shelving units to store essentials. Pair one with a dining table and chairs to create a fully functional kitchen/dining area that's perfect for hosting parties. They're priced from £5,482 for a two segment unit.

CONTACTS

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Structural System FAQ

Insulating concrete formwork

Could this construction method be the right choice for your dream self build home?

Above: The Red House is an architect-designed home built with Nudura ICF. The street-facing elevation features a mix of timber cladding and render, with rounded corners echoing those of a listed building opposite. The house is so well insulated that the occupants enjoyed zero energy costs in the first year

Intuitive, quick and weather-resistant, with impressive thermal performance and excellent durability, insulating concrete formwork (ICF) offers a host of benefits. Small wonder, then, that it continues to gain traction for one-off home building projects. Here's what you need to know if you're considering ICF for your scheme.

How does ICF work?

This structural system is sometimes referred to as LEGO for adults. There are slight variations on the theme depending on the supplier you choose, but fundamentally building with ICF involves stacking a series of lightweight hollow blocks (usually of expanded polystyrene; EPS) with interlocking profiles to form your external walls. Steel reinforcement is inserted into the cavities, to the structural engineer's design, and the formwork is then braced and aligned – ready to accept a pour of suitably-specified concrete.

A project goes up in storeys. So, you build foundations and floor slab first; erect and pour the ground floor ICF walls; get the first floor structure in place; and then crack on with the next storey. The concrete itself is placed in lifts, with the crew moving gradually around the building, to minimise pressure on the ties and bracing. The concrete must be carefully directed and vibrated to prevent voids forming, with particular attention to detail needed around structural openings and areas such as gables. Ultimately, what you're left with is an extremely robust, solid and high-performance structure with EPS insulation built-in.

The majority of ICF companies focus on a take-off and materials supply service for the interlocking blocks and sundries (cavity closers and temporary bracing systems, etc), according to your design. They can often recommend contractors in your area, or you might already have your own team in mind to take the works forward. "Our members all offer training courses, usually over two days, for self builders and their contractors," says Chris Stride, chair of the Insulating Concrete Formwork Association (ICFA). "We want your project to go well, so we only supply the blocks if the training has been completed; and if you are keen to go DIY, we'll usually follow up with site visits for the foundations and initial ICF courses, as well as one of the pours."

What are the main benefits?

In the right hands, this is a fast and efficient system. On a straightforward project, an experienced crew can get the prep for a storey of formwork done in a week or so, with the pour itself taking less than a day. The upper floor is likely to take a little longer, because features such as gable walls involve a bit more cutting and effort to pour – but it won't be far behind. The combination of easy-to-handle, dry-stack blocks and poured walls make ICF more robust to changeable weather than standard cavity walling, too, so there's less risk of delays. All in all, you should reach weathertight stage much faster than with brick and block.

But perhaps the biggest selling point is the finished quality of the house. The concrete core and EPS blocks combine to deliver excellent insulation and airtightness, with different block and tie profiles available to help you achieve your target thermal performance (including Passivhaus standards). On top of that, the heavyweight construction helps to provide fantastic acoustic properties. "ICF homes are incredibly quiet," says Chris. "Heating and cooling bills will be minimal, and because you have an air quality system, they never feel stale. It's almost like they cuddle you!"

Are there any limits on design?

The short answer is no. You can apply all manner of external finishes, while ICF's solidity means wow-factor features such as curved walls, cantilevers, vast glazed openings and more can be achieved with relative ease. "Design-wise, it's probably the most flexible of the systems," says Robin Miller from Beco Wallform. "The small blocks, and the fact accurately-poured concrete will form the shape you want, means you can give your home real personality."

What's more, because you're dealing with solid concrete walls, you can incorporate heavyweight beam and block floor structures. These enable open-plan living spaces and provide excellent acoustic performance between storeys (it's just as easy to use timber joists, should you prefer).

The trick to making the most of ICF is to ensure you're working with an architect who understands the detail of how it goes together. "If a building is designed with your preferred ICF system in mind, it will fly up – but if not, things will slow down, as there will be more cutting to do," says Chris. The

The Build It Education House on Graven Hill features the Nudura system, provided by ICF Supplies. The method made sense for our project, which includes a basement. Find out the latest news from site on page 62 or visit www.self-build.co.uk/ourhouse

ideal solution is to work to the block sizes for wall lengths and aspects such as the position of window and door openings.

As it's a robust, strong system that's straightforward to waterproof, ICF can also work well for basements and retaining walls. "If you do decide to add below-ground living space, always ensure a waterproofing company is engaged from the start," says Chris. "We work closely with the Basement Information Centre to recommend specialists."

How sustainable is ICF?

Every building system has its pros and cons when it comes to eco credentials, and it's no different for ICF. Embodied energy (that which goes into producing the components in the first place) is higher than for some techniques – but careful sourcing can help to bring that down, and the finished house will deliver impressive performance.

"Some people worry whether a system based on plastic, foam and concrete can be green – but ICF is one of the most sustainable options out there," says Robin. "The EPS used for the blocks is a by-product of the oil industry, for instance, and is fully recyclable. Plus a lot of the cement in concrete has now been replaced by waste materials such as fuel ash."

Fundamentally, this method will net you a highly-insulated, airtight and extremely durable home that will easily save more energy in its lifetime than it takes to produce. Plus, if you plan for ICF from the start, your designer and supplier can work together to ensure minimal wastage on site – a big plus in comparison to, say, a standard masonry build.

Who can build with this system?

In the early days, ICF was often marketed as a great solution for DIY self builders – and that's certainly an option if you're confident you have the skill and time to do the work yourself. In practice, though, many of us prefer to put our projects in the hands of the experts. "When they come to me, people have usually done their research and know the benefits of the system," says Chris. "I then try to help them find the right supplier who can assist them all the way through. So if you want to achieve a particular feature and I know a member who's done something similar, I'll connect you with them."

"Assembling the blocks is the easy part; it's pouring the concrete that needs care and attention," says Robin. "Quality is vital, so most of our clients use a builder experienced in the system. It's great to see there's an increasing number who are qualified in ICF – there's even an NVQ Level 2 contractors can take now, or we can provide training on site."

Looking to simplify the process even further, in early 2019, Quad-Lock's main UK distributor Net-Zero Building Supplies launched a shell build option. "We realised that most people simply want their dream home; they don't necessarily want to put it together with their own hands," says Net-Zero's Stephen Campbell. "So we've combined the groundworks, walling system, roof, engineering and project management to offer a package of services up to weathertight shell stage."

3 QUICK-FIRE QUESTIONS

How are window openings formed?
This will depend on the exact system you choose. The Nudura method uses pre-formed EPS closers that slot into place at the top, bottom and sides to contain the pour (with timber bracing) and maintain the thermal envelope. Alternatives include inserting temporary metal frames. Whichever option you choose, the key is to triple-check everything's as it should be before the pour, as cutting concrete back after the fact isn't much fun.

What's the roof made of?
ICF is a walling-only system. Most self builders will go for conventional Fink or attic trusses for the roof. You can switch to options such as SIPs (structural insulated panels) up top if you wish, but double-checking your engineer can deal with both elements first; otherwise you could be adding complication. Alternatively, Net-Zero's whole house shell package can include the use of its own iFoam beams to create a hybrid, pre-insulated roofing solution.

What about internal walls?
You can use ICF, and it may make sense to for load-bearing internal walls or where you need great sound performance. But the downside is they will be pretty thick – hence to maximise floor space, many people switch to standard blockwork for load-bearing internal structures, and timber studs for partitions.

There are two main routes to choose from. Net-Zero's assisted self build service is intended for DIY-led schemes, where you pay a fixed percentage price for technical support, to reassure both you and your insurance/warranty company that you'll be getting a high-quality result. The second is a fully-managed option. "With this popular route we provide all the products at cost price, with groundworks done on a cost-plus basis, and charge a management fee to construct the house shell," says Stephen. "This gives you transparency about what you'll pay to get to weathertight."

Above: Featuring three interlinked buildings as part of a single home, this stunning project (which won a Build It Award in 2016) demonstrates the design versatility of Beco Wallform's ICF system

CONTACTS

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HOW TO SPECIFY ENTRANCE DOORS

Matt Higgs, from specialist doors and windows company Kloeber, shares his views on the key considerations that should go into selecting the right front door for your home

Choosing the right entrance door for your property is one of the most important decisions on any build. It can give your house presence and personality while helping to create a positive first impression. To find the best product, you need to weigh up a number of factors that are essentially linked to your home's style, the material the unit is manufactured from and how the product performs.

There are a lot of different options on the market for front doors and it can be difficult to understand the specific pros and cons of each model. It's highly recommended that you speak to an expert when making your selection and that you go and view any product you're considering. By doing this, you can get a feel for the quality and features included, so you can see exactly what value you're getting for your investment.

Aesthetics

The choice of colour is always one of the biggest design considerations. This factor can also be linked to the material you specify – for example, natural timber products present the option of adding a stained finish to create warmth and depth. Greys and black are always popular; certainly for a more modern look. Saying that, people are increasingly opting for more daring, vibrant shades like orange, yellow and pink, which really add a focal point to the front of a property and give it individuality.

Materials

The most widely-used materials are composite, PVCu and, for the higher end products, timber and aluminium. PVCu and some composite units make for very cost-effective options, but quality varies. Cheaper models on the market don't generally present value for money, as with a front door you have to invest enough to ensure quality, security, longevity and stability. Timber and aluminium doors usually offer a higher-quality finish, a more solid feel and better performance.

Technical specifications

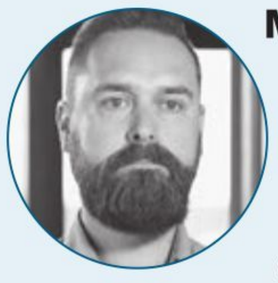
The main technical factors that you need to weigh up are:

- **Thermal performance** One of the primary functions of any door is keeping the heat in and the cold out.
- **Airtightness** So many older units seal poorly onto the frame and let in drafts. Letter plates can also allow the cold air to come inside.
- **Security** Keeping your home safe is paramount. A high performance entrance door can deter burglars. Look for models that have been tested to PAS24 or Secured By Design standards. PAS24 testing is one of the ways you can achieve Part Q of Building Regs for security applying to new builds.
- **Threshold** Most people like to have a flush thoroughfare from outside into the house. To achieve this, it's important to look at the cill or threshold details. Building Regs stipulate you must have a flush boundary on at least one entrance on a newly constructed property.

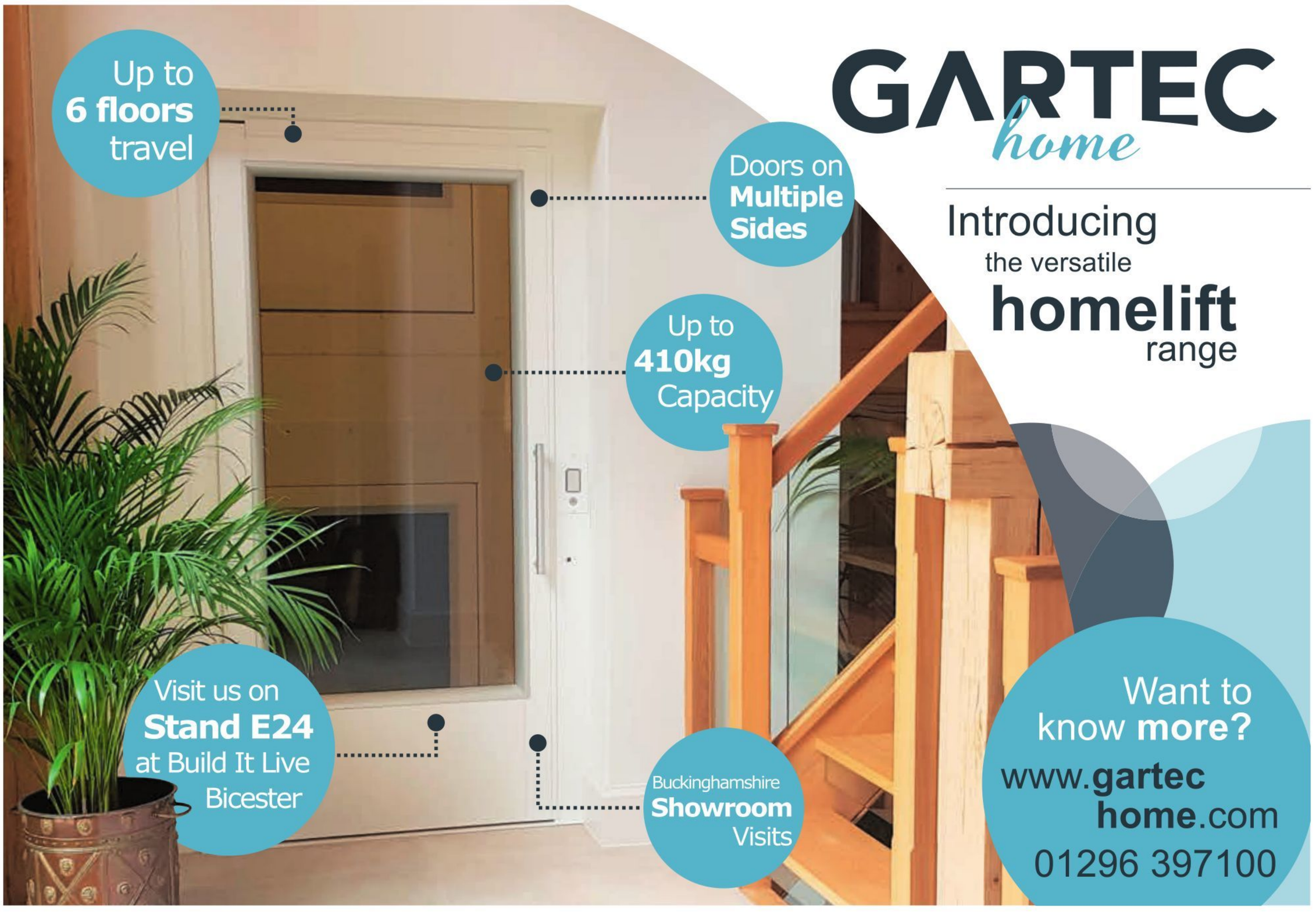
Installation

The best way to go about having your new door fitted is to give the responsibility to the supplier, as this will provide you with peace of mind that everything is in the hands of one company. Some are easy to install by the homeowner, but others can be slightly complicated and thus require more experience and knowledge. With guidance from a trusted professional, you should find the right solution for your requirements.

Above: This FunkyFront door by Kloeber is made from timber and has a modern anthracite grey finish. It perfectly complements the expansive glazing surrounding this modern home's entrance



Matt Higgs is a director and co-owner of Kloeber UK. He has been involved in manufacture and construction for over 20 years, and has experience in production, design, engineering and project management roles. For 10 years he been on hand to advise self builders, developers and home improvers on doors and windows and has managed many glazing projects including Passivhaus builds, extensions and eco homes as well as large scale developments. **Call 01487 740044 or log on to www.kloeber.co.uk to find out more**



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HOUSE DESIGN masterclass

Part 4

Developed design & getting through planning

Translating your ideas into house plans is an exciting stage. Julian Owen discusses how to get your scheme ready for planning

Once you've agreed on a design for your new home, you might expect it to be plain sailing to get all the details finalised and ready to submit with a planning application. Yet often it takes a while to refine broad ideas into a consistent, credible scheme. Your drawings need to present a house that fits your brief and budget, as well as actually being buildable.

Be aware that once planning approval is granted, any significant alterations made that affect the massing, materials or general appearance of the house will require you to resubmit, which is a time-consuming and potentially costly exercise – so it's important to get it right first time round. The design is not exactly frozen, but it does become increasingly difficult to alter after this point.

WHO WILL SEE THE APPLICATION?

Don't forget it's not just the planners who will look at the application. Council officers are used to seeing drawings and appreciate what the finished building might look like, but this is not universally the case. Your plans become a matter of public record available to neighbours and other interested parties, so the better it's presented, the less likely there will be objections. Even if they don't ask you to produce a written document describing the design and how it will relate to its surroundings, it's useful to prepare one anyway because it will go up on the council's website and effectively act as a sales pitch for the scheme.

If your application is contentious, it may go before a planning committee made up of councillors with mixed abilities when it comes to understanding drawings. I once met a committee making a site visit which seemed to go well, all apart from one councillor, who was frowning with displeasure. With a certain amount of irritability, he told me that he found it impossible to work out what the elevation I had drawn was supposed to look like. When he showed it to me, I cheered him up no end by turning it around so that it was no longer upside down.

What's included?

Planning application drawings have to show the size, shape and context of a design, along with an indication of the materials that will be used externally. If your plot lies within a conservation area or next to a listed building then you might be asked to provide more information about the detailed construction; for example, a large scale drawing of the joinery that makes up the doors and windows.

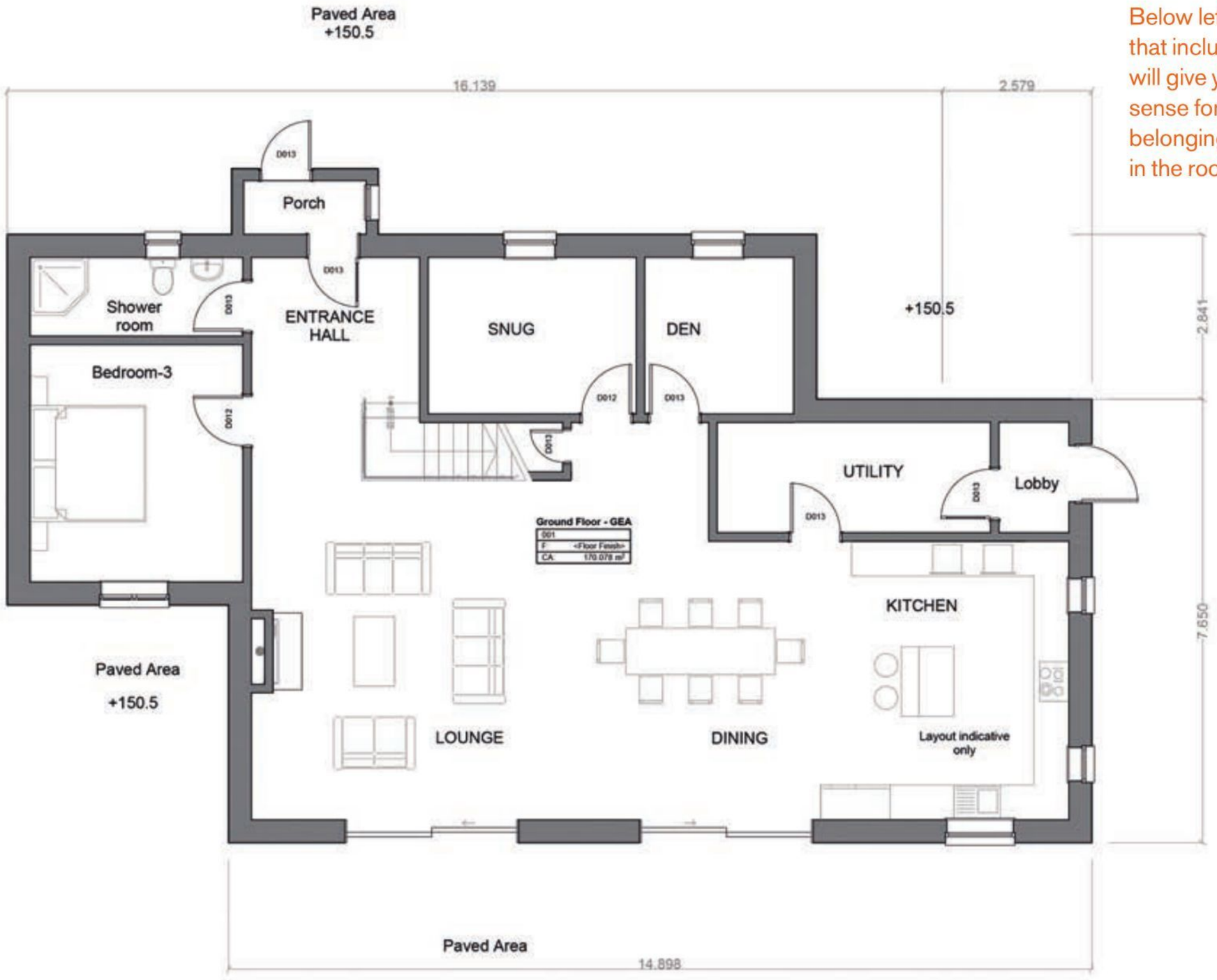
The council will be expecting your planning application documents to comply with a precise set of rules, designed to ensure they are easy to understand and comprehensive enough to allow a decision to be made and enforced. This is why the drawings have to be a recognised scale (usually 1:100 or 1:50), with scale bars and north points on the plans. If any essential requirements aren't met the application will not get past the local authority officer whose job it is to register the proposal onto the system.

It's usually not enough just to provide a design; there's an ever-increasing list of reports that might be required, tackling topics such as bats, newts, flood risk, archaeology, trees, contaminated land and noise pollution. If you have opened a dialogue with the planners when the concept was being developed, you ought to have been told if any of these apply and have consulted the relevant specialists. By this point, then, you should be able to verify that your design will comply with the restrictions imposed.

Understand the drawings

Agreeing the design is an exciting stage for self builders because it's when the house starts to become real, rather than just an interesting collection of ideas. But you need to work your way around the different aspects of the scheme and test them out with a critical eye.

It can be difficult to look at a scaled floor plan and visualise how it will work in real life. Don't be surprised if there are aspects of the property that are still in the architect's head that haven't leapt out at you from 2D



Below left: Floorplans that include furniture will give you a good sense for how your belongings will fit in the rooms

plans and elevations. Design teams are so used to reading drawings that it is easy for us professionals to forget our clients may not fully understand the ideas being proposed. Don't sign off a scheme until you're sure on all the aspects and it's been explained to your satisfaction; if necessary, ask for 3D drawings and a fly past animation.

It may help you to have furniture drawn into each room. Architects have access to a myriad of standard, scaled objects that can be dropped onto a CAD drawing but remember these are generic and might not represent the furniture you are going to use with any accuracy.

Ideally you should get your designer to draw the pieces of furniture you already have (or plan to buy) accurately and in position. This can be a revelation, particularly if it turns out that it won't all fit, or your favourite settee ends up looking lost in a sea of white space with the telly fading into the distance on the far side of the living room.

Just as important as where the furniture will go is the space around it. Although invisible, a certain amount of a floor area will always be needed for circulation so you should work out how you will move through a space – hopefully without having to squeeze past an armchair to get to a door on the other side of the lounge.

Get it costed

Another essential before you submit to planning is to get a quantity surveyor (QS) or builder to confirm that the project sits within your budget. Bear in mind that a builder's approximate cost will usually be very optimistic because they want you to come back to them at tender stage. In my experience, a QS will be more blunt, telling you what you need to know rather than what you'd like to hear.

Allow for contingency elements, so that if the prices do come in too high when you put the project out to tender, you can still achieve the approved design by reducing the specification quality rather than having to start from scratch with a fresh planning submission.

Beyond the application

There is much about the building that the planners do not need to know, but that you should have worked out,

Above: It's a good idea to ask your designer to provide 3D visualisations so you can get a real sense of what the house will look like

PLANNING APPLICATION CHECKLIST

- Your covering letter.
- A completed application form.
- Certificate of ownership (if the site belongs to you) or Certificate of notification to the owner (if it doesn't belong to you).
- Certificate saying it's not agricultural land.
- An Ordnance Survey location plan at 1:1250 or 1:2500 scale with a red line around the site.
- Plans and elevations at 1:00 or 1:50 scale.
- A block plan of the building and site, usually 1:200 scale for a house.
- A cheque for the planning fee.

If in a conservation area, typically also:

- A design and access statement describing the relationship of the new house to its surroundings and planning policy.
- Application for conservation area consent if demolition is involved.

drawings, the lower the chances of unnecessary questions being raised by the council or anyone in the area who may want to object to your planning application.

Submitting the plans

Sadly, I find there are few councils who eagerly await the arrival of a fresh application to build a new house and cannot wait to start considering it. Instead, what usually happens is that it sits on their desk for anything between a few days and a couple of weeks, before being scrutinised and validated. If anything is wrong or missing and you are asked to amend it, you can easily lose a month before a planning officer is assigned to deal with it and the eight-week clock finally starts ticking towards a decision.

Unless you believe you're certain to get approval or are working to a very tight build programme, it's best not to start the construction drawings until you have the approval notice in your hand. If you do and the application is refused or interfered with by the planners, you'll have to pay your architect for the abortive work that results.

There are parts of the next stage you can work on. You can start to browse the DIY stores and builder's merchants and exhibitions for sanitaryware, fixtures and fittings, for instance, or obtain colour swatches and tile samples. This is your last chance to enjoy the design process being almost completely under your control, because from this point on you'll find that more people will become involved, all of whom must be persuaded to stick to your vision.

Right: The Build It Education House drawings were put together by Lapd Architects (www.lapdarchitects.co.uk). For the latest update from site, see page 62

especially when it comes to ensuring the house can be built to match the design that gets the stamp of approval from the chief planning officer. This requires a certain amount of background work in anticipation of the later stages of the project, when construction drawings will be produced.

An example of this is the popular contemporary detail where glazing meets at a corner without a column, leaving the roof appearing to float above without support. This illusion is achieved by cantilevering a steel beam and if you want to show how it will look accurately on the application drawings you need to know the depth of the beam, the area that will be unsupported and where the beam will rest on solid walls. In this case, it's a sensible precaution to get this designed in advance by a structural engineer before the planning application is submitted.

For similar reasons, it's helpful to know the building system that the house will be constructed from. Whether it is timber frame, SIPs or masonry will affect how easy it will be to match the appearance on the planning drawings.

If you've already chosen the suppliers and products for certain details, whether bricks, windows or roof materials, you may choose not to indicate this on the drawings you submit to the planners. This is because the council will normally be happy for the description to be supplied later as a condition of the permission granted.

You should have a professionally prepared drawing of the existing site, including all the features of the land and spot heights of the ground and surrounding buildings, but the planning officer only needs a few levels and scaled drawings to assess the application. If more are required, they can easily be supplied, but the less information on the

There are parts of the next stage you can work on. You can start to browse the DIY stores and builder's merchants and exhibitions for sanitaryware, fixtures and fittings, for instance, or obtain colour swatches and tile samples. This is your last chance to enjoy the design process being almost completely under your control, because from this point on you'll find that more people will become involved, all of whom must be persuaded to stick to your vision.

JULIAN OWEN

Julian Owen is an East Midlands-based 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

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Foundation solutions for home extensions

Get your extension project off on the right footing with Tim Doherty's in-depth guide

Above: This extension project features deep basement foundations

So you've got a great design in the bag and you're keen to crack on with your extension. First things first: you need to decide how to build it, and that process starts with the foundations. Specifically, you need to understand what supports the existing house. This will have a major impact on the design of the new footings. Combine this with knowledge of soil conditions, trees, service/drain locations and more, and your team can plan the best solution for your project.

Typical existing foundations

The long hot summer of 1976 heralded a turning point in foundation design. Following a significant flurry of claims for subsidence, insurance companies insisted they were cast deeper to help stabilise new and replacement dwellings. Before that, houses built in the 1930s to 1970s may have had foundations little more than 600-800mm in depth and the Victorian / Edwardian periods frequently only went to depths of just 450-500mm.

In fact, the Victorians, famous for their solid brick external walls, used to step the brickwork out by a quarter or a half of the brick's width over several courses, so that the bottom of the wall ostensibly sat on a wider brickwork footing. This footing may in turn have sat on a shallow strip of concrete, but generally speaking not to any significant additional depth.

Houses built inter and post war may have used more concrete and less brick, but the trend would still have been for relatively shallow foundations. This was the case until changes to the Building Regulations introduced minimum notional target depths of circa 1m to try and help eliminate superstructure movement.

If you have an old house with an existing cellar, this will probably have pretty shallow foundations under the base of the external (retaining) walls beyond the cellar floor. There's also unlikely to be any transition between the foundation design for the adjacent above-ground walls. So the cellar might be down to a depth of around 2.5m, and sit immediately next to a non-cellar wall foundation of only 500mm depth. Nowadays, it is common practice to transition these changes in depth over a short length of walling.

Topography, trees, services & drains

Next on the list should be a practical assessment of levels, planting and services on your property. Drains, in particular, have a nasty habit of being right in the way of where you'll want to put your extension – as traditionally they sit close to the existing building and often wrap around several sides.

Sometimes drains on your land also cater for neighbouring properties, and here you'll be under an obligation not to compromise overall performance. Technically, any installation that serves two or more properties is considered a public drain, and under regulations introduced in 2011, the water authority is responsible for its maintenance. So, should a diversion be needed to allow for your extension, plan well ahead and make sure that the water authority agrees with your proposals.

The same applies to services (gas, electric, water and broadband) leading to your property: always make sure these won't be compromised by the addition, and speak to the network distributor if necessary.

If large trees are in close proximity to your home or extension, this can also be a problem. The NHBC (www.nhbc.co.uk) has a very useful guide that shows how deep your foundations will need to be according to the height of common species and how far away the house is from the tree. Topography is also important: if the ground is sloping, then stepped foundations may be required. Here, again, there are clear minimum standards to conform to in terms of the depth and length of steps, and how far they need to overlap.

Bear in mind, too, that if your extension is close to a boundary or within six metres of your neighbour's property, you may need to come to an agreement under the Party Wall Act prior to excavating any trenches for your foundations. The Act provides a

WORKING WITH CONCRETE

Most folks will choose ready-mix concrete over on-site mixing; certainly if they need more than a couple of square metres. Be sure to let the supplier know that you are after foundation concrete (typically specified as 'Gen1'), as the mix is usually slightly weaker than the concrete used for floor slabs.

Depending on access to your extension, you may need to cart the concrete into position manually. You will need plenty of bodies and barrows to do this, as the delivery lorry will charge you for standing time after around 30 minutes on site. Alternatively, on a big extension where there's a decent volume to pour and access is very difficult, a mobile pump might be the answer. Talk to the concrete supplier, as they can often provide this as part of their service or recommend a plant hire company to go to.

NEED TO KNOW: DEALING WITH DIFFERENTIAL MOVEMENT

The issue of differential movement can occur where two separately built structures, each with their own distinctive specifications, stand side by side. So, your existing house might have solid brick walls, with flexible lime mortar and brick footings on a thin concrete plinth. The building may well appear stable and to all intents and purposes perfectly happy founded on the sub soils, but it is probable that it quietly expands and contracts based upon thermal influences and potentially minor volume changes in those subsoils.

The extension will use modern concrete foundations to a greater depth, however, and probably thicker cavity walls constructed with stronger cement mortar. It could also have different roof loadings, depended on the design. The reaction of this new addition to the same subsoils might therefore be different and this 'differential' in the two structures' reactions could potentially cause brittle brickwork to crack.

At the junction between the two, the engineer may therefore call for a movement joint to enable fractional differences in movement to be accommodated in a flexible vertical joint.

Right: Access to the site can be poor on an extension project, so much of the work often needs to be carried out by hand

framework for preventing and resolving disputes – find out more at www.self-build.co.uk/party-wall.

Soils

The type of subsoil will also influence the depth and width of foundations required; and sometimes affects more fundamental aspects of the foundation design. The ideal conditions to find are well-compacted sandy gravels (with the right mixture of porosity and compressive strength), chalks or sand/siltstone. Generally, these will allow for straightforward foundations.

Clays, on the other hand, will shrink as they dry out in summer and expand when they soak up moisture in the wet seasons – so footings generally need to be deeper and wider. You may need to install specialist products, such as clayboard, in order to stabilise the foundations – or even an engineered solution. Similarly, if the soil adjacent to your property is soft, organic or generally unstable (such as filled, made-up ground), then you'll probably need to appoint a structural engineer.

Can you use trench fill or strip footings?

The easiest type of foundation to build is an excavated trench which is then mass filled with concrete (hence the name trench fill). This is usually taken all the way up to 75mm below the top of the excavated trench walls, and then a course of blockwork is installed up to damp proof course (DPC) level – giving you a minimum of 150mm clearance above external ground level (subject to the detailed design for your project).

Strip footings work according to the same principles, but the depth of concrete is restricted to the bottom of the trench only, up to depths of around 200-400mm (usually with a couple of reinforcement bars). The rest of the foundation wall is constructed in dense concrete blockwork, directly under the above-ground external walls, with a DPC separation at floor level.

Concrete costs mean trench fill is a bit more expensive, but most people go for it as it's so quick and easy to install. Widths are usually 450mm or 600mm to match excavator bucket sizes. The external wall system, which is typically around 300mm thick, then sit directly in the middle of the foundation. The trench sides should always be vertical, so you can be sure the concrete is substantial all the way to the base.

If access is tight and the trenches need to be hand dug, it's fine to go for something between those two widths (unless your engineer says otherwise). The key thing is to ensure the setting out is accurate and the wall sits centrally on top of the foundation.

Using string lines and profile boards is the easiest way to accurately set out the site. If the excavation depth is more than 1.2m (3m being the maximum with these standard foundation types), and depending on soil conditions, then the sides of the trenches may need to be supported temporarily. Pumps might also be necessary to remove any water in the bottom of the excavations.

Engineered rafts

Where trench fill or strip footings aren't suitable, your structural engineer might opt for a raft. This integrated foundation and floor slab is specially strengthened at the sides and mid-span (or in point loading locations) and all tied together with reinforcing bars and mesh.

It's unusual for an extension to use a raft. As the name suggests, this option is designed to 'float', so there would need to be a purpose-designed movement joint at the junction between the new addition and the existing dwelling. But engineers are solution-oriented people, and if it's the right move for your project and the site conditions, then they'll specify it!

Piles & pads

More likely on troublesome sites will be concrete pad or piled foundations, with purpose designed engineered ground beams spanning from one pad/pile to another. The floor structure (which may be concrete or timber joists) is then suspended on these ground beams.

The choice between pads or piles is based upon soil conditions, with the latter being a more extreme, and thus expensive, option. Typical domestic piles can reach depths of 6m to 8m – or even further – to reach good ground bearing strata. Mini piles work on the same principle but are often confined to depths of 3m to 4m, with several different options of how these could be installed; some can be twisted into position much like a cork screw. The engineer will have to approve the eventual design and some piling firms have their own engineering services to offer a full package. A major cost is the pile caps, which sit on top of the piles to give a level base for the ground beam.

Concrete pads, by comparison, are often only one metre square and are built to normal depths of 1m to 1.5m, with reinforcement typically added to tie the ground beams to the top of the pads. One of the difficulties is shaping a pad of this size correctly – so this task is normally done by hand.

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 & building consultancy providing support to both the residential and commercial sectors.

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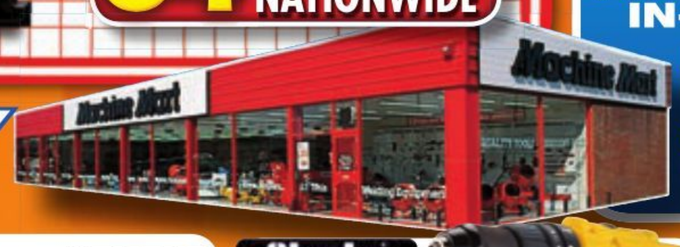

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Dealing with woodworm in period homes

Should this be something to worry about and what can you do if you suspect an infestation? Alan Tierney gives the lowdown

Pretty much every period property will have experienced a woodworm attack at some point in its life. It can be a cause of much worry, but this is rarely as serious as you might fear, and in fact very frequently prompts unnecessary, expensive and potentially harmful remedial work and treatment. Unfortunately, this is regularly recommended by building surveyors who should, but often don't, know better.

What is woodworm?

Woodworm is actually a wood boring insect: the Common Furniture beetle. The damage an infestation causes is largely down to the larvae, which live in timber and use it as a food source, boring extensive, very narrow tunnels.

When the larvae have reached a sufficient size, they change into beetles, mate and lay eggs within the gallery of tunnels they've created. They then chew their way out to go off in search of a new piece to colonise, leaving a distinctive flight hole (usually just a couple of millimetres in diameter) on the surface of the timber.

What they need to thrive

Wood boring beetles' natural environment is the forest floor, where they feed on dead and decaying trees. They're not adapted for life in buildings and can only survive indoors when conditions are particularly favourable for them.

Like most living organisms, woodworm need a number of essential factors to live. These are food, oxygen, water and a suitable host location. Timber in buildings provides that host location and there is plenty of oxygen about, but sustenance and water are more limited in a healthy house.

The larvae's food source is the starch in the timber (the growing tree's own food store). This starch is only present in the outer part of the tree, known as the sapwood. The structural timber historically used for building was primarily taken from the central core, known as the heartwood, which contains no starch – so the larvae cannot feed on it.

So most structural timber is immune from woodworm. That said, the process of turning a round log into a square beam often leaves sapwood at the corners. Hence it is common to see the edges eaten off timbers in an old house – but this has no effect on its strength.

Timber that is severely compromised by woodworm attack is usually modern wood (which is often poorer

Above: In most old timber frame buildings the sapwood at the corners of posts and beams will have been eaten away long ago – without any damage to the structural heartwood. Right: The cut end of a log, showing the definition between the living sapwood (usually lighter) and the attack-resistant heartwood

quality, containing a higher proportion of sapwood) that has been incorporated into the building at a later date. This might include floorboards or rafters if it's been re-roofed.

As an organism adapted for the forest floor, woodworm needs timber to be quite wet to provide it with sufficient water. A normally dry building will not have nearly enough moisture for this. If there's some damp, they might be able to survive in fairly low numbers – but it would need to be pretty serious for a problematic infestation to develop.

Very old houses will inevitably have experienced periods of damp, so there will always be signs of past infestation. In a historic timber frame building you will invariably find that all of the sapwood has been eaten away at some time.

Is it active?

Remedial treatment is very often specified in response to evidence of long extinct woodworm. It's vital to recognise whether an infestation is active or historic. There are clear signs that will tell you whether or not it's a live case.

As the larvae eat through the wood, they only consume the starch and excrete the rest as fine dust. In an active infestation, you'll be able to see this bore dust (the colour of freshly cut timber) trickling from the holes. The more there is, the more extensive the infestation. Fresh flight holes have sharp edges and light-hued interiors. As they age the edges disappear and the interior becomes darker.

The adult beetles emerge between May and August. During this period dead beetles can be found on floors and windowsills. A suspected infestation can be confirmed during this period by pasting tissue paper to the surface of the timber. Active beetles will punch holes in the sheets.

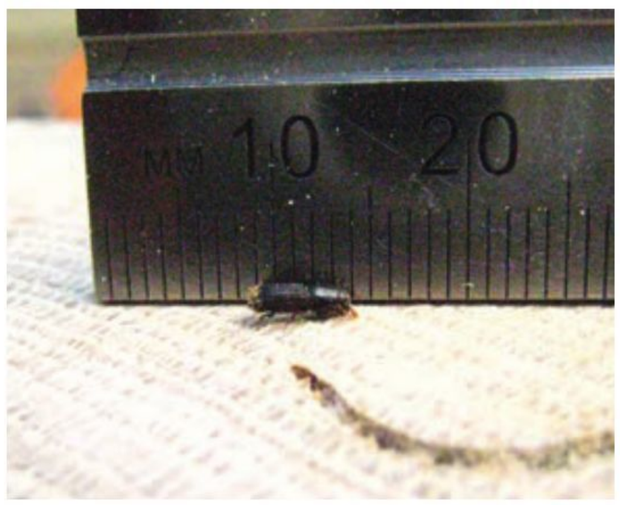
Treatment options

First, what not to do. Chemical spray treatments are widely specified to deal with woodworm, but in a high proportion of cases the colony is long dead. Even if there is an active infestation, the effectiveness of sprays is very doubtful – the chemical cannot soak into the timber to any significant depth, so it's effectively a surface treatment only.

In tests on historic timbers we have found that, even after prolonged soaking, penetration is less than 1mm. Because the larvae live deep inside the wood and the adults lay their eggs in the galleries before emerging, they are protected until the adults surface. Hence spraying will have no impact on the infestation – most of the emergent beetles die anyway, without the need for any poisons.

The chemicals used for these sprays are inevitably a form of insecticide. Recent tightening of restrictions on chemical use has further reduced their potential effectiveness. Moreover, the fact remains that this kind of treatment involves spraying poisonous substances around inside your home. I'd suggest this is hardly a sensible way to treat the space in which you and your family live.

The key to control of woodworm lies in understanding what they need to thrive, specifically their need for water. If there is an active infestation then moisture levels in the building must be abnormally high – in other words, it is damp. Resolving the causes of this issue will eliminate the woodworm. It really is that straightforward. If the building is dry the colony will die out. Damp will inevitably lead to infestation and other forms of timber decay.



Above left: The adult Common Furniture beetle can reach up to 7mm in size – and will chew its way out of the timber, leaving the characteristic flight hole. Above: Bore dust under a major infestation in modern rafters

Dealing with damage

Because woodworm cannot attack heartwood it will rarely cause any structural damage. Only modern timber, incorporating a high proportion of sapwood, is potentially vulnerable – and if it's been compromised, limited repair or reinforcement is usually all that's necessary.

There is no need to replace timber that has been attacked but not structurally affected. There is no risk of damage somehow spreading to the unaffected wood.

Remember, dry timber cannot be attacked; damp timber will be attacked unless it is dried out.

Most issues will be cosmetic and relate to floorboards, skirting, joinery and similar elements. The extent to which these items require replacement is essentially a personal choice depending on visibility, degree of impact etc. Historic woodworm damage to old oak timbers and the like is generally best regarded as part of the patina of age and embraced as a feature of heritage buildings.

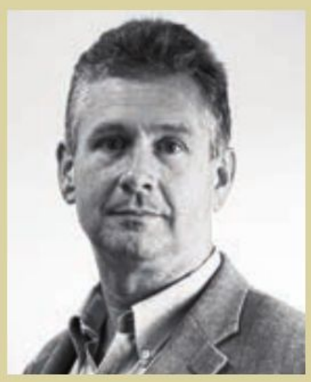
QUICK GUIDE: DEATH WATCH BEETLE

Death Watch beetle is a similar species to woodworm, but does have some important differences. It is larger and so can cause significantly more damage. It also has some ability to attack heartwood in very damp conditions where there has also been fungal decay. This means a serious infestation can cause considerable structural damage. The fundamental requirements for survival are the same. A damp building will be at risk; a dry one is immune.

KEY POINTS TO TAKE AWAY

- Check whether the woodworm is active.
- Look for bore dust, fresh flight holes and dead beetles.
- Ensure your surveyor understands how to identify and treat an infestation.
- Don't take advice from anybody with a vested interest in selling a solution.
- Avoid ineffective and potentially harmful spray treatments.
- Ensure the building is dry – woodworm will not survive in these conditions.
- Be selective in planning repairs; don't go beyond what's necessary.

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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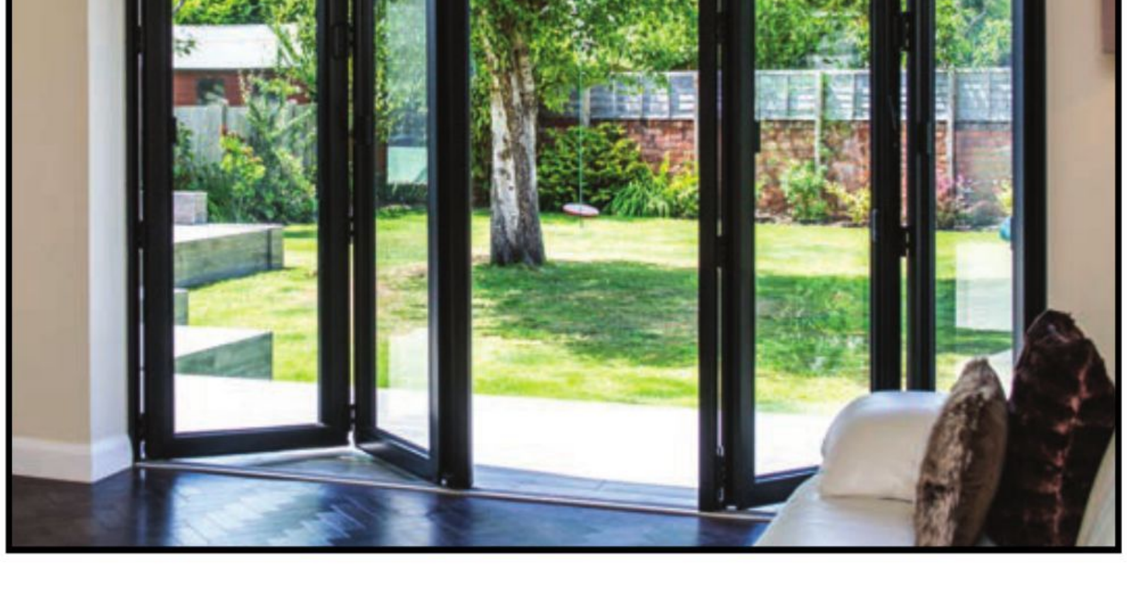

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WATERPROOF ENVELOPE SNAGGING

Rising and penetrating damp can have serious implications. Andy Butchers reveals the steps you can take to prevent these issues affecting your self build project

Ask any warranty provider about the biggest area of claims and the answer will be the same: the majority are due to penetrating damp through roofs and walls. Frustratingly for self builders, these problems are eminently avoidable, as they're usually caused by poor workmanship rather than actual failure of the components or materials.

Waterproof envelope snagging is, unfortunately, very rarely carried out. If my experience of working with self builders and contractors has taught me one thing, it's that it's important to implement a robust, proactive regime, from the start of a project right through to completion. Here's a closer look at the key areas to consider.

Rising damp & foundations

Instances of rising damp are rare these days, but it's important to pay attention at the foundation stages to prevent problems. A common issue is a lack of site investigation works. Normally this would provide a good insight into prevailing ground conditions. If it's not done, you could end up with incorrect foundation depths, which will require design changes to rectify matters and incur substantial additional costs.

The positioning and installation of the damp proof course (DPC) is another major factor when it comes to rising damp. Some of the most frequent problems are:

- Incorrect use and cutting of the DPC, such as trimming it too short, cutting into awkward corners or trying to make good with offcuts.
- Poor lapping of the damp proof membrane (DPM) to the DPC.
- Use of low-level cavity trays.
- The DPC being fitted below the finished ground floor level.
- Access ramps bridging the DPC, allowing moisture to cross over.

Water penetration in cavity walls

The main external walls of your new home need to be designed and built to withstand water penetration; but it's amazing how often mistakes are made. Issues that quite often need addressing include:

- Bridging of the cavity with mortar snots (lumps of cement).
- Insufficient cavity width.
- Poorly installed insulation (or use of the wrong material).
- Incorrectly positioned, missing or wrongly installed wall ties.
- Mistakes in the fixing of sundries such as cavity closures, movement joints, cavity trays and lintels.
- Changes in the characteristics and colour of the facing bricks.

There's more to consider, too. While it may sound obvious, windows must be correctly installed, for instance. They need to be the right way up and facing in the right direction, which isn't always the case! They should be properly sealed with good quality mastic, too, including under the cills.

Render is another common weak point. Go for a proven system and make sure to use skilled tradespeople, as well as follow the manufacturer's instructions. Where necessary, in particular on south-facing elevations, expansion joints should be included to allow for expansion and contraction due to thermal movement. If your property is in a highly exposed area, then consider using concrete blocks to achieve a good key for the render.

Water penetration through roofs

A change in British Standards has helped reduce the number of issues with roofing in recent years, but it remains the biggest problem area for waterproofing a house shell. Common defects include:

- Inaccurate setting out of slates and tiles. The installation must allow for movement and the correct overlap into guttering.
- Using the wrong fixing for the roof finish.
- Incorrect mortar strength. In some cases the same mix is used on the ridge as on the gable ends; and then the mortar just drops out, leaving gaping holes.
- Problems with the installation of stepped cavity trays, lead flashings, chimneys and rooflight flashing kits.
- Lack of bracing and restraint of timber roof trusses.
- Incorrect positioning of insulation, which will lead to issues with cold bridging and condensation.
- Wrongly fitted pitched roof underfelt.
- Incorrect positioning of guttering.
- Poorly designed flat roof build-up, causing interstitial condensation.
- Mistakes in the finishing and waterproof makeup of flat roofs, including drainage outfalls, parapet construction and more.

Avoiding problems

The best way to control the risk of these common defects appearing is to be aware of the main flashpoints; and to use competent contractors, properly trained trades and capable project managers (PMs) who will take the care and attention to ensure the quality of work is up to scratch.

At the end of the day, nobody wants to have to deal with claims or suffer the inconvenience of rectifying problems part-way through a build.

Andy Butchers is a building surveyor with over 25 years' experience in the construction industry and regularly shares his knowledge to help self builders and renovators avoid and overcome issues on their projects. He is a director of Build-Zone Survey Services, the technical company for Build-Zone and Self-Build Zone. **Call 01732 744186 or log on to www.bzss.co.uk to find out more.**

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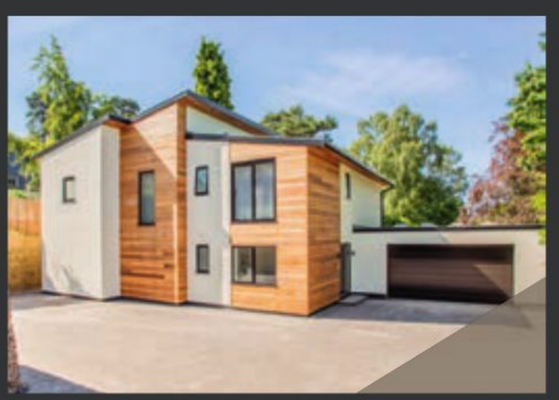

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Can the right contract save money?

It makes sense for all parties to ensure that your construction project is protected by a legally binding agreement between you and your builder, says Mike Hardwick

Many domestic small works for extensions, loft conversions or renovations are agreed on nothing more than a handshake with a contractor you've only just met. However, leaving the project in the hands of a builder and relying on their experience alone to see the job through without the benefit of any sort of formal contract is a risk.

To be fair, many construction projects are successfully completed in this way, but it's when things go wrong that you'll wish you'd had an effective means of resolving a problem. Without a contract, it's impossible to establish who agreed to do what, when and for how much. Here I'm looking at how these documents can help to achieve the right outcome and even save you money.

Why have a contract?

When it comes to small-scale works such as building a garden wall or resurfacing a drive, for example, a simple exchange of letters (or more likely these days, emails) is all that is required. The work is self-evident, you agree a price and a date for it with the contractor, and off you go. With larger jobs – and certainly when building a significant extension or a new home from scratch – multiple trades will be involved and you need to protect your investment and interests should anything go wrong.

It's a stressful process at the best of times, but if things don't go to plan, that stress will only increase. While a contract can't eliminate all of the anxieties, it can offer a degree of protection, reduce some of the inherent risks and allow you to keep control over the process.

Contract options

"A verbal contract isn't worth the paper it is written on," is a phrase often attributed to Sam Goldwyn of MGM. The fact that he probably didn't say it at all is an example of how anything based on word of mouth alone is hard to prove. In fact, an oral contract has the same weight as a written one – it is just that it is almost impossible to prove what was agreed, or if indeed anything ever was, if there is a dispute. It is for this reason that contracts should be in written form. You might be tempted to pen your own, but the problem with that is that in the event of a dispute, clever legal people can challenge what you have written and weasel their way out of trouble because what you write can mean different things to different people.

It is therefore important to use a tried and tested formula that has been scrutinised by legal professionals

QUICK GUIDE: POPULAR CONTRACT PROVIDERS

- **Joint Contracts Tribunal (JCT)** The JCT has been running for almost a century and has developed a number of contracts that are tailored to virtually every construction scenario, from large commercial sites to small domestic projects. Its basic Homeowner Contract costs around £38, which includes VAT, with prices rising in line with the complexity of the project covered. **www.jctltd.co.uk**
- **Federation of Master Builders (FMB)** The FMB offers a basic small domestic contract as a free download, and if you use an FMB-registered builder, you will get one of its excellent small works contracts included for free. **www.fmb.org.uk**
- **Royal Institute of British Architects (RIBA)** RIBA has launched a Domestic Building Contract aimed at all non-commercial projects including new builds, extensions, renovations and maintenance. Their contract ties in with the guidance it gives to architects under their Plan of Work, so will be familiar to any RIBA architect. The digital version can be downloaded for £42 including VAT (the paper version is cheaper at £30). **www.architecture.com**
- **Scottish Building Contracts Committee** If you are self building a new home in Scotland, then look for contracts provided by the SBCC. **www.sbcconline.com**

Above: You're more likely to have your build delivered on time and on budget if you pay in arrears in agreed stages – so your builder has an incentive to finish works

and this is where the small works contract comes into its own (see box on the previous page for more information).

The beauty of these contracts is that they are simple and easy to understand. They are written in plain English so as to avoid impenetrable legal jargon and technical construction terms. Because most of the contract is already drafted, it is for you to sit down with your builder and to go through the entire document, filling in the details that apply and crossing out the bits that you both agree aren't relevant. The contract is a formal agreement of the scope of what's required and is your proof of what is included in the price you've settled on for the work.

The contract will incorporate copies of the construction drawings and the planning permission, so if something is shown on the drawings, that work is covered in the price unless it has been explicitly excluded. This way, you know exactly what you are paying for and, equally important, your contractor knows they're going to get paid as long as they build what's been agreed between you.

Right: If your project runs over, a contract can prove that your builder isn't sticking to their agreed timeframe, allowing you to legitimately challenge their work

The more information that the contractor has, the more accurately they can price the work – and with an agreed price in place, you can formalise a payment regime that rewards progress. By that, I mean paying in arrears at defined stages so your builder has an incentive to press on with work, rather than getting some money every couple of weeks or so regardless of progress. It is important to remember that any subsequent changes to the contract have to be agreed in writing by both parties.

Can a contract save money?

The overriding fear for anyone taking on a major domestic building project is the risk of the builder doing a poor job, overrunning by several months or continually asking for more money to complete the job. In the very worst cases it can be all three. By entering into a watertight contract, there is very little wriggle room for the underperforming contractor. If what is being built simply doesn't match the drawings, you can prove it. If you are running over, that will be clear from the target completion date agreed in the contract. If more money is demanded, you have proof of the agreed price and drawing showing what was included, so unless the builder can justify additional money for work not originally covered by the contract, you can legitimately challenge their request.

Of course, there will always be some 'extra overs' for unforeseen work, and your job is to keep these to a minimum. If you have agreed hourly or daily rates for additional work within the contract, you can keep control of how much additional activity should cost, rather than being presented with an enormous and arbitrary bill at the end of the build with no way of challenging it.

Peace of mind

I used an FMB plain English small works contract on my self build project. I recall sitting down with my builder shortly after I'd hired him, going through everything line-by-line, filling in what applied to us and crossing out and initialling everything that didn't.

We both took away a signed copy for future reference, but I think the proof of the pudding is that, in the year of work that followed, neither he nor I had any cause to refer to it. My copy sat on a shelf gathering dust because all of the key issues had already been discussed and agreed – we knew who was providing the plant, who would notify building control, we understood what insurance cover was in place, when we would aim to start and finish, what the working hours were and who would arbitrate if it all went pear-shaped and we couldn't agree who was to blame. We had our moments during the build, but overall I'd say

it all added up to a pretty straightforward project and a positive experience for everyone involved.

While any of the contracts mentioned on the previous page would no doubt be just as good, I think the FMB contract I used was well worth its weight in gold, and considering the pressures on my budget, it was one of the few things that cost me absolutely nothing!

MIKE HARDWICK

Since successfully finishing his own bespoke scheme, Mike has become a well-respected project manager and self build consultant. He is currently general manager at the National Custom & Self Build Association.

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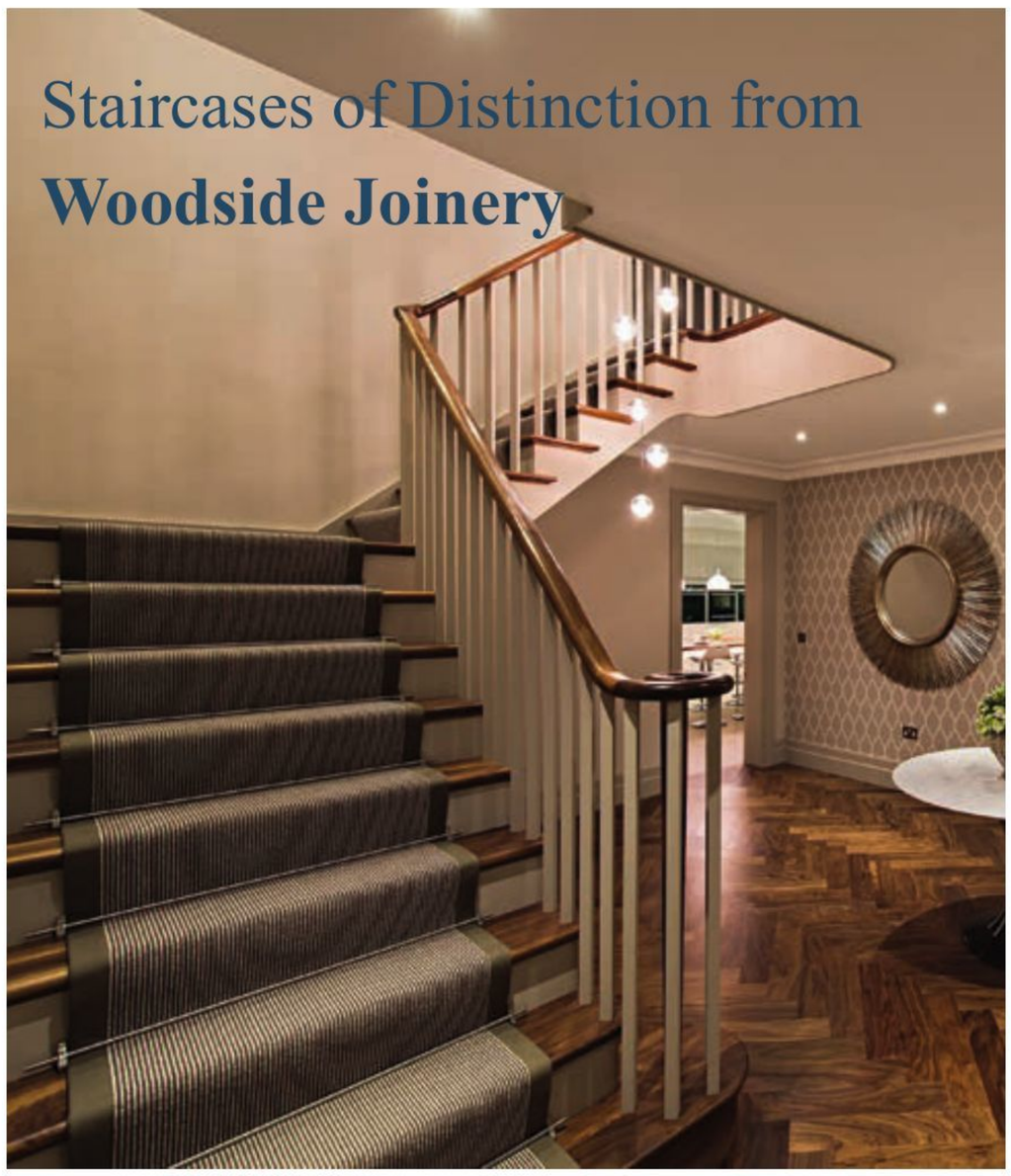

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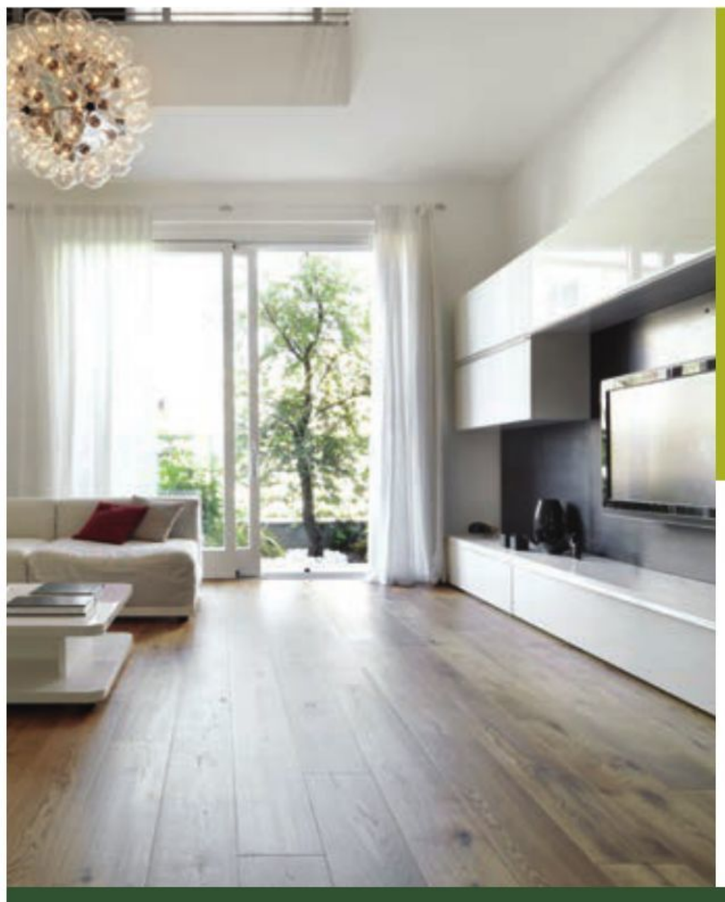

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Does it need **planning permission?**

Planning expert Mike Dade explains how to navigate the complexities of permitted development (PD) rights, and lays out six projects that are achievable under this umbrella

Given the time, cost and uncertainties involved in applying for planning permission, it's gratifying to know there are many projects you can undertake without making a full-blown submission. Some don't need consent at all, while others fall under the bracket of what's known as permitted development (PD) rights. This set of allowances permits a wide range of schemes from extensions, alterations and garden works through to conversions of various types of buildings. Here, I'm taking a closer look at what you can and can't do, as well as providing advice on navigating safely through the maze of rules.

The basics

Permitted development is the phrase used to describe a range of different types of project that the government has effectively granted a blanket planning permission for. These rights are set out in the General Permitted Development Order.

Most allowances are subject to a bewildering range of provisos and exclusions. The most common of these are the omission of listed buildings and anything on the grounds of such premises. There's also a reduction in the extent of rights within designated zones such as an area of outstanding natural beauty (AONB), conservation areas and national parks. Entitlements can be restricted or removed via a condition attached to a planning permission, or by means of a so-called Article 4 Direction. The latter is imposed by councils, most frequently within conservation areas. Also note that PD rules vary slightly between England, Scotland, Wales and Northern Ireland.

What doesn't need permission?

You don't need planning permission for work that's purely inside a house, including rearranging rooms and taking down walls. If the building is listed, you will require specially designated consent for any works that affect the fabric of the structure beyond simple repairs and decoration.

Minor external alterations that don't materially change the appearance of the building don't require permission, either. Whether a modification is material could be the subject of disagreement with the council, so it's always advisable to check if there's any possibility of doubt. Note that painting a property is covered by PD, although if you're doing this on a listed building – especially if you're finishing the house in a different colour – consent may be required.

Bear in mind, however, that any internal works to a dwelling could need Building Regulations approval.

What's the procedure?

The PD rights to convert buildings to residential use require a limited-scope application to be made to the council. Strictly speaking, this process is intended to enable the council to check the suitability of the proposal against various criteria. It isn't intended to determine whether the local authority agrees the project is PD in the first place. Permitted development rights to alter or extend properties, including garden projects, don't require any type of formal submission to the council, except for larger extensions where there is a notification procedure.

That said, unless your scheme is of a very small scale, it's sensible to apply to the council for a formal declaration that the works indeed fall under the PD bracket. This is done via a submission for a certificate of lawfulness. This isn't unlike a planning application, in that you need to complete forms, provide drawings and pay a fee. However, it differs from the formal planning process in that it's purely a legal question: is the project permitted development or not? The answer is only yes or no. It's supposed to be immaterial as to whether or not the council likes your proposal.

Above & above left: Proctor & Shaw (www.proctorandshaw.com) developed the design for the extension and remodel of this house. While the rear addition and loft conversion technically fell under PD rights, the homeowner was unsure if his entitlements still applied due to a structure added in the 1980s. To cover bases, he applied for a lawful development certificate and full planning consent. Permission was granted under the latter category

Above: A2studio (www.a2studio.co.uk) carried out the design for this rear dormer extension, which was completed under PD. The project was split into two to maximise what the homeowner was able to achieve, with the side extension requiring a full planning application.
Right: Designed by A2studio, the rear addition to this Victorian house was carried out under Permitted Development. The cantilevered canopy atop the extension adds a striking modern flourish, contrasting with the traditional aesthetic of the original property

What can you achieve under PD?

1 Extensions

Building out from your house to the rear or the sides, as well as making alterations to the roof, are all covered by permitted development, plus constructing small porches to the front. In Scotland and Wales the key allowances are 4m deep single-storey and 3m two-storey rear extensions. Also included are side additions up to half the width of the original house and roof extensions adding up to 40m^3 of space for a terrace and 50m^3 elsewhere.

In England the larger extension scheme enables 6m rear single-storey extensions to semi-detached and terrace houses and 8m additions to detached. However, interpretation of these rules is complex as there are numerous criteria any project must meet in order to qualify. These include height restrictions and proximity to boundaries. The government has produced a helpful guide entitled Permitted Development Rights for Householders. This is useful, but it's not a substitute for a certificate of lawfulness, as rules are complex and open to varied interpretation.

2 Conversions

Changing the use of agricultural buildings, offices, shops and light industrial premises to residential can all take place as permitted development. These rights need to meet a certain set of criteria to ensure the building was in the prescribed use at a qualifying date. They are also subject to the limited application process, enabling the council to check on things like highway safety, flood risk and potential contamination before the project goes ahead. Be aware that some local authorities remove rights to convert from offices in key commercial areas and from shops in prime retail areas. Always check rights exist if you're looking to convert in these types of locations.

RICK MCCULLAGH

3 Outbuildings & garages

These are allowed, subject to limits on height, proximity to boundaries and the structure not being at the front of the house (or to the side, in some areas). Garden developments must be for incidental purposes – so you can't use them to create annexe accommodation, for instance. There's no specified size limit, in terms of footprint, beyond a requirement that no more than 50% of the plot is covered by buildings, excluding the original house. However, the requirement for the use of the outbuilding to be incidental to the main dwelling limits the size of structure that can be constructed.

4 Leisure facilities

Swimming pools and tennis courts can be built under PD entitlements, although they can only be for private use. Courts and pools must be within the garden (or, technically, the curtilage of the house). Building into an adjoining paddock, for instance, would involve a change of use of the part of the land concerned.

5 Exterior elements

Fencing, decking, patios and paths are all allowable under PD. There are restrictions relating to the hard surfacing of front gardens and the height of fences and decking. Note that landscaping within a garden might require planning permission if there is significant level changing or excavation, as this would be considered an engineering operation.

6 Renewable tech

Solar panels enjoy permitted development rights. This applies to electric and hot water installations. There are restrictions on the scale of standalone arrays and on the siting of panels on roofs. Heat pumps, wind turbines and flues for biomass heating plants are also allowed in the interests of encouraging the use of renewable energy.

Summary

When you're contemplating a project you think might be covered by PD, be sure your scheme definitely falls under it before investing time and money. Beware of informal opinions from planning officers and taking too much note of what your builder says, as this guidance may not be reliable. There's no substitute for a certificate of lawfulness, which gives you the certainty you need, particularly if it's a major project. Also be aware that PD rights get changed from time to time. New rules come in and others expire, so be sure you're up to date.

MIKE DADE

Mike Dade is a land and planning specialist, and Build It's plot guru. He's one half of Speer Dade Planning Consultants and the author of several must-read books on plots and planning.

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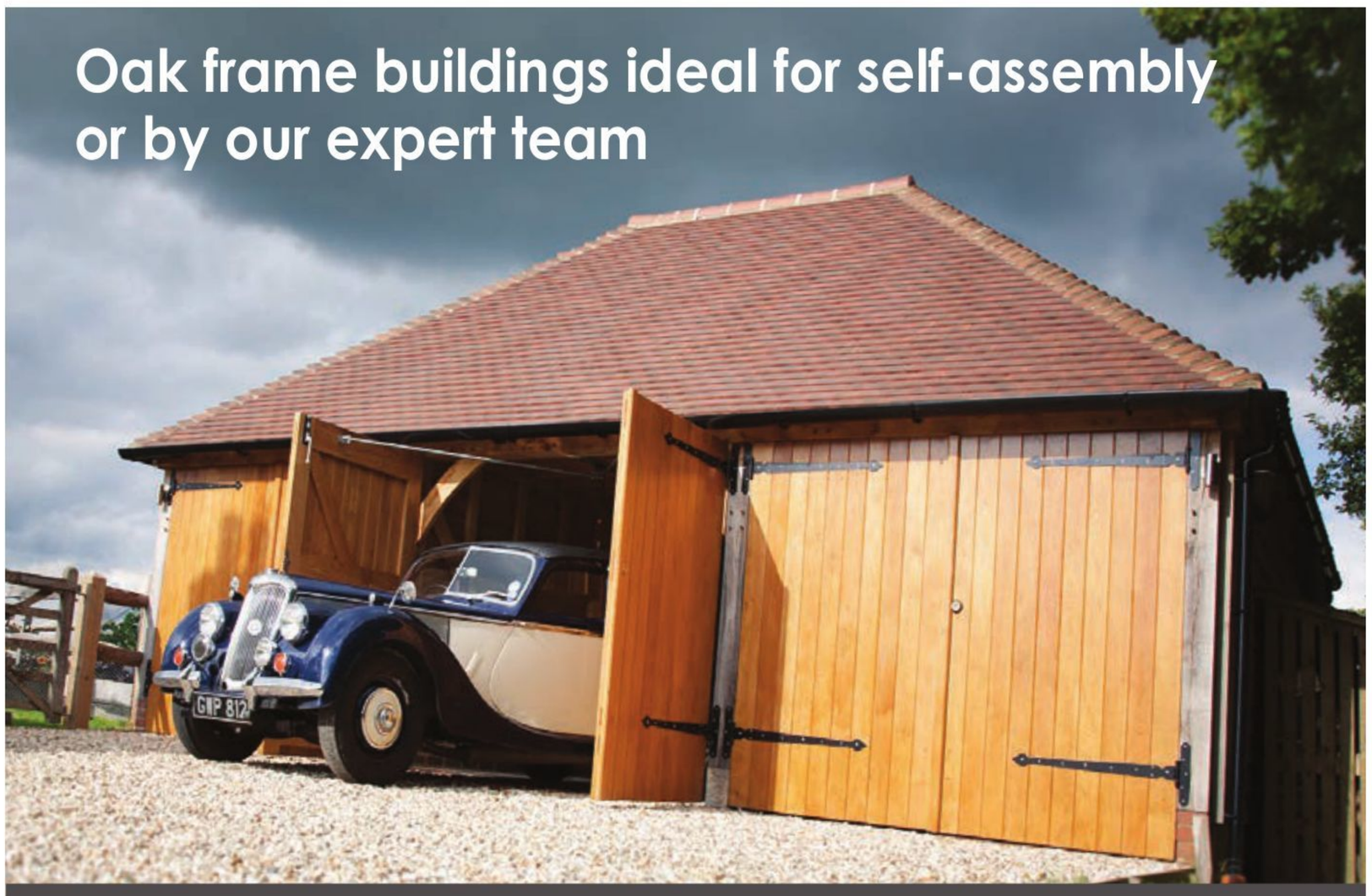

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Looking to fund your bespoke home project? Each month we round up the best deals from leading lenders and update you on what you need to know to secure the right finance

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Created by and exclusive to BuildStore, these mortgages provide guaranteed stage payments based on your costs before each phase of the build. This offers certainty in your budget and peace of mind that you can plan for and pay your bills on time.

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These mortages release funds after each stage of building works is completed. To trigger the payments, a valuation must take place that shows an uplift in value. BuildStore's exclusive mortgages can offer increased borrowing of up to 85% of your costs.

Get In Touch

For advice on funding options for your self or custom build project, speak to the experts at BuildStore by calling **0345 223 4647** or visit **www.buildstore.co.uk**

KEY FOR TABLE: ★ BuildStore Exclusive Product | SB Self Build Mortgage | CB Custom Build Mortgage | LTV Loan to Value

Lender		Mortgage Type	Payment Schedule	Contact	LTV Land	LTV End Value	Interest Rate	1st Stage Payment
Bath BS	★	SB & CB	Advance	0345 223 4647	95%	80%	4.44%	DPP & Building Regs
Buckinghamshire BS	★	SB	Advance	0345 223 4647	85%	80%	4.99%	DPP & Building Regs
Darlington BS	★	SB & CB	Advance	0345 223 4647	80%	60%	5.09%	DPP & Building Regs
Furness BS	★	SB & CB	Advance	0345 223 4647	80%	80%	4.15%	DPP & Building Regs
Hanley Economic BS	★	SB & CB	Advance	0345 223 4647	85%	60%	5.04%	DPP & Building Regs
Mansfield BS	★	SB & CB	Advance	0345 223 4647	85%	80%	5.60%	DPP & Building Regs
Vernon BS	★	SB & CB	Advance	0345 223 4647	85%	80%	5.50%	DPP & Building Regs
Buckinghamshire BS	★	SB	Arrears	0345 223 4647	85%	85%	4.84%	Foundations
Chorley BS	★	SB & CB	Arrears	0345 223 4647	85%	80%	4.64%	Foundations
Darlington BS	★	SB & CB	Arrears	0345 223 4647	80%	80%	4.74%	Foundations
Dudley BS	★	SB	Arrears	0345 223 4647	50%	75%	5.49%	Foundations
Furness BS	★	SB & CB	Arrears	0345 223 4647	80%	80%	3.99%	Foundations
Hanley BS	★	SB & CB	Arrears	0345 223 4647	85%	80%	4.74%	Foundations
Ipswich BS	★	SB & CB	Arrears	0345 223 4647	80%	80%	3.99%	Foundations
Loughborough BS	★	SB & CB	Arrears	0345 223 4647	80%	80%	4.39%	Foundations
Mansfield BS	★	SB & CB	Arrears	0345 223 4647	80%	80%	5.15%	Foundations
Newcastle BS	★	SB & CB	Arrears	0345 223 4647	85%	85%	4.99%	Foundations
Nottingham BS	★	SB	Arrears	0345 223 4647	80%	80%	4.64%	Foundations
Stafford Railway BS	★	SB	Arrears	0345 223 4647	85%	75%	4.27%	Foundations
Tipton & Coseley BS	★	SB & CB	Arrears	0345 223 4647	85%	75%	4.27%	Foundations
Vernon BS	★	SB & CB	Arrears	0345 223 4647	85%	80%	4.74%	Foundations
Virgin Money	★	CB	Arrears	0345 223 4647	85%	80%	5.29%	Foundations
West Bromwich BS	★	SB & CB	Arrears	0345 223 4647	85%	75%	4.29%	Foundations
Beverley BS		SB	Arrears	01482 881510	n/a	75%	4.99%	Wall Plate
Cumberland BS		SB	Arrears	01228 403141	75%	85%	Call	Flexible
Earl Shilton BS		SB	Arrears	01455 844422	50%	75%	4.99%	Flexible
Ecology BS		SB	Arrears	0845 674 5566	80%	80%	4.65%	Flexible
Hinkley & Rugby BS		SB	Arrears	01455 894083	n/a	80%	6.14%	Footings
Melton Mowbray BS		SB	Arrears	01664 414141	75%	75%	4.09%	Foundations
Newbury BS		SB	Arrears	Local Branch	66%	75%	4.45%	Foundations
Penrith BS		SB	Arrears	01768 863675	75%	75%	4.99%	Foundations
Saffron BS		SB & CB	Arrears	01482 881510	65%	75%	4.20%	Flexible
Scottish BS		SB	Arrears	0131 313 7700	60%	80%	5.89%	Foundations

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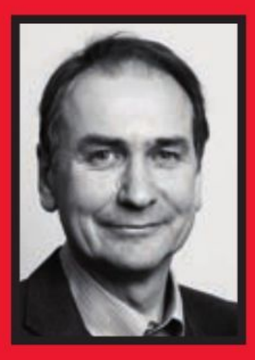

PLANNING
Mike Dade is a land and planning specialist. He is a contributing editor of Build It, a plot hunting expert and author of several books on planning and plot issues. He is one half of Speer Dade consultants (www.speerdade.co.uk).

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.

SCOTLAND
Angela Doran is NaCSBA's self build representative for Scotland, Wales and Northern Ireland, brought in by Glasgow City Council to coordinate a pioneering new self build project in Maryhill. She works to promote alternative, community and individually led housing in Scotland.

SELF BUILD & RENOVATION
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 general manager. He has first hand experience of the processes involved in building bespoke homes.

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.

SUSTAINABILITY

What are the alternatives to using the mains gas network?

We're converting three derelict barns in a field without any mains gas. It's 180m to the nearest supply. We have received a quote from SGN of £71,250 to connect. We've looked at all other options, including ground and air source heat pumps, but really cannot get a concise picture as to what would be the best solution. Can you please give us an idea as to what may be the best alternative energy source?

Do a good job on the insulation and your space heating demand will be very low. As there are three barns, it sounds as though implementing a shared heating scheme might be a sensible idea – and the lowest carbon solution would be biomass.

In addition, because there are multiple properties involved, you could qualify for the non-domestic Renewable Heating Incentive (RHI), which offers a better subsidy than its domestic counterpoint (as it lasts 20 years rather than seven). Each of the buildings would be individually metered. Failing that, go for a heat pump with the domestic RHI on each. Air source heat pumps are much cheaper to install but they are less efficient to run than the ground source versions.

Don't forget to install a solar water heater – these are reliable, low tech, made in the UK and will fulfil about 50% of your hot water needs. They are also relatively cheap to install if you're effectively creating a new roof from scratch.

WINDHAGER

PROJECT MANAGEMENT

Can I claim back the VAT on my self build from my receipts?

I am constructing a new house to live in and then plan on renting out my old one. I have put all the receipts through my books. I work in the building industry and I am not VAT registered, but would it be possible for me to claim back the VAT from the receipts where I was charged?

If you build a new dwelling that's your own principal private residence (PPR) then you are able to claim back VAT correctly paid to suppliers and contractors in delivering that property. The receipts for this will be quite separate to your business activity, which relates to works you deliver for customers of your business and thus to other properties and/or contracts. If you are in any doubt here you should talk to your accountant.

SELF BUILD & RENOVATION

Should we add cavity wall insulation to our 1970s home?

What are the potential pitfalls of having a 1970s cavity wall insulated? If we decide to go ahead, what are the best products that we can use?

In principle, adding an approved injected insulation to a clear cavity is a sensible upgrade to make older houses more energy efficient. The main difficulties come from low quality external brickwork, where cavities may already be bridged with mortar on brick ties or where the pointing is very poor and the brickwork too porous. This can lead to rainwater penetration. Houses on exposed sites should not be insulated in this way as, where buildings are too exposed, the cavity will be needed to help prevent damp penetration from wind driven rain.

In terms of product, you'll want to use a well-known brand that has comprehensive guarantees in place – insurance backed if possible – and a transparent test certificate from a body such as the BBA (British Board of Agrement). Take the time to read the BBA report and to be sure it applies to your kind of property.

PLANNING

Can the Right to Build help me get through planning?

I have a rundown stable block on part of my land that sits approximately 200m away from my home in its own paddock. I would like to knock it down and build a new property in its place. The structure is connected to water, electricity and sewage facilities. It's not overlooking any neighbours and I believe that a new dwelling would be a big improvement aesthetically speaking.

Would it be possible for us to get planning permission to build a new house there? Once it's finished and ready for us to move in, I would like to sell my current residence. I'm wondering whether the Right to Build scheme makes it more likely we'll get planning consent. I have been told this is possible, but can't find any professional advice.

Planning decisions are made on the basis of the relevant Local Plan legislation. Although a few councils have policies that allow a new dwelling in place of a rural building as an alternative to conversion, this is rare. If your local authority does not have such a policy, then it is unlikely that being signed up on the self build (Right to Build) register would carry enough weight to overcome the conflict. Your best bet is to run your idea past the council as a pre-application advice request, as this will flush out both their policy approach to your scheme and their attitude towards the Right to Build. You can find out more about these registers at www.self-build.co.uk/right-build

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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BEGINNER'S GUIDE TO

finding land

The first step in your self build journey is tracking down a viable building site. Keep yourself ahead of the competition with Build It's top plot hunting tips

Tracking down the right plot for your project is a little more complex than purchasing an existing house. The good news is over 13,000 people manage to find land and build every year – but if you want the best chance of identifying a viable site, it's worth getting to grips with the process first. Here's what you need to know.

LAND FINDING ROUTES

Few self builders simply stumble on a great plot by chance and end up building on it. Identifying the right opportunity can take considerable time and effort, so it pays to adopt a multi-pronged approach. So what are the best land hunting routes?

Use your contacts Tell your friends and co-workers that you are looking for a plot. They may have heard of someone selling in your preferred area, for instance, or even have a large garden they'd be willing to split at the right price.

Go exploring Walk around the locale to identify potential opportunities such as empty land between houses, garden plots or disused garages. If you spot a site you think has scope to build on, approach the owner and let them know you are interested. If the owner isn't obvious and you can't find out via the Land Registry, try speaking to the neighbour.

Talk to locals Head to pubs and shops in the area you're considering to meet residents, as they may be able to tell you about opportunities not yet listed. Professionals such as architects, building surveyors or planning consultants in the region may be a useful source of leads, too – and you might want to use their services further down the line.

Speak to business owners Local farmers, breweries, universities and other organisations may have surplus land they want to sell (or would consider selling). Many do so via estate agents, but there's no harm approaching them directly.

Sign up for your Right to Build Councils are now obliged to maintain official self build registers, thanks to the government's Right to Build legislation. You can record your interest in obtaining a plot and state the type of project you are keen to pursue. If 200 people sign up, the council is then supposed to permission 200 viable sites within a three-year period. You aren't guaranteed land, but the legislation should see the availability of build-ready plots improve dramatically.

FURTHER READING

www.self-build.co.uk/right-to-build

Visit the council's website Local authorities list current planning applications online, usually under the 'planning' or 'housing' sections – with details of the scheme, who has applied and when. If you find a likely-looking opportunity and can get in touch with the owner before they get consent, you'll be in a strong position to secure a purchase.

Use plot finding databases BuildStore's Plotsearch (www.plotsearch.co.uk) lists thousands of sites with planning consent across the UK. Happily, it's also free to use. As well

Above: Gorgeous plots do exist – but if you have grand designs on that secluded rural location, bear in mind that it's incredibly rare to get planning consent for a completely new house in the countryside. Demolish and rebuild may be a better route

as giving you the chance to find a good plot, this resource helps you get a feel for land prices and availability in different areas. You can also see which estate agents are active in your region. Turn to page 127 for a taster of what's on offer.

Check out property auctions Many good quality plots change hands this way. Auction houses such as Clive Emson, Allsop and Savills sell a variety of sites, so get on their mailing lists for catalogues. Remember that you will need to have finance in place – once the hammer goes down, the contract is triggered and a deposit is due.

FURTHER READING
www.self-build.co.uk/auctions

Register with agents Many building plots are still sold through traditional estate and land agents. Monitor the books of both types, as some may have overlooked the planning potential of properties they're selling (eg for a demolish and rebuild opportunity). The personal approach can pay dividends with this route, too – if they know you, they're much more likely to give you a heads up when something's coming onto the market.

WHAT MAKES A GOOD PLOT?

Picture the perfect piece of land and it will probably be in a pleasant area, affordable, completely level, easy to access and have good ground conditions, no obstructions and no planning issues that might hamper your plans. Trouble is, that plot doesn't exist (or at least if it did, a big developer probably snapped it up ages ago). In practice, even the best site will require you to make a few compromises. So it's crucial to assess contenders properly to check you can get as close as possible to your goals at a cost that stacks up.

Plots generally come with planning permission in place: either outline (which is a fairly loose affirmation that the site can be developed); or full (consent for a particular design). Beware any site that doesn't have a current approval. Land is worth considerably more once consent has been granted, so if the deal looks too good to be true, it probably is.

Basic potential

Once you've spotted a likely-looking opportunity, there are two key questions to ask before delving in further. Can the house you want to build be comfortably accommodated on the plot (eg in terms of size, local property values and the like)? And does the existing planning consent allow for that house, or could it be amended to suit? If you can say yes to both of those, then it's worth a bit more research.

In terms of site suitability, you need to check for issues that could increase construction costs (which should be factored into any offer for the land), make it difficult to get the right kind of design for your household, or affect the viability of a project. Some of the most notorious budget-busters include steep slopes, difficult access to services (electricity, gas, water etc) or obstacles such as trees, existing structures and overhead cables. But these issues may not be insurmountable, and with good design some can even be turned to your advantage. A sloping plot is likely to offer great views and the potential for a basement, for instance, and you won't face much competition from developers.

From a planning perspective, check how long is left on the consent. If it's less than about six months and you need to redesign the house or sort out any conditions the planners have put on the permission (such as approval for materials), this could be problematic. It might sound obvious, but you should also scrutinise the plot boundaries to ensure you're buying all of the land included in the approved plans.

Detailed assessment

If early-stage investigations seem positive, you can move on to a more in-depth appraisal of exactly how suitable the site is in terms of planning potential and build costs. This will take in things like access, trees, ground conditions, drainage and legal considerations. Build It's invaluable resource at **www.self-build.co.uk/plot-checklist** can help structure this part of the process. If you come up against anything you're usure about, seek advice from suitable professionals. That might mean speaking to your local council about planning matters or engaging a solicitor on the legals.

A planning consultant, architect or specialist design-and-build company may also be able to point you in the right direction or help you undertake a full viability assessment.

QUICK GUIDE **Types of building plot**

Bespoke homes can be constructed on a range of sites, and knowing about the opportunities can help you spot land with potential for your project. Here are some of the key options:

Brownfield sites This is basically previously-developed land that is or once was occupied by a permanent structure. Government policy supports the provision of new housing in such locations, so councils tend to look favourably on plans that have the potential to improve these plots. Plus, on a practical level, services are likely to be in place already.

Demolish & replace A type of brownfield opportunity where you could knock down an existing building, such as an old bungalow or former non-residential structure, and construct a new (usually bigger and more attractive) home in its place. It's often more cost-effective than tackling a renovation, as VAT can be reclaimed on a new build project.

Infill plots There's no formal definition of this type of site, but many councils take it to mean a small gap between an otherwise built-up frontage or group of houses. Infilling is usually allowed within settlements' development boundaries – and sometimes outside of these. Gaining consent will be more difficult in zones such as conservation areas.

Gardens Contrary to the 'backland development' and 'garden-grabbing' headlines of a few years ago, planners still allow schemes on garden plots – especially in places that are considered to be built-up. You may even be lucky enough to have a large space that could work as a viable site already; or know a friend who is willing to negotiate a fair price.

Edge-of-settlement Depending on the maps marked out in the relevant council's Local Plan, this kind of site might fall within existing built-up area boundaries or it might not. Generally, policies will allow development within this zone – but control it very strictly outside. This undeveloped land is known as greenfield, and will typically only offer housing to serve the needs of agriculture, replacement dwellings and some infill.

Serviced plots A fairly new option on the market, this term refers to land that's ready to build on – with utilities, highway access and possibly other infrastructure already in place, as well as at least outline planning consent. This route offers the benefit of more certainty over early-stage costs.

FURTHER READING
www.self-build.co.uk/serviced-plots

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A FULL LIST OF MEMBERS CAN BE FOUND AT:

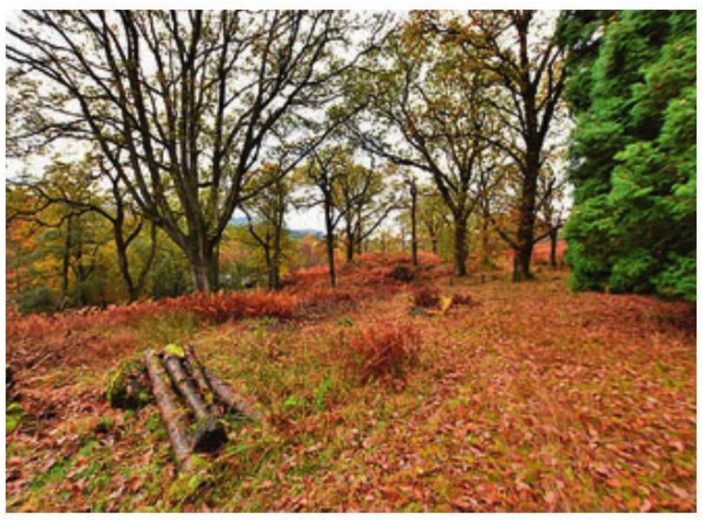
www.selfbuildportal.org.uk/members

Land FOR SALE

BUILDSTORE PlotSearch

It's FREE to subscribe to PlotSearch – the UK's premier land finding resource with over 8,000 genuine building opportunities, all with planning permission guaranteed. The plots collated here are a hand-picked selection, but you can find plenty more in the online database. To find out more and to subscribe call 0345 223 4499 or visit the website at www.plotsearch.co.uk

Location
Scottish Highlands
Price
£75,000
Plot
145088



This elevated plot has outline planning permission for a new dwelling. It features panoramic views across the countryside and a cluster of mature Cypress trees, which are to be preserved. The popular village has shops, hotels, cafes, restaurants, golf course and a primary school. There are connections to the rest of The Highlands via a train station, bus links and a main A road.

Agent
MacPhee & Partners

Location
Lincolnshire
Price
£250,000
Plot number
132844

Situated in a popular village location at the foot of the Wolds, this 0.75 acre site has outline planning permission for a detached property. There is an attached 5.25 acre paddock to the rear. The area is in close proximity to Waltham village, with its excellent range of amenities, and the town centres of Cleethorpes and Grimsby are both only a short distance away.

Agent
Canters

Location
Cumbria
Price
£150,000
Plot number
143443

A conversion opportunity for the change of use of the existing barns into homes. The site is located to the east of Carlisle, in the village of Great Corby, which has a popular pub, craft brewery and a school. An adjoining village features a railway station accessible by a pedestrian footpath, a hotel and leisure club, restaurant and a local shop.

Agent
PFK

Location
Shropshire
Price
£175,000
Plot number
145410

Detailed planning permission has been granted for a four-bedroom, two storey house at the edge of the hamlet of Hopton Heath. This area of outstanding natural beauty has beautiful unspoilt countryside and views across the Clun Valley. Shrewsbury lies to the north and Hereford to the south. Birmingham and the West Midlands are commutable with many convenient rail links.

Agent
Balfours

Location
Berkshire
Price
£650,000
Plot number
144822

Located within a sought after village, this site has detailed planning permission for a five-bedroom detached residence with a garage and studio. The plot is sat towards the end of a quiet lane with views over open countryside. The area has an excellent range of amenities, including recreation grounds, a primary school and a doctor's surgery. There are also good transport links to London.

Agent
Black Cygnet Properties

Location
Powys, Wales
Price
£100,000
Plot number
145427

This elevated plot, which overlooks Llangammarch Wells village, has outline planning permission for a detached abode. It's located four miles from Britain's smallest town, Llanwrtyd Wells, which is home to the annual World Bog Snorkelling championships and the Man versus Horse marathon. The town of Builth Wells is a short drive away, with its range of schools and facilities.

Agent
James Dean Property

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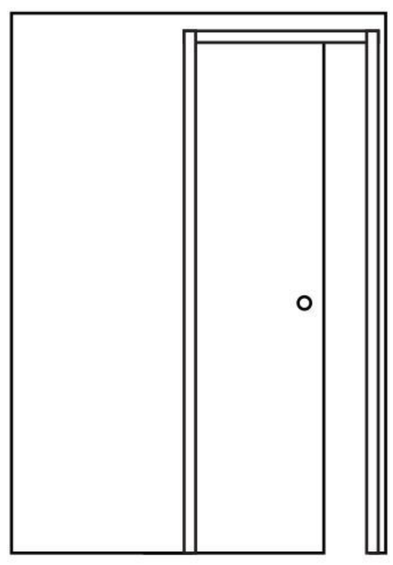

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PLOT WATCH: Mike Dade *investigates*

Could this plot provide the Brennans with their dream contemporary home? Mike Dade takes a closer look

WHO Graham & Claire Brennan

WHAT An edge-of-town site with detailed planning permission for a two-bedroom detached property

WHERE South coast

AN EXCITING OPPORTUNITY

Graham and Claire Brennan are seeking an early retirement, having sold their successful business. They fancy a self build, partly to keep themselves busy and partly to ensure they get the type of house that would suit their needs. Sea views and good access to a town centre are key requirements. A promising looking plot has popped up on the market in an edge of town location on the south coast. Could this be a good spot for them?

The compact coastal plot

The challenge

Graham and Claire are quite specific about the type of property they would like. Apart from their location needs, they have a very specific package of requirements, and not one that is easily found amongst the current housing stock. They'd ideally like a contemporary home with an open-plan living area that is suitable for entertaining, two bedrooms with ensuite bathrooms as well as enough space for a cinema room in which they can indulge their shared love of film.

It's also important that there is only a very small garden, as the couple intend to be off travelling a good deal, so they want something that's very low maintenance. Taking this all into consideration, a modest site in a location where modern architecture would fit in should offer a viable way forward.

The plot

This site is a narrow strip, about 8m deep by about 20m long, that slopes down from the northern end to the south. It runs alongside a quiet side street at the back of an adjacent property. Given the generally large homes on generous plots in the vicinity, this one is actually surprisingly compact.

At its southern end, there is an existing crossover from the street to some gates, but no obvious sign of what this access point might have served in the past. Adjoining the site to the north is what appears to be an old Victorian pumping station; a small building with bricked up windows. This does not seem to be in use, but it would certainly be worthwhile looking into what it is and whether it has any planning history.

Planning permission

Consent is in place for a new detached two-bedroom abode with a striking contemporary

design. The layout pushes the dwelling into the top end of the land, with a small lawn area in the middle and a covered parking space at the lower end, accessed from the existing crossover. It has two floors set into the hillside, a basement and a partial green roof. There are also extensive windows on the south elevation providing views of the sea, which lies about 400 metres away.

Internally, the layout is upside-down, with the living area on the top floor plus a balcony from which the full benefit of the vistas could be enjoyed. The two bedrooms and two bathrooms – one ensuite – are at ground level. Below that, the basement has a large games room and storage space.

On the face of it, it's a remarkably close fit to Graham and Claire's requirements. However, the approval only has another eight months to run, which could present a challenge if they want to change the design at all. It was also granted subject to no less than 19 conditions. While many of these are standard, requirements to undertake tests to investigate any possible contamination, and to ensure both energy and water consumption are minimised could all add additional costs to the price of construction.

It is unclear why the contamination constraint has been imposed, so it would be advisable for Graham and Claire to check this out this at an early stage, as its identification and removal can be expensive. Another condition also withdraws permitted development rights for extensions and garden outbuildings, but this one is more understandable given the constrained nature of the site in question.

Making amendments

The land not only has planning consent, but all the attached stipulations have also been approved, so the details of materials, landscaping and so-on are all pinned down. If Graham and Claire want to make changes they need to proceed cautiously. As the approval only has eight months until expiry, they would have to be very careful to make sure that doesn't happen. Upon examination of the online file, it's clear there were many objections from neighbours and the final application was decided by committee.

Renewal of permission isn't something that should be taken for granted. All things being equal, a request to renew an expired consent should be fulfilled. But in practice, things can get complicated. Policies can be altered, planning officers leave and the councillors on the committee change too.

A solution here would be for Graham and Claire to start work on the permitted project. That could be something relatively minor, like starting the excavation of a foundation or digging a trench for services. It would be prudent for them to notify the local authority that work has started. Once underway, the permission is considered to have been implemented and therefore stays alive for the foreseeable future. This would allow Graham and Claire as much time as they need to sort out any changes they might want to make and to seek consent for them.

First steps

Because the permitted design includes a basement and retaining walls, Graham and Claire should get some input from a surveyor, architect or builder on the likely construction cost, as it is going to be considerably higher than it would be for a standard project. They should also look into the price of the archaeological investigations and monitoring during the excavations, as these could also be significant. This will help them determine a sensible level of offer.

Discussion with the selling agent, and ideally one or two other local estate agents, should give them a good idea of the likely value of the completed property. This should also guide their thinking on what to offer.

A plot like this, in such a good location, isn't likely to hang about on the market for long. If Graham and Claire want to change the planning permission, they would have to take the risk that they could achieve approval for any alterations, rather than making a conditional offer. They should have in mind the contentious nature of the existing consent and appreciate that revisions could provoke objections too.

Very slight external changes, and most internal ones, are referred to as non-material minor amendments. These tend to be more of a rubber-stamping exercise compared with material alterations and don't carry anything like as much risk. So, if the couple only want to make some small tweaks to the permitted plans, they shouldn't be overly concerned about this being possible.

Conclusions

This looks to be an ideal site for Graham and Claire, provided they like the distinctive design. It gives them the location and the accommodation they're looking for, albeit within an unconventional layout. They'll need to do some investigative work to ensure they make a realistic offer for the land and don't get caught with any unforeseen costs before and during construction. If interested, they should move fast, as this is a unique and exciting opportunity that is likely to get snapped up rather quickly.

YOUR TURN

Would you like Mike Dade to cast his expert eye over a plot or project you're considering? Email us on **buildit@castlemedia.co.uk**. Mike can also be contacted through his consultancy at **www.speerdade.co.uk**

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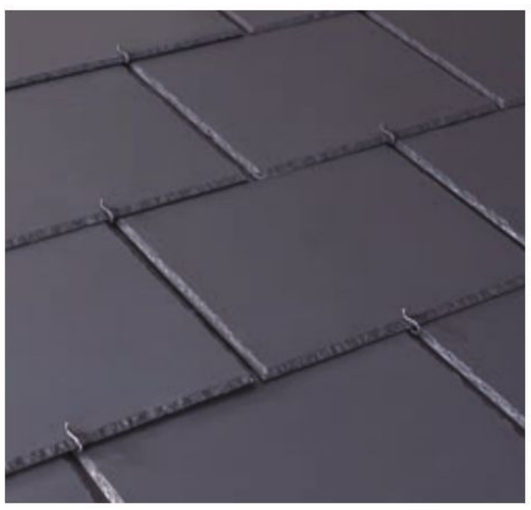

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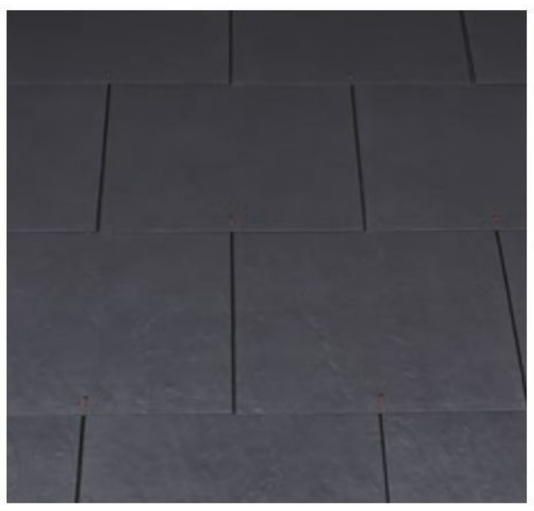
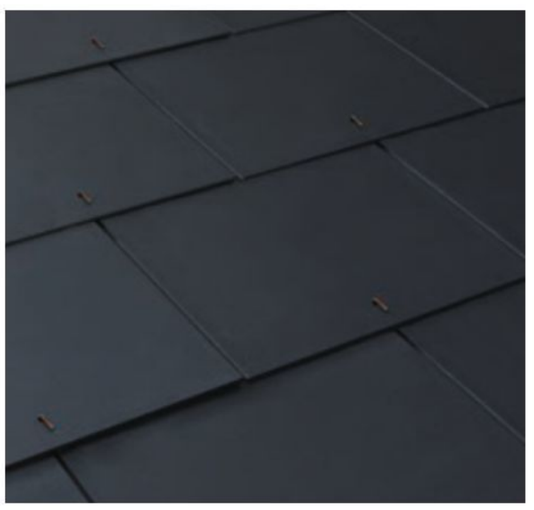
Smooth surface and dressed edges offer a traditional and pleasing look



GARSDALE

Detailed surface and square edge closely resembles natural slate



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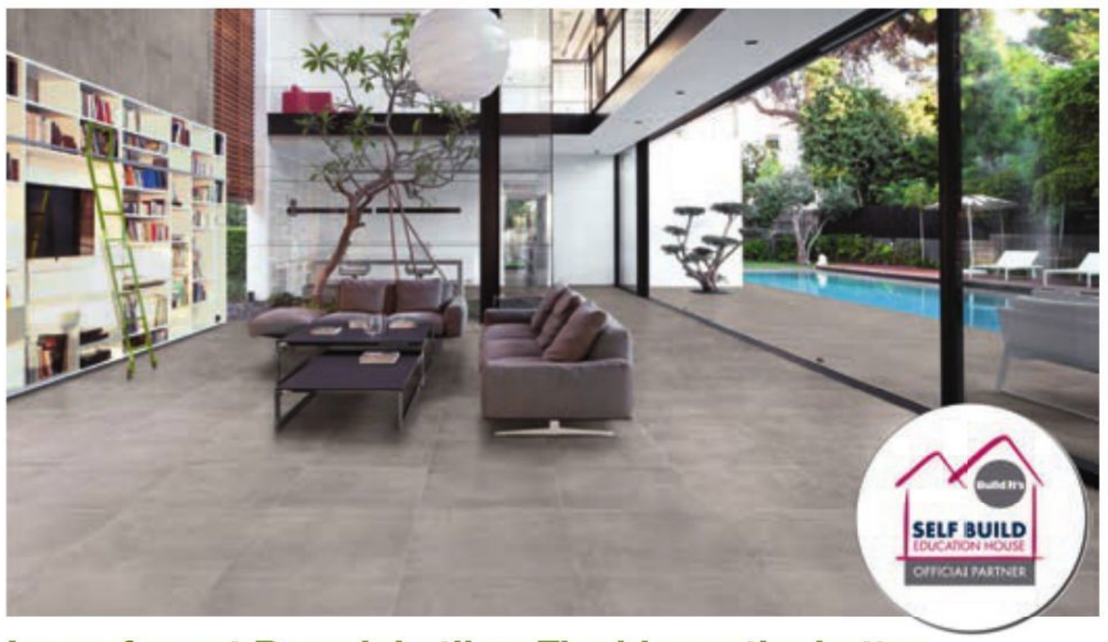

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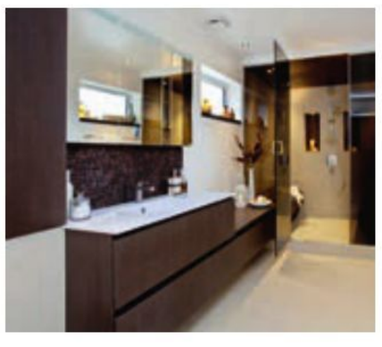

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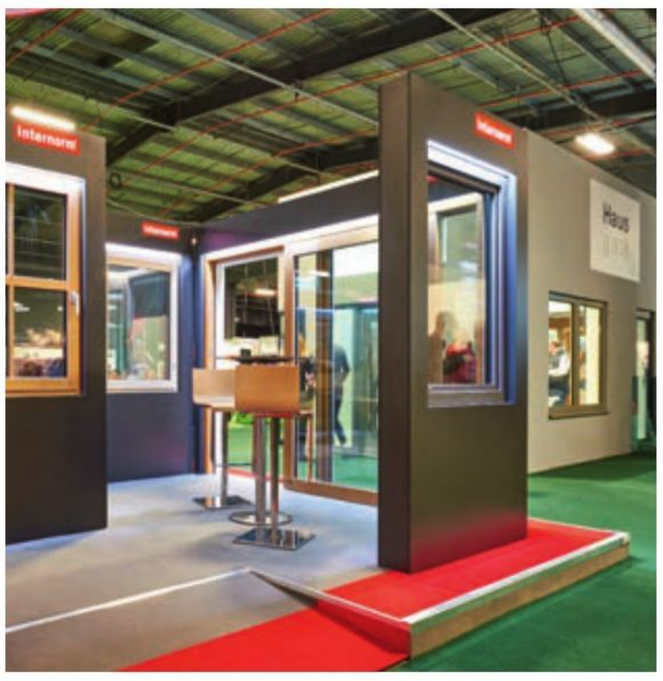

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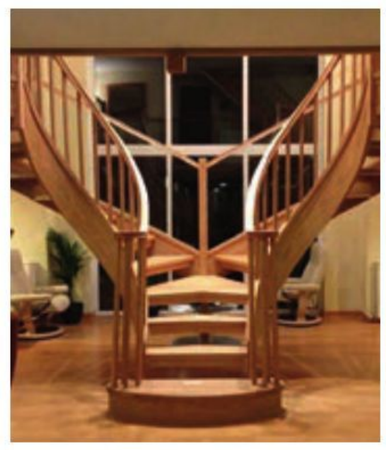

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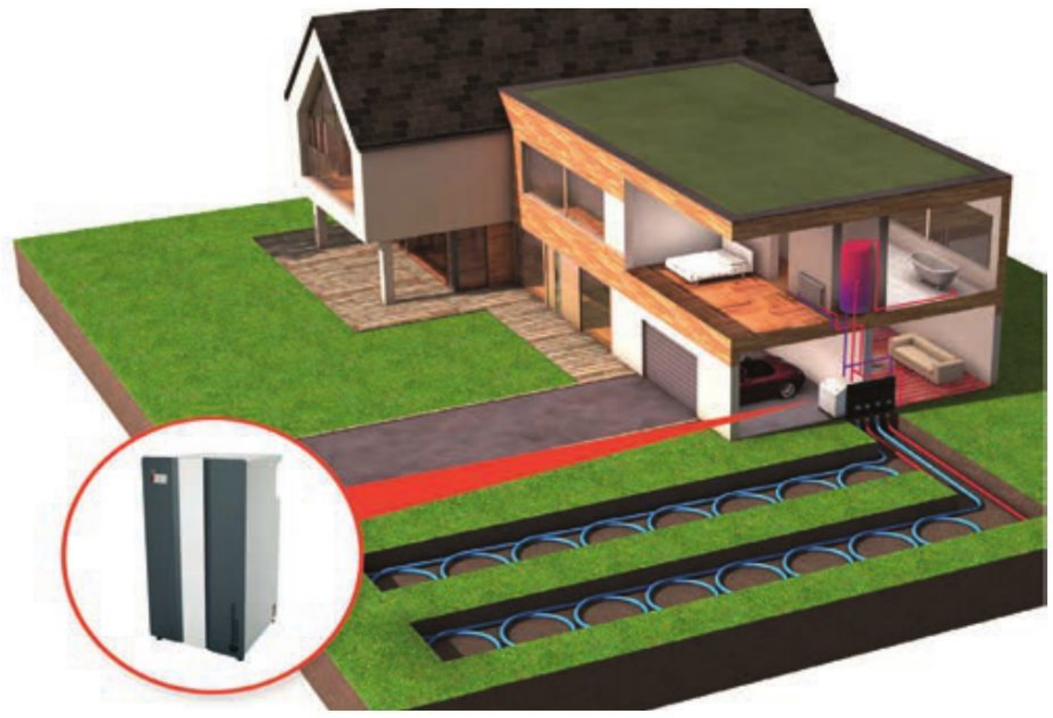

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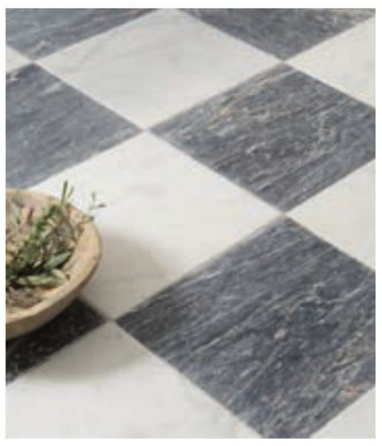

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Introducing a gorgeous new marble from Floors of Stone, the Parisian Chequer Marble. These stylish, elegant tiles give a feeling of grandeur and look amazing in a hallway, bathroom, conservatory or orangery. The tiles have a brushed surface and a tumbled edge to give the appearance of a reclaimed stone and stop them looking overly formal, making them more suitable for everyday use. The delicate light grey and pale pink veining throughout the stone give a wonderfully classic finish.

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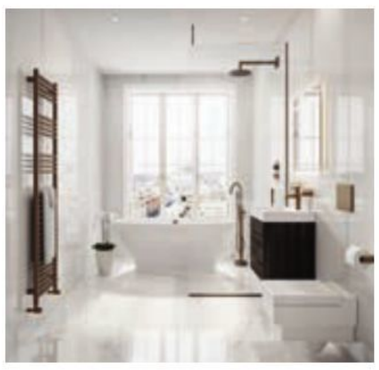

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Abacus Bathrooms has developed a unique portfolio of stunning brassware and accessories so that retailers and designers can offer a completely colour matched scheme in the bathroom. With colour taking a subtle centre stage in bathrooms today, Abacus has introduced four stylish contemporary finishes – chrome, bronze, nickel and black – which will be available across three popular brassware ranges as well as accessories such as towel rails, wetroom glass, valves and traps.

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They wanted the house to be true to Georgian architecture so the choice of brick was crucially important. Jaques Construction recommended using Imperial Bricks – the housebuilder had used the company on previous projects and knew it would be possible to select the exact shade and size required to give the new house an authentic Georgian appearance. Imperial's team set up several sample boards which were taken to site to compare with the stone and slate options already selected.

David Jaques says: "We needed to use the best bricks we could and we also wanted to offer great value. The sample boards were excellent. We chose the 68mm Reclamation Soft Red blend, a handmade brick with a characterful aged finish."

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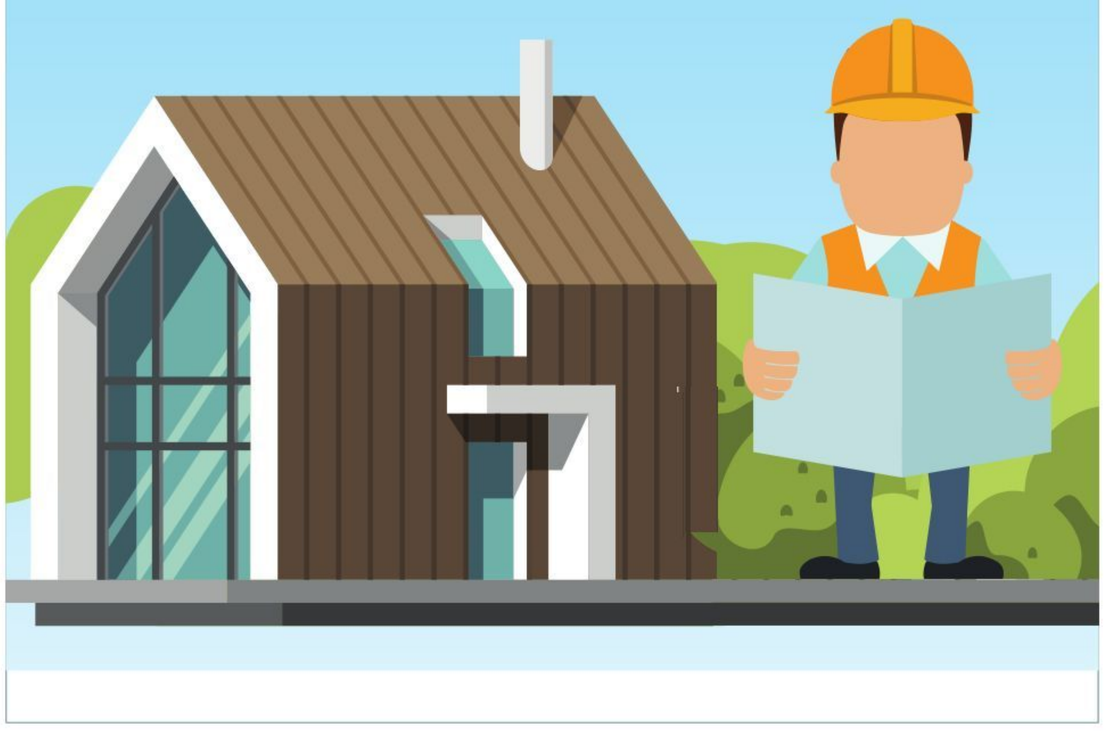

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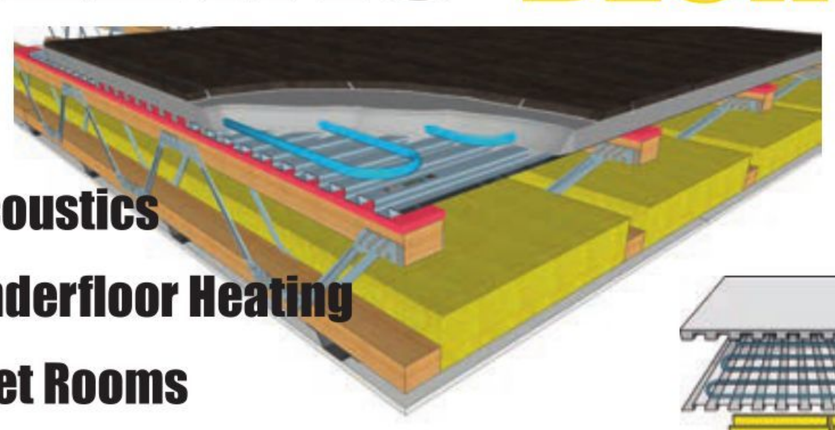

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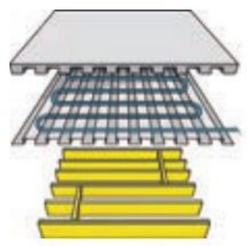

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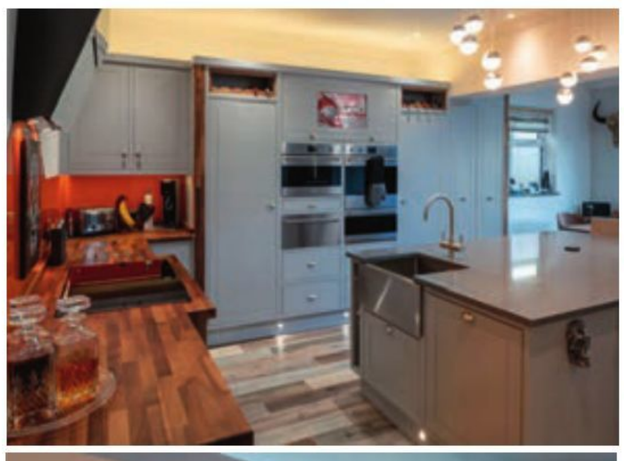

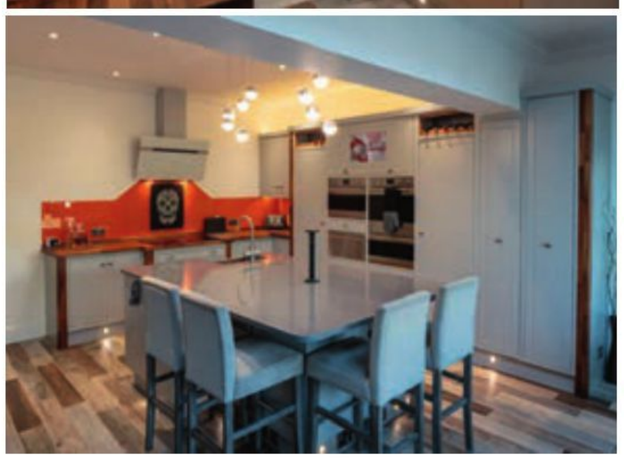

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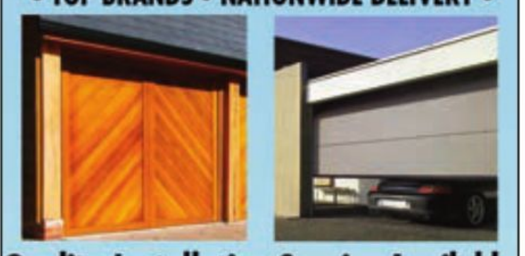

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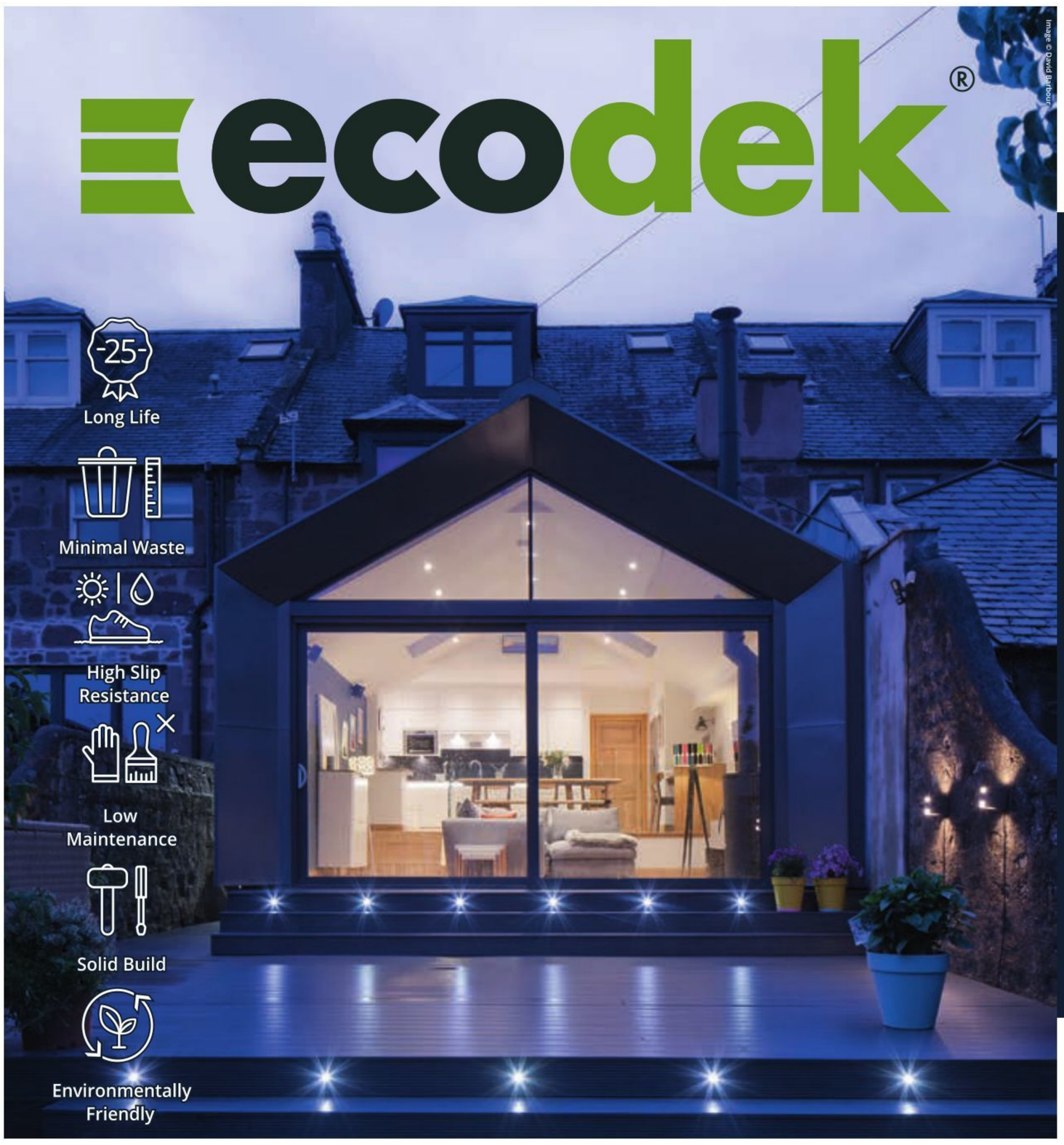

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next month...

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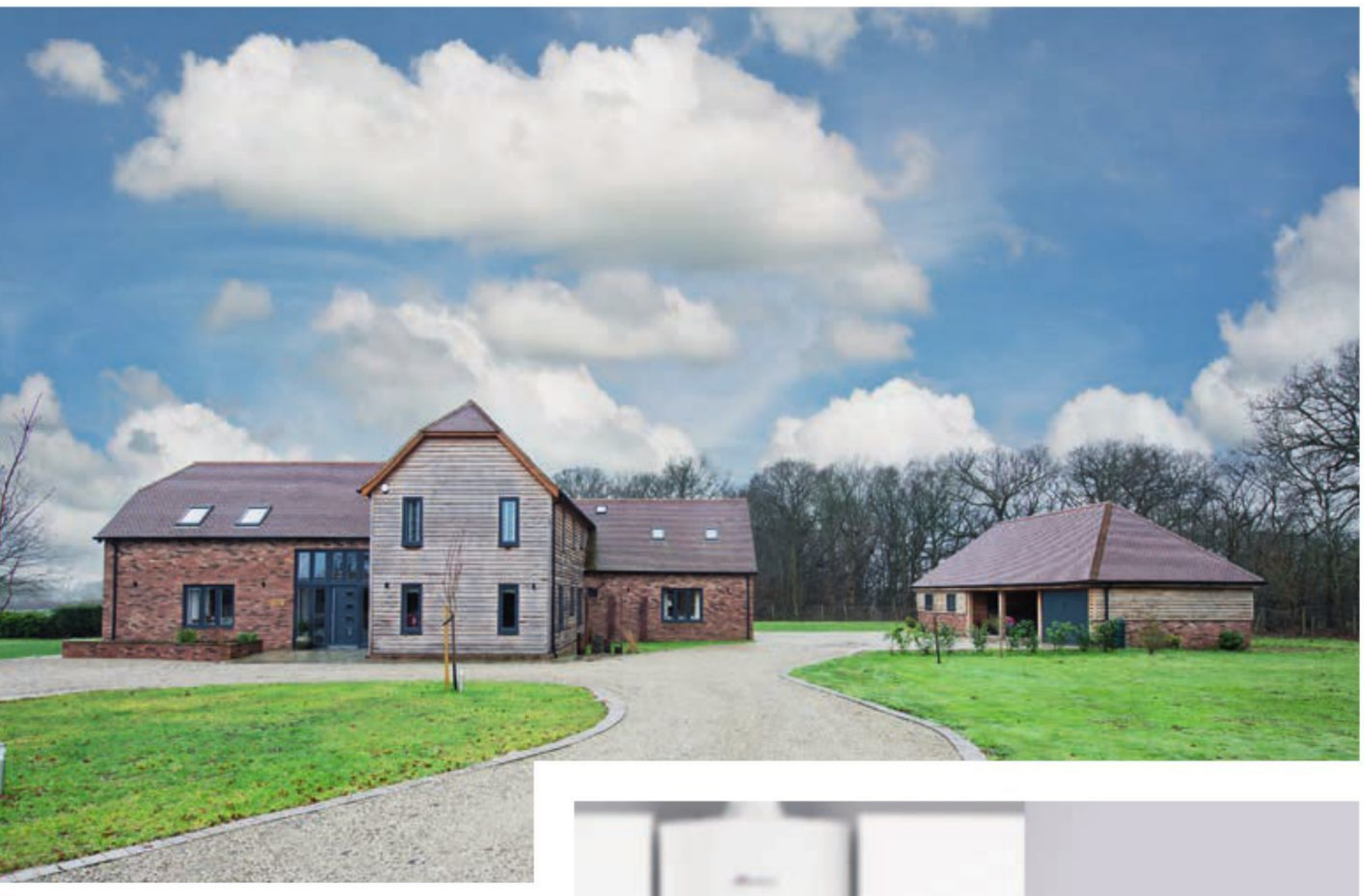

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Switchboard
020 3627 3240

BUSINESS DEVELOPMENT
Business development director
Sarah Wilcock 020 3627 3247

ADVERTISING SALES
Advertising director
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Emily Neil 020 3553 2378

SUBSCRIPTIONS
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PUBLISHING
Managing director Calum Taylor
Finance director Katherine Taylor
Marketing director Claire Drakeford
Accounts Sinead Charles 020 3627 3253

Published by Castle Media Ltd
Head office: Castle Media Ltd, Peasemore House, Newbury, Berkshire, RG20 7JH

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focus on:

Karen Curtin, managing director for the Graven Hill self build development, fills us in on the latest goings-on on site in Bicester

What is Graven Hill?

Graven Hill, situated in Bicester in Oxfordshire, is the UK's largest self build site, offering up to 1,900 custom homes. It's only 14 minutes from Oxford and is served by two train stations and the M40, M4 and M1.

The goal is to make it easier for people to self build and to create a community of like-minded people who want to achieve their dream bespoke home amid beautiful surroundings. We have plenty of green spaces and community facilities. In 2021 a primary school will be opening and there will also be a village pub, supermarket, community centre and a coffee shop. Some small office and retail units will be available within the local centre as well.

The land is a former Ministry of Defence site and they're releasing it to us over two phases. We're currently in phase one and we will get the rest of the land this summer, ready to build on from 2020 onwards. The idea is that by delivering the land in stages, it allows people to build their homes roughly at the same time while ensuring the relevant infrastructure is in at the right points during the process.

What are the benefits of building on Graven Hill?

Most people interested in creating a home from scratch need to find land, then negotiate their way through the planning and financing processes. We consider those barriers to self build, so at Graven Hill, we provide you with serviced plots – where all utilities are delivered to the site boundary – and fast-track planning consent. We'll then prepare Golden Brick foundations to your design and give you a warranty, taking away any risk in relation to issues in the ground.

There are a range of sites suitable for properties from three to six bedrooms, with house sizes from 80m^2 to all the way up to 465m^2. We have an overall design code and, depending on where your plot is located, there are varying levels of design freedom. There are lots of options within the materials palette and as long as your design drawings meet the requirements set out in your site's Plot Passport, you will receive planning consent within 28 days.

We're trying to make self build a real possibility for everyone; from first time buyers to those who are downsizing. We're also ensuring there's different types of finance available by working with BuildStore and some of the other mortgage brokers, too.

The project started a few years ago, so what's been going on at Graven Hill recently?

There's been lots happening over the last year! The site's busy being developed and by March we had 85 households living here. People have moved into some of the custom homes, the affordable units and also some of the Golden Brick houses, which have all been built within a short timeframe of between seven and 12 months. Currently, there are about 40 self builders constructing properties on site.

You might also be aware that the first 10 households to embark on their Graven Hill journey have been featured on a new series called Grand Designs: The Street on Channel 4, so that's been very exciting.

Can you tell us a little more about what it was like to be featured on Grand Designs: The Street?

The idea of the programme is to really showcase that self build is for everyone. Hopefully, it's shown that all demographics can construct their own tailor-made home, demonstrating the benefits of buying a serviced plot, but also the challenges to be aware of.

The land prices for each of the 10 properties featured were all roughly the same and each house was built under the same Plot Passport parameters. Of course, the budgets used to deliver the final homes were dependent on the owners' circumstances. What you see in the final episode is a street scene of 10 very different abodes constructed by self builders to suit their specific requirements.

Do homeowners have to commit to living at Graven Hill for a certain amount of time?

If you're self building, then yes. We didn't want people coming in, buying all the plots, putting something up and selling them straight away. Homeowners must commit to staying for a minimum of three years and, if they leave within this timeframe, then a percentage of the money from the sale should go back to Graven Hill – although we do have discretion to consider exceptional circumstances.

From the designs we're seeing, it's clear people have put a lot of blood, sweat and tears into their drawings and the project itself. Those who've undertaken a self build tend to stay in the property for far longer than those who buy a house on a traditional development.

How are you helping to encourage a community feel?

Because of the nature of the development, the community started to form quite early on. Several social media groups have been set up to encourage people to meet their neighbours, even if they're not living on site yet. Also, once people do start building, you begin to see that community coming together; people asking others if they can borrow a hammer or help hold up posts, for example.

There's also a number of social events we've been helping to facilitate where Golden Brick customers can get together. We've got our first community day on Saturday 18th May, where everybody who's bought a house or some land at Graven Hill can meet each other. There's also a lot of green space, with nature walks, parks and outdoor areas that should encourage people to spend time outside.

The Graven Hill team will be at Build It Live in Bicester on 8th-9th June (find out more on page 17). Call 01869 228030 or visit gravenhill.co.uk for more information.

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