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Welcome

The weather hasn't exactly turned – I'm not sure it ever got particularly warm in the first place – but we're starting to feel the autumn chill in the *Build It* office and there are noticeably more tea rounds going on. Not the most cost-effective way to stay warm, granted, but it helps!

If you're after a more long-term solution for your self-build or renovation project, then be sure to check out this month's free *Essential Home Heating Guide*. It's packed with information on everything from designing an efficient system and finding a good engineer through to focused advice on boilers and renewables, such as heat pumps and solar thermal panels. This invaluable resource is sure to set you on the right path to a comfortable house with low running costs. Before delving in, those of you building a new property should head over to [page 86](#) to find out how a fabric-first approach to design and construction will get your scheme off on the best possible footing.

Continuing the theme, this month's real-life projects include the Bakers' stunning Passivhaus-standard contemporary home ([page 28](#)). What makes this house truly special is its sympathetic design – tucked into a backland suburban site, the timber-clad upper storey and glass-and-steel ground floor give it an urban treehouse vibe that ensures the finished home feels at one with its surroundings. If you want the inside line on how to get planning permission for your own build on a garden or infill plot, don't miss Mike Dade's guide on [page 118](#) – and check out his detailed appraisal of the potential of one couple's site on [page 129](#).

If you're at the stage where you want to move on with specifying your project, we've got advice on a range of materials choices, from structural insulated panels ([page 101](#)) through to tilt-and-turn windows ([page 93](#)), front doors ([page 95](#)), bathrooms and ensembles ([page 110](#)) and more.

MEET THE TEAM



IFEOLUWA ADEJEJI is *Build It's* homes & design editor. With an avid interest in architecture, she has a keen eye for the details that can make or break a project. This month she brings you *The Essential Home Heating Guide*, plus a look at tilt-and-turn windows ([page 93](#)).

REBECCA FOSTER

is *Build It's* assistant editor. Each month, she tracks down the latest news, products and inspiring projects for self-builders and renovators ([page 11](#)). Check out her advice on how to select the right soft floor covering on [page 81](#).



TIM DOHERTY was the founding MD of the NSBRC and is the acting chief executive of NaCSBA. He advises on a range of issues, including finance and budgeting. On [page 110](#), he costs up the bathroom fit-out for the *Build It House*.

MIKE DADE

is a planning specialist and *Build It's* plot guru. He's the author of several must-read books on land and planning. This month he divulges his insider secrets on how to secure planning permission on a garden or infill plot ([page 118](#)).



JULIAN OWEN is *Build It's* design doctor and architecture expert. He is a self-build architect and the chairman of the Association of Self-Build Architects. Read his advice on how to design a basement extension that will add real space and value on [page 114](#).

OPINDER LIDDER

is a *Build It* award-winning architect and director of Lapd Architects. He specialises in self-build and renovation and is a regular consultant at the National Self-Build & Renovation Centre. He created the design for *The Build It House* and is part of our expert team at the *Build It Live* shows.



MIKE HARDWICK is a consultant and project management specialist. He was elected as the self-build representative on NaCSBA's executive committee in 2014. On [page 13](#) he gives his view on the recent High Court judgement that means Section 106 charges could once again apply to self-builders.

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How to build an eco home



118





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November 2015 issue



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READERS' HOMES

COVER STORY

The green house

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The Bakers' suburban property may be ultra-modern, but it nevertheless blends sensitively into its backland setting to deliver a truly individual and sustainable family home

A grand transformation

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Restoring this manor's period features was supposed to be a simple project; but once work got started, it quickly became clear that there were serious structural issues to address

An engaging personality

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Combining stone salvaged from the original hay shed with modern materials and building techniques has allowed the Gilmours to create a stunning barn-style home

Boxing clever

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Sticking to a square form helped this architect couple keep their build costs down – without compromising on style

Living in harmony

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Zoe and Stuart Webber may be newcomers to major projects, but with this sympathetic extension to their barn conversion, they've managed to get it right first time

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Self build project management

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Choose the right materials underfoot and you can enjoy a pleasing combination of plush luxury and practicality

COVER STORY

How to build an eco home

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Emily Brooks unlocks the secret to true sustainability and reveals the importance of taking a fabric first approach

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From energy efficiency to the latest design trends, here's what you need to consider when specifying a front door

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Self build guru Mike Hardwick explains why this modern construction method could suit your project

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Filter much-needed brightness into the darkest areas of your home with our guide to rooflights



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EXPERT HELP

The Build It House 110

Our virtual project is almost complete. This month, budgets expert Tim Doherty sets out the specification and costs for the bathrooms, flooring and wall tiling

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Basement extensions have proven controversial in recent years, but sometimes they can be the most effective route to adding space and value, says architect Julian Owen

COVER STORY

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Don't believe the media hype: there's still a place for garden self builds. Mike Dade examines how you can assess their potential and explores the merits of infill opportunities

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Our panel of self build specialists tackles your queries, including whether triple glazing can cause overheating

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The K1 project in Cambridge could be a model for collaborative self build

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JONAS BOREN PHOTOGRAPHY

A prefab dream

This four-bedroom self build was created by the design team at Baufritz to offer the occupant, a keen gardener, a home that serves as an attractive focal point within a beautifully-landscaped outdoor space. The timber frame was prefabricated in Germany before being transported to the building site; a picturesque village on the edge of the

South Downs National Park. While the dwelling features a contemporary exterior design, clever use of the traditional larch cladding helps it fit in with neighbouring properties. Inside, the open-plan living area is flooded with natural light thanks to the full-height windows, which were installed to take advantage of the garden views.

For more information call 01223 235632 or visit www.baufritz.co.uk

PROJECT OF THE MONTH

Scale of ply by NOJI Architects

Commissioned to transform the gloomy ground floor of this Victorian terraced house in Dublin, NOJI Architects designed an unusual contemporary living space for the owners. Previously, this level of the property had been dark and damp, with the main source of light coming from a poorly constructed conservatory to the rear.

Works involved the replacement of the original extension and the removal of partition walls to establish a naturally bright kitchen-diner. The result is a stunning open-plan zone that flows seamlessly into the garden, where a covered deck area provides a space for the owners to take advantage of their home's sunny south west orientation.

The striking roof structure of the newly-built extension comprises a series of interconnecting triangular boards. These are strategically positioned to encourage light to filter deep inside the dwelling throughout the day. The modular panels that form the diagrid structure are supported on a prefabricated plywood lattice that is held up by a glulam beam, resulting in a distinctive interior feature.



For more information log on to www.noji.ie

A boost for self build sector?

A report by Dr Michaela Benson from Goldsmiths University has called for more initiatives to encourage self build in the UK. A key recommendation is to increase the flexibility of mortgage packages, allowing people to maintain a steadier cashflow during their projects. Dr Benson suggests that greater support for collective development schemes could also make it easier for those who wish to commission an individual home to overcome construction challenges.

£85,000

is the suggested price for new homes on an innovative, eco-friendly custom build development in Dartmoor National Park. Reg Winsor, a parish councillor and experienced local self builder is recruiting participants to join him in constructing the semi-detached, two-bedroom houses on land supplied by farmers. Each custom homeowner would be expected to live in the property for at least three years. The project is still awaiting planning consent.

More rural starter homes required

George Osborne has called for councils to allocate more sites for housebuilding in small communities by rolling out the government's starter homes scheme to villages and giving them more planning autonomy. The chancellor wants to create opportunities for both newcomers and local people to settle in rural zones and has suggested that the houses could be purchased at a 20% discount by first-time buyers with links to the area.

What's on?

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STIRLING
spb.org.uk

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READING
architecture.com

RENEWABLE ENERGY SYSTEMS
6th - 8th NOV
£350
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courses.cat.org.uk

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7th NOV
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selfbuildacademy.co.uk

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RETROFIT ECO SOLUTIONS
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nsbrc.co.uk



Online register opens for city-centre plots

London has joined other councils across the UK by setting up a *Build Your Own Home* register. The new database will track interest and inform a programme that could see councils issue plots for smaller projects across the city. The move is a response to the *Self Build and Custom Housebuilding Act 2015*, which became law earlier this year and requires councils to set up lists for people to indicate their interest in buying land to create their own house. It is hoped that the London database, accessed via www.localselfbuildregister.co.uk, will provide an example for how local models can be run. London Mayor Boris Johnson has expressed hopes that enough people will have signed up by the end of the year for City Hall to map demand in detail.

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industry news

Affordable housing contributions

Back in the April issue of *Build It*, I wrote about the backlash from local planning authorities (LPAs) regarding a Department for Communities & Local Government (DCLG) directive, which asked councils to exempt developments of 10 houses or less from Section 106 tariffs. This policy guidance was just that – guidance – and had no basis in law. At the time, I raised concerns that we could expect legal challenges to the government's position on the grounds that it was adversely affecting affordable housing provision. I was hoping that when this happened, the law would rule in our favour and that Section 106 contributions would no longer apply to self and custom builders. Well, the first cases have been heard in the High Court, but the results aren't what I was hoping for.

The West Berkshire and Reading Borough councils were quick off the mark to challenge the directive, arguing that their right to raise income for affordable housing and critical infrastructure trumped the need for developers to avoid paying. They must have been delighted when Mr Justice Holgate quashed the new policy, labelling the consultation that informed the exemption "unfair and unlawful" and saying that it failed to take into account "obviously material" considerations. The government has therefore had to withdraw the relevant paragraphs from the National Planning Policy Framework document, so they can no longer be applied. This means that we can now expect Section 106 payments to appear once more as part of our planning applications.

The ruling came as a surprise to me and I understand that the government is appealing the decision. However, this case shows that if you want to change policy in this way, issuing guidance and hoping that everyone adheres to it is never going to have the same effect as introducing legislation.

Self builders have suffered here because they've been put in the same bracket as medium-sized developers. I'd argue that the vast majority of self builders aren't in it to make a profit – they just want a home that's right for them. Usually on tight budgets, these are people who have to fund projects through personal savings and finance. I believe the addition of a Section 106 levy on these individuals is unfair. However, a developer constructing 10 homes can more easily absorb these fees as part of their overall costs and recoup the money through the final selling price. Of course, these contributions have to come from somewhere – and if you ask the voting public, or indeed a judge, to prioritise developer margins over affordable housing provision, you know what the answer will be.

So, it's back to the drawing board for the DCLG and a case of one step forward, two steps back for self builders.



MIKE HARDWICK

is a self build consultant and project management specialist. He is the self build representative at NaCSBA and helps to deliver a three day self build course at the NSBRC in Swindon.

Follow Mike's blog online:
self-build.co.uk/blog/mike-hardwick

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product news

Great shopping ideas for your custom home project



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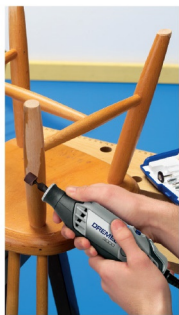
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2 Cape Cod round washbowl, from £288, duravit.co.uk



3 Version 850mm wall-hung washbasin, from £450, roperrhodes.co.uk

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interiors notebook

It's never too early to start looking for the finishing touches for your self build



Shopping list

- 1** A fresh lick of colourful paint is guaranteed to work wonders in brightening up your home's interiors this autumn. Shocking pink matt emulsion, from £18.47 for 2.5l, crownpaint.co.uk
- 2** Create a rustic atmosphere in the kitchen or bathroom with these terracotta glazed tiles, shown in a herringbone pattern. Boston brick north east, £47 per m², tilegiant.co.uk
- 3** Make a contemporary design statement and establish a warm ambience with this geometric china pendant. Hatton 3, grouping of three, £599, originalbtc.com
- 4** A kitchen storage unit tailored to your own unique specifications provides a hideaway for bulky appliances. Bespoke oak cabinet, whole kitchens from £35,000, martinmoore.com
- 5** Available in a range of upholstery fabrics, this classic piece of furniture will add a luxurious flourish to your living space. Penryn armchair, from £699, johnlewis.com

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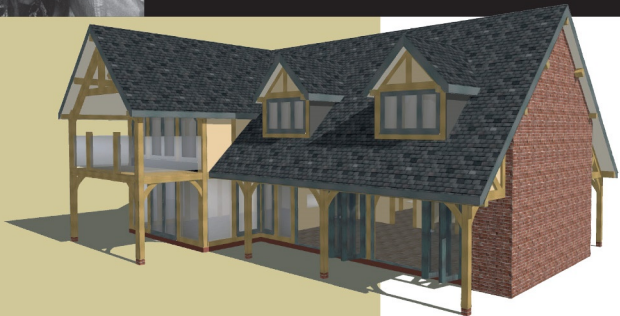
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PROJECT Oak frame self build
HOUSE SIZE 235m²
PLOT COST £150,000
PROJECT COST circa £400,000
WORK BEGAN November 2014



As their neighbours move into their new home, **Mark and Julia** take stock of how their own self build is progressing and start planning first fix plumbing and electrics



On August 23rd 2015 Chas and Wendy Watkin, our fellow self builders next door, moved into their new home; almost exactly 40 weeks since we broke ground last year. For first timers that really isn't bad going at all and their house looks amazing. I would be lying if I said I wasn't a wee bit envious as my own completion date seems so far away. Mind you, this is partly my own doing,

as Julia does remind me that I stubbornly want to complete as much of the work as possible myself.

Making progress

Work on site has been going well, as I managed in just two weeks to pull all the temporary OSB flooring up and lay the new tongue and groove chipboard decking. Almost 80% of my first floor stud walls are in place, too. This is the type of work that I



enjoy the most and that comes through in the speed it progresses.

It took a total of five very tough weeks to complete at least the first fix of insulation and air tightness membrane. It was a horrible job and



I hated every minute of it, but it's done now and the feeling of exhilaration I got when I placed that last section of 120mm thick insulation board into the ceiling was immense.

Most nights now I leave work after 7.30pm, which is a bit of a limitation. But when I do get on site I have found the house fairly warm. I fear the high levels of insulation and the air tightness of the building are now working against me – as it's like walking into a sauna.

It's actually starting to feel like a home now, with the rooms shaping

up in size and form. Julia and I can spend hours at a time in one zone discussing door positions and the general layout – this aspect in itself is quite enjoyable.

We know that you do need to be mindful of how light comes into the rooms and where bits of furniture will be sited, along with also thinking about the location of electrical sockets and the flow of a room. I must confess that the original plans that were drawn up have been modified in places. We've made other small changes and adaptations along the way, with more to come.

Both Julia and I have, on a few occasions, broken the rule book in terms of traditional interior design, too. We simply took a very personal view about how we wanted things to be laid out and ignored the usual logic. There are so many approaches towards room layout etc, and plenty of people who would say "you need to think of when you sell it on; would other people like these ideas?" But we don't intend to put it on the market and are building this property purely for ourselves.

Moving forward

On the neighbourly front all seems to be pretty quiet, thank goodness, as I could do without that added stress! I confess we did have our own little cheer and raised a cup of tea when we saw the removal van arriving to take our problem neighbour away. Let's just hope that the new guys are friendlier – watch this space.

For the next phase of work, I will be employing an electrician and plumber to get the first fix underway. So in the evenings I'm frantically drawing and completing preparatory elements to be ready for them.

Looking ahead

Although the finish line for me seems very far away, I guess we

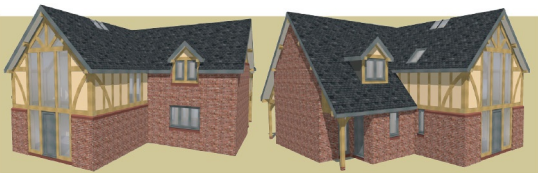


must be getting somewhere close as my dear Julia is now living up to her nickname of chequebook Jones! She is an amazing deal spotter and has done really well in buying some of the kitchen appliances already. I suppose it's a nice position to be in where you have a bit of time to scour the market, look for hot deals and pounce when you see them come around. I guess if storage is not a problem the tip of the day for a self builder is to know what you want, recognise when you see a good price and strike when the iron is hot.

Mind you, this doesn't apply to the £5,000 settee Julia just bought, that sneaked in through the back door. I didn't see that one on our budget!

NEXT MONTH

MARK AND JULIA HAVE HIRED THE ELECTRICIANS AND PLUMBERS WHO WILL TAKE THEIR BUILDING PROJECT TO THE NEXT PHASE





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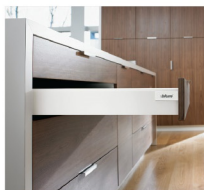
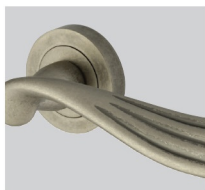
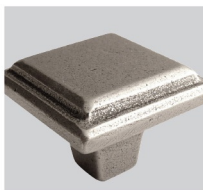
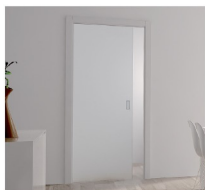


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star letter

Perplexed by pre-app planning

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

After a long search, I recently came across a plot of land that might be ideal for my self build project. Before I set my heart on the site and start work on my planning application, is there any way to find out if someone else has already submitted a pre-app advice request on this piece of land?

Keiran, via Twitter @BuildItMagazine

Editor's reply: While information on pre-application advice is public record, it's given informally. So if you're after specific details, calling your local council to find out directly may be the best way forward. Some authorities include pre-apps in their online planning registers, so you may be able to find out this way. In the worst case, you could go for a freedom of information act request if the council is uncooperative.



Section 106 woes

Has anyone else been hit by the high court ruling that overturned Section 106 exemptions for small developers and self builders? Our planning application should have been determined at the end of July, but thanks to delays with the local authority we now face a hefty contribution that could mean our project is now unaffordable. I read that the government would try to appeal against the ruling, but when will we know the outcome?

Juliet, via www.self-build.co.uk

Editor's reply: Section 106 fees can have a devastating effect on the viability of some projects, so the High Court's decision will be particularly frustrating for many self builders. The government is thought to be investigating both a potential appeal and alternative exemption routes for one-off schemes. Keep up to date with all the latest news via our website at www.self-build.co.uk/section106

HAVE YOUR SAY

Build It magazine wants to hear from you. Whether you have advice, a self build story or simply want to make us laugh, write to us with your name and address, at **Letters, Build It, Castle Media, 7 King Street Cloisters, Clifton Walk off King Street, Hammersmith, London, W6 0GY** or you can email us on buildit@castlemedia.co.uk. We reserve the right to edit and publish all correspondence

Radiators or underfloor heating?

I read last month's feature on how to heat your home with particular interest, as my husband and I had been debating whether or not to have underfloor heating (UFH) installed throughout our house. Your article mentioned that we could create a scheme that uses both UFH and radiators. Where can we find more information on how to put this kind of setup together?

Michelle Barnett, via email

Editor's reply: The key is to use your UFH in zones that tend to require longer cycles of warmth – such as the living room, dining area and kitchen. You can then switch to radiators in places like bedrooms and bathrooms, where you're likely to need shorter bursts of heat. For more ideas, check out this month's free guide on how to heat your home.



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28 THE GREEN HOUSE

Nestled into a back garden plot and packed with eco features, Nick & Caroline Baker's unashamedly contemporary home embodies the principles of sustainable design

39 A GRAND TRANSFORMATION

When the Whittakers took on a rundown Georgian manor, little did they realise the extent to which they would need to invest in its fabric before they even got started on restoring its period features

49 AN ENGAGING PERSONALITY

Faced with a choice between converting an old hay shed and starting from scratch, the Gilmours decided a distinctive self build that recycled the original cladding would give them the best of both worlds

57 BOXING CLEVER

Adopting a simple, budget-friendly footprint hasn't prevented this imaginative architect couple from creating a truly individual new home

67 LIVING IN HARMONY

Novice renovators Zoe and Stuart Webber have proven that it is possible to get it right first time with their sympathetic contemporary barn conversion and extension

MORE ONLINE >>

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The green



When architect **Nick Baker** chanced upon a rare idyllic plot in urban west London, he and his wife Caroline relished the opportunity to build an eco-friendly dream home inspired by its suburban setting

WORDS **NATALIE FLAUM** PHOTOS **ALISON HAMMOND**

Large garden plots in the middle of leafy west London suburbs are like gold dust. So when Nick and Caroline Baker first saw a secluded site surrounded by oak trees at the rear of residential gardens, they couldn't quite believe their eyes. "Whilst scouring several agents' books for our next house, Caroline discovered the plot on a local office's website," says Nick. "We'd been interested in the idea of building our own home for a long time. I remember walking down the gated mud track path thinking this could really be a dream come true."

The site was created when the owner of an Edwardian house along the road purchased the ground floor flat next door. In doing so he acquired all of the remaining garden space, which he split up to establish private areas for each apartment. This exercise left a square 30m x 30m plot with a route through to the main street via a path between the two properties at the back of the site.

"The owner had intended to build a house on the plot, so when he sold the site it came with planning permission, which of course added to its value," says Nick. "When the coalition government came in back in 2010, they quickly changed the planning policies to make it more difficult to develop back gardens. Luckily, when we approached the project we were just at the end of the era that had

The combination of vertical timber cladding and extensive glazing helps the house to merge organically with the garden plot



“The only access to site was down a narrow mud track path between two houses, so everything had to be manoeuvred by hand”



gone before. Today I suspect it would have been much more difficult to secure permission for what we've achieved here.”

Nick and Caroline sold both their current properties to purchase the land and began the long and arduous process of submitting their planning application. “We applied for a self build mortgage and cobbled together all of our savings,” says Nick. “This project was all about creating a lifetime home, so I produced a set of plans and sat down with all the neighbouring owners to show them what our intentions were and get them on board.” While that side of the process went smoothly, dealing with the local council proved rather more strenuous. “They were incredibly tardy. We made three submissions just for pre-planning applications and each one took three months to receive an answer,” says Nick. “Nevertheless, we eventually got to the point where we could submit detailed designs. We did a lot of 3D modeling of the house to identify the direction of the sunlight and where the heat gain was going to be.”

The right setting

Nick and Caroline's design approach was for the project to maintain a modern, urban feel in tune with the natural environment. “We came up with a treehouse concept and decided to site the building close to the middle of the garden, which would enable us to maximise natural daylight,” says Nick.

The location has allowed the couple to be creative with the architecture, as there was no need to conform to the street scene. “We refer to it as the back-to-front, inside-out

Fixed-angle brise soleils provide privacy and shading without spoiling the first floor views





THE BAKER FILE

NAMES Nick & Caroline Baker, plus their four-year-old daughter, Isla

OCCUPATIONS Director & marketing director

LOCATION West London

TYPE OF PROJECT Self build

STYLE Contemporary

CONSTRUCTION METHOD

Timber frame and steel

PLOT SIZE 900m²

LAND COST £400,000

BOUGHT 2009

HOUSE SIZE 250m²

PROJECT COST £453,000

PROJECT COST PER M² £1,812

TOTAL COST £853,000

BUILDING WORK COMMENCED

February 2011

BUILDING WORK TOOK

40 weeks



house," says Nick. "Normally, double-height glazed areas are only allowable at the rear elevation, but we've been able to use this feature at the entrance hall, which helps bring more light into the middle of the house. I also came up with a shading device by cantilevering the first floor out just under a metre past the glazing to provide a canopy to the lower storey. This means we can enjoy the pleasure of the sunlight and view without risking overheating in summer."

The house is formed of two angled, interconnecting wings, which come together at the double-height entrance hallway. On one side is the kitchen-diner, utility, ground floor wetroom and study; while the other plays host to the spacious living room, with master suite – including ensuite and dressing room – above. Also upstairs is daughter Isla's bedroom, a family bathroom and a guest suite. "I always try to create the most efficient floorplan possible," says Nick.



The minimalist decor in the open-plan zone is accented by pops of colour from splashbacks, worktops and the Series 7 dining chairs, designed by Arne Jacobsen for Fritz Hansen and purchased from Ambiente Direct





WE LEARNED...

INVESTIGATE THE PLOT or

property that you intend to buy properly. Before we purchased this piece of land, which slopes downhill from the road, we insisted on inspecting the site thoroughly. As part of this we took approximate dimensions to calculate the drainage angle from the house. This allowed us to check whether we would be able to connect into the existing drainage system or if we would have to install an expensive septic tank.

ASK YOUR BUILDER if they have an experienced joiner as part of their team who will be able to help with the design of your new kitchen cabinets and similar interior elements. We found ours to be particularly helpful in terms of coming up with clever ways to save money and making recommendations for appliance and workshop suppliers.

DON'T BITE OFF more than you can chew. If there were to be a next time for us, we probably wouldn't choose to build a house, run a business and have a child all at the same time – although you can't change fate and we're delighted with what we've achieved.

"For example, I stacked the upstairs bathroom on top of the ground floor cloakroom, while the shower zone sits above the utility. This helps keep the pipework to a minimum."

Starting on site

Building work began on Valentine's Day 2011. "We had a dedicated team who were used to dealing with high-end specifications and were able to deliver the level of quality and workmanship we were aiming for," says Nick. "The only access to the site was down a narrow mud track path between two houses, so everything had to be hand-manoeuvred on a little dump truck."

The contractor built a site hut at the side of the plot and put the concrete footings down. This flat surface quickly took on the dual form of a workshop, where four carpenters spent three months creating the shell of the house. It's also where the roof trusses, each one measuring 8m wide by 3m high, were built – chalked out on the level concrete, crafted by hand then stacked until the spider crane was brought in to lift all the trusses into place.

"We had to be self sufficient in our manner of doing things, as everything had to be assembled on site. This was one of the reasons we made the design as simple as possible to build," says Nick. "We had to plan the dimensions of every last sheet of plywood and think about how it could travel down the path to site. We became very familiar with the sizes of building materials at Travis Perkins."

The neighbour from whom the couple bought the land moved away just as work was about to begin and offered the couple his flat for rental for the duration of the build. This meant Nick was able to visit the site before work every morning to keep an eye on progress.

Root problem

To combat the site's slope, which runs down 3m from front to back, Nick decided to step the land with a series of gradual terraces to aid

with drainage. "Even before we purchased the plot, I opened up the existing manhole and took dimensions to check whether we could connect to the existing drainage system," says Nick. "Fortunately, it was possible – despite the proximity of trees, the public footpath and neighbouring gardens that could have blocked excavation."

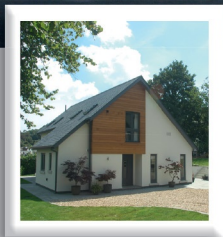
Great care had to be taken during construction to conserve two 150-year-old oak trees sited 8m away from the new house. "They were subject to a tree preservation order with root protection zones, so we had to apply for special permissions for the work," says Nick. "As we were building on clay soil, we designed a cavity beneath the property that would safeguard the roots and prevent heave." Removing or damaging trees in clay soil can lead to the water they've absorbed releasing back into the ground – causing it to swell and potentially damage buildings. "We chose a sensitive approach to prevention that involved digging down to create a level surface, blinding this with sand (to dull any sharp edges) and putting down a layer of clayboard," says Nick. "This is basically a thick corrugated cardboard that has plenty of compressive strength. We cast the concrete slab above this, drilled a hole in it and left the hosepipe running overnight. The cardboard turned to mush and our floor void was formed."

Eco features

Nick was keen to establish a sustainable development that would absorb and conserve energy from the sun and contain it within the building. "I wanted the house's green elements to be part of the overall design as opposed to additions," he says. "Following Passivhaus principles for solar design, energy from the sun enters the house through the glazing and gets absorbed into thick concrete slabs, which store the warmth and release it back into the building overnight. This reduces the need to generate heat."

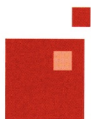
All that glazing helps elsewhere, too. "Daylight is a precious thing as the more you have, the less you need to switch lights on, which is

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another ecological aspect to the house," says Nick. "We also have solar thermal panels that provide 70% of our hot water, so for up to nine months of the year every time we take a bath, shower or use the hot water tap, it's free – which is a significant saving."

A sedum grass roof has been included on the flat area on the smaller of the two wings. "As an architect I felt in principle that, as we were taking a section of the garden away, we should replace it on the top," reflects Nick. "The other part of the roof is pitched and covered with 60% recycled slate."

Realising a dream

Nick still pinches himself when he thinks about what he and Caroline have achieved. "When I turned 42 it was a life-defining year, during which we built our ideal home and I became a dad," says Nick. "I remember carrying Isla in my arms on site and it's wonderful watching her grow up here, surrounded by nature and sunlight. I consider myself incredibly lucky to have found a plot like this in London and to have been able to design and build a house myself to a budget we could afford."

The finished house is surrounded by greenery and bounded by a public footpath at the back. "The journey from car to doorstep is only 30m, but it's like we cleanse ourselves of the city as we wander into our own wonderful oasis," says Nick. "People often comment on how the house's pared down style reflects its respect for the natural

environment. It also has a continental feel that might have derived from my childhood spent in my mother's hometown of Salzburg and in Vienna, where my brother still lives."

One of the couple's favourite features is the guest suite. "It makes this a home where we're able to spend more time with the rest of our family," says Nick. "The house has exceeded all our expectations and we're delighted to be living our dream here."



Clever positioning of windows and shading means every room in the house benefits from stunning views of the garden



closer look

Achieving low running costs



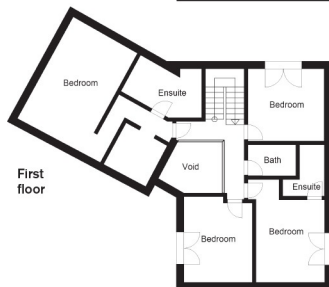
The Bakers' home has been built according to Passivhaus principles, a set of standards that are widely regarded as the world's leading fabric-first approach to creating low-energy buildings. Heat loss from inside the building is minimal thanks to features such as the 300mm deep mineral wool insulation and triple glazed windows on the upper storey. All of these elements have enabled the couple to specify a series of renewable energy products that work to their full efficiency, including solar thermal panels and a whole-house mechanical ventilation and heat recovery system that help to reduce energy bills. In addition, Nick invested in a 3.6kW solar photovoltaic array to generate electricity, which is eligible for government payments under the Feed-In Tariff and currently generates an income of around £1,000 per year.



Solar PV array



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TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Preliminaries	£132	7%	£33,000
Foundations	£160	9%	£40,000
External walls & windows	£484	27%	£121,000
Roof structure & covering	£164	9%	£41,000
Internal walls	£248	13%	£62,000
Floor, wall & ceiling finishes	£148	8%	£37,000
Joinery & fittings	£100	5%	£25,000
Plumbing & heating	£156	9%	£39,000
Electrics	£104	6%	£26,000
Decorating	£32	2%	£8,000
External works	£84	4%	£21,000
Grand total			£453,000

Useful contacts



ARCHITECT **Nick Baker Architects** 020 7490 0644 www.nickbakerarchitects.com
STRUCTURAL ENGINEER **TZG Partnership** 020 8681 2137 www.tzgpartnership.com
BUILDING CONTRACTOR **Ferox Construction** 07841 864545 www.feroxconstruction.com
JOINERY & KITCHEN DESIGN **Sketch Joinery** 01293 862977 www.sketchjoinery.com
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Mike Lincoln,
Henley-On-Thames

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A grand TRANSFORMATION

The **Whittakers** faced a huge challenge in restoring the period features of this striking heritage home

WORDS **RICHARD WEBBER** PHOTOS **COLIN POOLE**

Experienced renovators Geraldine and John Whittaker had already sensitively updated a Georgian property on Guernsey and a listed cottage in Wiltshire before taking on this project. Yet nothing could have prepared them for what lay ahead when they bought the 18th century townhouse on Alderney – the most northerly of the Channel Islands.

The resplendent mansion, regarded as the island's premier residence and former home of the last hereditary governors, wasn't supposed to be a major restoration project. "My idea was simply to replace the kitchen and bathrooms and to reinstate some of the Georgian features," says Geraldine. "But we soon discovered that rather than just being cosmetic changes, significant work was required to the roof, ceilings and floors. When it was stripped back, all that was left were the four walls – we didn't even keep the roof"

A fresh start

Geraldine's involvement in the renovation was put in jeopardy when she suffered a serious injury after slipping on ice and breaking her neck in Switzerland. For a time, she questioned whether to continue with the project. "I lost interest in it because I was completely focused on learning to walk again," she says.

Thankfully, she has now made a full recovery and is relieved that at the time she had someone who was capable of stepping in to run the scheme: architect Darren Keung. "He had drawn up the plans for and was initially going to be advising on small details, but after we met I entrusted him with everything," says Geraldine.

The couple have lived around the world and were in Switzerland for 14 years before relocating to the peaceful setting of Alderney. They moved to the tiny island – measuring just four and a half



THE WHITTAKER FILE

NAMES Geraldine & John Whittaker
OCCUPATIONS Retired bankers
LOCATION Alderney, Channel Islands
TYPE OF PROJECT Renovation
STYLE Georgian
PLOT SIZE 0.5 acres
HOUSE COST £1.9 million
BOUGHT 2011
HOUSE SIZE 640m²
PROJECT COST £2.57 million
PROJECT COST PER M² £4,016
TOTAL COST £4.4 million
BUILDING WORK COMMENCED
 February 2012
BUILDING WORK TOOK
 76 weeks

square miles in size – to be closer to their children, Henry and Allegra, who live on the mainland in England. “We also really wanted to be based somewhere we could feel part of a real community and Alderney has that,” says John.

The Whittakers wanted to respect the property’s Georgian roots (the house was built in 1779), but not slavishly copy the style. “During the 40 years that John and I have been married, we’ve travelled a lot and acquired various bits and pieces so I wasn’t going to buy a houseful of new furniture,” says Geraldine. “But I love the detail and dimensions of Georgian architecture.





The modern kitchen's clean lines blend pleasingly with the refined Georgian setting

Darren and I took our time to pore over lots of style reference books and I was pleased that he immediately appreciated what I was hoping to achieve."

The house has listed status, which on Alderney means any external changes to the building require consent from the local authority. The existing sash windows proved to be the main sticking points in the couple's application. Geraldine wanted to replace them but the planners decided this would markedly alter the property's appearance. Other than that, they were happy with the Whittakers' plans to restore the property to its former glory.

Drying out

Unfortunately, achieving their goal cost the couple more than they had anticipated in terms of both time and money. "My accident meant my mind was elsewhere," says Geraldine. "If I'd been concentrating on what was happening, I'd have been worried – because as a former banker it didn't make sense to be spending so much to put the house right. It definitely wasn't part of the plan."

Alderney's humidity levels, which can reach 100%, and the proximity of the property to the sea meant salt particles from the English Channel and the moisture in the air had been infiltrating the house's walls. As it was over 200 years old, the structure also lacked any form of protective barrier. To rectify the problem, a damp-proof membrane was inserted, which was lapped up to meet a layer of internal tanking at the walls.

Moisture ingress had also affected the timber floors, which bounced when you walked on them. Darren and his team

discovered that the joists had been inserted directly into the walls without a protective membrane, which had led to rot. These were replaced and solid wood flooring laid in the majority of rooms.

Externally the clay pantiles deteriorated to the point they were letting in water, so they had to be changed, too. But the couple did manage to retain a number of original features, such as the Alderney pink granite in the billiard room, which was discovered after the builders removed the lath and plaster. This was repointed before a silicone coating was added to repel moisture. To help manage condensation throughout the house, a Nuair mechanical ventilation and heat recovery (MVHR) system was also installed.

Comfortable living

The Whittakers had initially hoped to have underfloor heating (UFH) laid throughout the house. However, this works best in well-insulated, airtight homes – and they weren't in a position to achieve top results. Retaining the beautiful original sash windows – as per the planning conditions – meant there'd be large areas of inefficient glazing. The couple therefore felt that trying to reach the desired temperature levels for optimum comfort within the house would have exceeded a UFH system's capabilities. Instead, Paladin Bartholomew cast-iron radiators were installed.

"We went for thermostatic radiator valves instead of thermostats in every room because the latter would detract from the period look we wanted to achieve," says Geraldine, who was very specific about the performance she wanted. As it's such a large property, powerful heat sources were required to cope with the demand, so

WE LEARNED...

MAKE SURE you employ a strong project manager. Darren, who's a tough taskmaster, kept the pressure on to get the job finished. He's also a good communicator and, fortunately, is on our wavelength. John and I needed someone like him – he did a fantastic job.

THINK CAREFULLY about how you're going to use each space. I love the dining room because it's a manageable size, not some huge cavern. But we can still have 12 people over for dinner without feeling squashed in. However, our decision about the position of the study wasn't so good. John and I spend a lot of time there and, sadly, it's the darkest room.

DON'T UNDERESTIMATE the time involved in a renovation project. We ended up having to move in before the property was finished. Something I would never do again. Although the builders were great and tried to be invisible, we're just not used to sharing our house.



two Grant Vortex condensing boilers and a water booster have been fitted.

Interior finishes

Among the greatest challenges Darren faced was calculating lead times for the more unusual items he sourced for the couple, such as the Swarovski crystal chandelier in the dining room. This was shipped from America and until it arrived the builders were unable to finish the ceiling. Matters weren't helped by the fact that some crystals were broken in transit and had to be replaced.

Marble has been used in every bathroom and for flooring in some of the hallways. "I love the feel of it," says Geraldine. "Darren, my sister and my daughter actually went to Verona to source it with John Litchfield, managing director at Channel Islands Ceramics." For the hallway, the couple chose a marble with pronounced veining so it doesn't show marks so easily. In the master bathroom Geraldine opted for a beautiful green version. She originally intended to use all around the zone, but Darren thought it would be too overpowering. To tone down the

look, he recommended employing the tiles in a simpler fashion to make a feature wall, which has worked to spectacular effect.

A new format

One of the property's most striking features is the staircase, which had to be redesigned to increase the amount of light entering the



Exposing the original Alderney pink granite has lent the games room a cosy, individual character





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house. A ground floor boot room and WC were tucked beneath the stairs, which meant they needed to raise the height over this new zone to create the necessary headroom. The prefabricated flight from Stairplan has been finished off with a hardwood handrail based on an original Georgian design. The stairwell is now light and airy, thanks in part to the installation of skylights that are concealed by the double gable roof, thus preventing any planning issues.

The hallway is brighter, too, thanks rather peculiarly to the demolition of a Second World War relic. After a mass evacuation of the island, Alderney was occupied by German forces. During this period, a bomb shelter was erected next to the house. The couple had this removed as it was blocking daylight from entering the property.

Anyone trying to create a period feel in their home faces the same conundrum: finding ways to discreetly incorporate features that enable us to enjoy modern living and meet today's regulatory



standards. The mechanical and electrical engineers suggested the installation of smoke detection systems throughout the house, to meet fire safety regs. Darren, however, was keen to find a less bulky alternative – and the answer lay in a commercial detector. “It’s nothing more than a small hole in the ceiling and is designed for computer rooms and art galleries,” says John. Behind the ceiling plaster there’s a plastic pipe, which feeds into a Very Early Smoke Detection Apparatus (VESDA) unit located in the boiler room. This samples air via a laser and if particles of a specific density are identified, it assumes they’re signs of smoke and triggers the system.

Eventually, the numerous pieces of the restoration jigsaw came together and Geraldine and John could see the end in sight. And now that the project is complete, they are enjoying the fruits of their labour. Looking back Geraldine admits that although the process wasn’t the easiest, they’ve enjoyed the challenge. “For a time, it didn’t seem like anything went right. But when you’ve stripped the property back to just four walls, it affords you a blank canvas on which to imprint your own creation and achieve a result that suits you,” says Geraldine.



Marble tiles sourced on a trip to Verona add luxurious charm, elegance and appeal

closer look

Achieving period perfection...

Throughout the house, the Whittakers have paid careful attention to detail and looked to restore a Georgian look wherever possible. Despite the project's high budget, some of the features were remarkably affordable (such as the decorative ceiling roses at £40 each). An interesting example of old-meets-new came when they decided to create a close link between the ground floor music room and study, which was achieved by removing the dividing wall. Rather than create a simple opening, an authentic feel was introduced – in keeping with the property's age – by using classically-inspired decorative pillars and friezes.



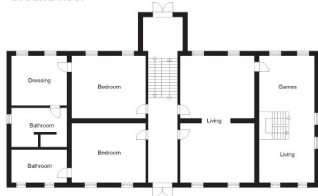
Georgian columns



Floorplans



Ground floor



First floor



Second floor

Elecosoft House plans re-created using ARCON 3D Architect Home Designer Software. www.3darchitect.co.uk
Tel: 01252 267788 Email: arconsales@eleco.com



TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Preliminaries	£422	11%	£270,000
Strip-out	£188	5%	£120,000
Foundations	£125	3%	£80,000
External walls & windows	£359	9%	£230,000
Roof structure & covering	£188	5%	£120,000
Internal walls	£297	7%	£190,000
Floor, wall & ceiling finishes	£453	11%	£290,000
Joinery & fittings	£406	10%	£260,000
Plumbing & heating	£445	11%	£285,000
Electrics	£477	12%	£305,000
Decorating	£375	9%	£240,000
External Works	£281	7%	£180,000
Grand total			£2,570,000

Useful contacts



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An engaging personality



Combining salvaged, local and modern materials has helped newlyweds **Patrick and Nicola Gilmour** create a truly individual contemporary home that blends beautifully into its farmland setting

WORDS MAIRI MACDONALD PHOTOS DOUGLAS GIBB

Above: The house has been clad in a combination of the original steading's sandstone and new Scottish larch, which will fade to a soft silver hue over time

Patrick Gilmour grew up on a farm in the East Neuk of Fife, complete with views out over the hills and agricultural land beyond. Having moved around the country for various jobs over the years, he hankered after those fields again. So when the time came for him to settle down, he was keen to return home.

"I had recently started a catering business in Fife, so it was important to live nearby," says Patrick. "I had my eye on the old stone barn that was part of my parents' farm steading. My father and I had previously discussed the possibility of converting it for use as a B&B and pop-up restaurant, so the potential was there. The view I grew up with is still incredible – wide open farmland and not a house in sight"



Above: Patrick has used different floor coverings to define the zones in the open-plan space, with maple-effect vinyl set against Urbus grey tiles, both from Karndean. The Tor Pico woodburner is from The Stove Co, while the Mercury range cooker is from Aga

Convert or start again?

Updating an existing building can offer both challenges and opportunities. In this case, the barn – formerly used as a hay shed – was close enough to the road to allow building materials to be easily transported to site. Water, electricity and telephone connections would also be fairly simple to arrange. But the building itself was single storey, which would have served to put an obvious limit on the amount of living space that could be achieved.

“As the planners were amenable to us changing the use of the land to residential, there was potential for a new, larger house,” says Patrick, who moved swiftly to appoint someone to bring the project forward. At the time he was living with his brother, Nicholas Gilmour, who is an architectural designer. Nicholas agreed to design and manage the scheme, and quickly identified that it would be easier to dismantle the original building and keep the stone aside for reuse rather than try to fit a new frame and insulation inside the existing structure. And so the idea for a sympathetic self build project took shape.



The Newman fitted furniture, painted in Clam, is from Kitchens International. The worktops are Lava Rock by Corian, with the exception of the solid oak breakfast bar



THE GILMOUR FILE

NAMES Patrick & Nicola Gilmour
OCCUPATIONS Chef & business development manager
LOCATION Fife, Scotland
TYPE OF PROJECT Self build
STYLE Contemporary
CONSTRUCTION METHOD Timber frame
PLOT SIZE Two acres
LAND COST £50,000
BOUGHT 2009
HOUSE SIZE 370m²
BUILD COST £506,000
BUILD COST PER M² £1,368
TOTAL COST £556,000
VAT RECLAIM £45,000
BUILDING WORK COMMENCED July 2012
BUILDING WORK TOOK 44 weeks
CURRENT VALUE £700,000

The brothers knew that, before planning permission could be granted, they would need to carry out a bat survey in order to comply with the Habitat Regulations operated by Scottish National Heritage (SNH). This would establish whether any protected species were roosting in the Victorian barn – as well as determine whether any remedial measures would be required to rehome them. “We commissioned an initial survey in late autumn, but SNH will only consider bat assessments conducted in the summer months of May to mid-September,” says Patrick. “We had to wait over the whole winter period before we could do another one.”

While this was an obvious setback to his building plans, it did give Patrick the chance to propose to his future wife, Nicola and convince her to relocate from London to Fife. The couple proved to be a great team. “The timing enabled Nicola to get involved in the design of our new house from the beginning,” he says. “She’s much more practically-minded about internal layouts than I am, whereas I was focused on the structure and how the design fitted into the landscape.”

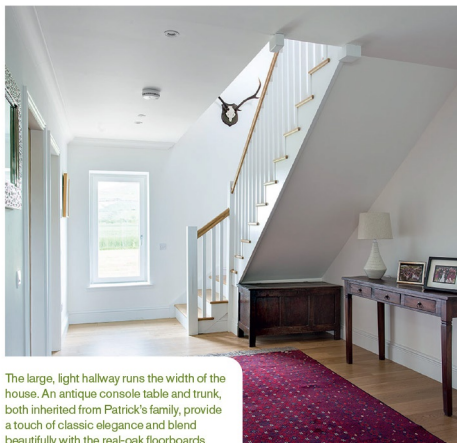
Shaping up

With plans for a wedding now in development, Nicholas was under pressure to complete the house in time for the couple to move in after the honeymoon. He worked closely with the planning office to come up with final drawings for a sandstone- and timber-clad, 1.5-storey bungalow that would meet their approval. The new house would stick to the original L-shaped footprint, with the reuse of the original stone helping to swing the decision.

“My biggest stipulation for the design was that I wanted the kitchen to be a double-height room with a large gable-end window, so I could look out over the fields whilst cooking,” says Patrick. “I left the rest to Nicholas.” This vaulted space would be accommodated in a timber-clad box on the north side of the building. The original stone would run most of the length of the house, with larch boards above.

The living room would include a picture window looking back down the drive, with its position corresponding to one of the shed’s original entrances. The back porch would have a corrugated tin roof in

“I wanted the kitchen to be a double-height room with a large gable-end window, so I could look out over the fields whilst cooking”



The large, light hallway runs the width of the house. An antique console table and trunk, both inherited from Patrick’s family, provide a touch of classic elegance and blend beautifully with the real-oak floorboards

WE LEARNED...

TIMING IS EVERYTHING with bat surveys – and unfortunately we missed the boat and had to wait until the following summer for its assessment, which delayed our planning application.

REUSING MATERIALS can help tie your project into its surroundings. Repurposing the original building's sandstone as ground floor cladding saved money, too.

ENGAGING TRUSTED TRADES and professionals made a real difference to our scheme. Nicholas had access to a reliable team who ensured the house was finished just a few weeks after we returned from honeymoon.



homage to the agricultural buildings elsewhere on the site. Patrick was keen to use local materials wherever possible, so indigenous larch was selected for the cladding and the barn's pantries were sold to make way for more traditional Scottish slate tiles.

Before work could begin, Patrick needed to organise financing for the project. He was able to release funds from a buy-to-let mortgage on a flat he owned in Edinburgh, which gave him access to 60% of the apartment's value. With the couple both employed full time, they persevered with the plan to take on Nicholas to project manage the scheme. Having just completed his own stable conversion as well as a new build for his parents, Nicholas had access to a loyal, mostly local full-time workforce of two joiners and two builders. "I called in the other trades as needed, which helped to keep costs down," he says.

Warm welcome

Once the original barn was carefully demolished and the sandstone set aside, a timber frame was erected and sheathed with oriented strandboard (OSB) on the inside. Patrick was keen to create a sustainable home with minimal running costs. To that end, the shell was filled with 140mm of Pavaflex insulation, while 100mm-thick Pavatherm boards were attached to the outside of the frame. Made of

lightly compressed woodfibre, the boards offer excellent thermal and acoustic insulation. The joints were then taped and glued to eliminate draughts, before the sandstone and larch claddings were applied.

All of the windows are triple glazed to retain as much warmth as possible. The underfloor heating and hot water supply run off an Ochsner Golf ground source heat pump, with approximately 850m of warmth-collecting pipework buried into the surrounding soil. Although this was costly to install, the couple were able to take advantage of the government's Renewable Heat Incentive (RHI), which will pay out 18.8 pence per kilowatt-hour (p/kWh) of energy it generates for the next seven years. The setup is complemented by a mechanical ventilation and heat recovery system, which extracts stale air from the interiors and re-purposes its warmth to pre-heat a fresh, filtered incoming supply.

With insulation levels around 25% better than required by the Building Regulations, Patrick and Nicola estimate their heating bills will be approximately £1,500 per year before they receive their cashback. The Green Deal assessment they commissioned predicts that the RHI payments could amount to as much as £5,000 per annum over the next seven years – which will make huge inroads into clawing back the installation costs.

"This year we were able to turn the heating off in April, despite the cold weather, and throughout the winter we were able to maintain the thermostat at 22°C," says Patrick. "However, when the woodburning stove is lit, the heat recovery unit transfers that extra warmth around the house and the thermostat actually ends up shutting off the ground source heat pump." Installed primarily for its visual appeal, the woodburner sits in front of the double-height window in the open-plan kitchen/dining/living zone, with the flue rising right up through the vaulted space. "The warmth even reaches our bedroom, so we don't often need the underfloor heating upstairs," says Patrick.

Modern living

The downstairs layout is centred around a large hallway. On one side is the kitchen, which flows into a dining and living space, plus a utility room and pantry. Double doors lead out from this area directly into the garden, where a large patio area is great for parties and socialising.

As Patrick desired from the outset, the kitchen has quickly become the heart of the house. This is a practical working zone, supporting his career as a professional chef, but one that easily doubles up for functional family living. A double-size range cooker is located in the central island unit. "This runs on LPG, as I prefer to cook on gas," says Patrick. "The slimline extractor hood is built into the ceiling and can shift air at 1,000m³/h. It's as close as I could get to a professional kitchen without having an industrial look."

To the other side of the ground floor is the larger, more formal sitting room, which has been kitted out with a home cinema and internet-enabled TV. Technology-wise, Cat6 cabling has been run throughout the property and each room has been fitted with TV data and network points for future proofing. There's also a Sonos whole-house audio system, which is split into five zones and can be managed from any computer or smart device.

Set on a mezzanine level above the kitchen, the master bedroom – which includes two dressing rooms and an ensuite – offers views out to the fields beyond. A glass balustrade on the landing ensures the double-height space retains its open feel and the panoramas remain

Glazed double doors lead out from the bedroom onto the mezzanine; ensuring natural light floods into the master bedroom and allowing the couple to enjoy the views

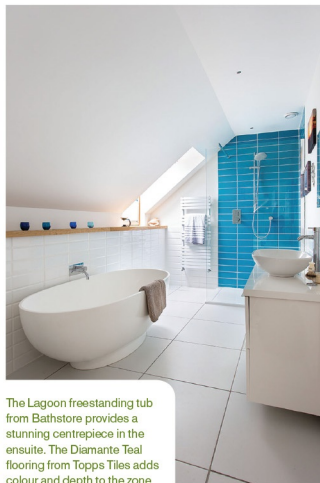


The flue for the stove follows the line of the window frame, ensuring it remains discreet and doesn't block the vista

uninterrupted. There are three further double bedrooms, one with an ensuite and the other two sharing a large family bathroom.

Tailor-made

After three years of planning and a 10-month build, the Gilmours' new house was finally ready to move into three weeks after their honeymoon. "We could never have bought a place like this on the open market," says Patrick. "By using the old stone from the barn and combining it with modern structural techniques and technology, we've created a comfortable, unique living space. We're now realising a dream and running a B&B and pop-up restaurant from our home. I can't see us moving for quite some time – if ever."



The Lagoon freestanding tub from Bathstore provides a stunning centrepiece in the ensuite. The Diamante Teal flooring from Topps Tiles adds colour and depth to the zone

closer look

Bringing in natural light...

Patrick's desire for a home that made the most of the farmland views is epitomised in the glazed gable, which is a key architectural element on the western elevation at the foot of the L-shaped floorplan. This kind of feature is easy to achieve in isolated locations, where privacy and overlooking issues aren't major concerns, and creates an instant connection between the house and its surroundings.

Designer Nicholas has made clever use of this element of the scheme, which opens up the main living zone to the fields beyond while also providing access to beautiful vistas from the main bedroom. This space is set back on a mezzanine level and accessed via glazed French doors dressed with curtains in a Designers Guild fabric, ensuring that summer sunshine won't disturb the couple's sleep.



The glazed gable



TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Preliminaries	£41	3%	£15,000
Foundations	£38	3%	£14,000
External walls and windows	£149	11%	£55,000
Roof structure and covering	£94	7%	£35,000
Insulation	£122	9%	£45,000
Internal walls	£27	2%	£10,000
Floor, wall and ceiling finishes	£81	6%	£30,000
Joinery and fittings	£54	4%	£20,000
Plumbing & heating (incl. bathroom & kitchen)	£270	20%	£100,000
Electrics	£81	6%	£30,000
Decorating	£27	2%	£10,000
Fees	£41	3%	£15,000
External works	£19	1%	£7,000
Labour	£324	24%	£120,000

Grand total

£506,000



Floor plans



Elecosoft

House plans re-created using ARCON 3D Architect Home Designer Software, www.3darchitect.co.uk
Tel: 01252 267788 Email: arconsales@eleco.com

Useful contacts



ARCHITECT **Nicholas Gilmour (JNG Design)** 07968 957747
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INSULATION **Natural Building Technologies** 01844 338338 www.natural-building.co.uk **SCOTTISH LARCH CLADDING** **Russwood** 01540 673648 www.russwood.co.uk **SCOTTISH SLATE ROOF TILES** **J Cummings & Son** 01738 624020 www.slatemerchantssperth.co.uk **ROOFER R&D Edgar** 07958 031011 **WINDOWS Variotec** from **RA Consultants** 01880 821189 www.passivconsultants.co.uk **PATIO DOORS NorDan** 01786 408380 www.nordan.co.uk **ELECTRICS RW Bell** 01796 472263 www.rwbell.com **LIGHTS Turkan** 01738 552481 www.turkan.co.uk **WOODBURNING STOVE Tor Pico** from **The Stove Co** 01334 848913 www.thestoveco.co.uk **PAINT Craig & Rose** 01383 740011 www.craigandrose.com

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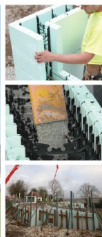
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Boxing clever

Eilir Sheryn and Frederieke van Ellen successfully self built a stunning modernist-style home for a modest budget, even though a key supplier let them down

WORDS JANE CRITTENDEN PHOTOS JAMES FRENCH

THE VAN ELLEN & SHERYN FILE

NAMES Eilir Sheryn & Frederieke van Ellen

OCCUPATIONS Architects

LOCATION Devon

TYPE OF PROJECT Self build

STYLE Contemporary

CONSTRUCTION METHOD

Timber frame with Dutch brick & zinc cladding

PLOT SIZE 0.5 acres

BUNGALOW COST £395,000

HOUSE SIZE 360m²

PROJECT COST £325,000

PROJECT COST PER M² £903

TOTAL COST £335,000

BUILDING WORK COMMENCED

October 2012

BUILDING WORK TOOK

50 weeks

CURRENT VALUE

£800,000



Architects Eilir Sheryn and Frederieke van Ellen, like most people seeking to create a bespoke dwelling, didn't have a bottomless pit of gold from which to draw funds for their project. So they conceived a clever design that has made it possible for them to create their new property for an incredible £903 per m². Their Ashburton home is a striking contemporary design made all the more appealing by its simplicity and affordability. The result is the kind of individual project that would be within reach of many aspiring self-builders.

"Our budget defined our architectural approach to the project," says Eilir. "We began with a simple timber-frame box shape because we knew it would be affordable to build like this and that we could dress the outside in an imaginative way, while creating beautiful and efficient spaces on the inside."

Eilir and Frederieke's self-build journey began in 2004, when they were still living in Hertfordshire. "I was happy with my job in London but I worked long hours and hardly saw my three children," says Eilir. "Then when Frederieke fell pregnant with our

fourth child, I finally decided that enough was enough and something had to change."

Eilir, who was brought up in Wales, and Frederieke, who's Dutch, had enjoyed plenty of happy family holidays in Devon and decided this would be the best place for their growing brood to experience a better lifestyle. Within six months they were renting a property in Exeter, where Eilir had found a job, but their desire to self build hadn't strayed far from their minds. They spent weekends looking around Devon for a plot and narrowed their search down to Ashburton. "We love being on the edge of Dartmoor National Park," says Eilir. "Ashburton is a pretty, medieval town and there's a thriving community."

A real prospect

By now it was 2006 and Eilir had decided to set up practice with an architect friend not far from Ashburton. Around the same time, the couple bought a tired 1950s three-bedroom bungalow on a half-acre plot within a high-walled garden, just minutes from the town centre. The previous owners had approval for an upper storey extension so there were positive signs that a full application might be considered. It seemed like the dream was falling into place for the family, but Eilir and Frederieke weren't in a hurry – at first they weren't even sure they would demolish the bungalow. "We were going to remodel and add a major extension," says Eilir. "But when we looked at the costs, including VAT, it just seemed to be prohibitively expensive. We also realised the walls and foundations

The metal cladding offers the family a low maintenance product that's durable and appealing, too

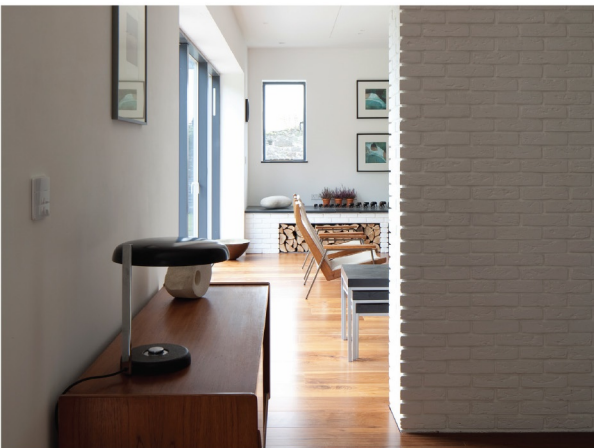


required significant upgrading, so we decided the house had really come to the end of its useful life. It made more sense to start again."

The couple went back to the drawing board and started plans for a completely new home. The top priority was space: it was clear the family of six were bulging at the seams in the three-bedroom bungalow and Eilir and Frederieke were thinking long-term, too. "The whole model of family life has changed," says Eilir. "Kids don't always leave home at 18, so we wanted five big double bedrooms where our children can stay as long as they need to." Their budget of £325,000 was also a factor, and one of the reasons why their project



“We’ve watched our vision come to life and now we’ve got a house that will last the rest of our lives”



didn't begin until six years after they moved to Ashburton. Eilir says that although they design a lot of ambitious shapes and styles for their clients, the best way forward in their situation was to keep the design simple. "We didn't have a huge budget so we couldn't afford to lose any space in double height rooms or via grand architectural gestures," he says. "A simple and efficient cubic rectangle has really worked for us."

Winning design

One of the potential issues was the plot's location, as it's within Dartmoor National Park as well as Ashburton's conservation area. But the 4m-tall surrounding wall became a trump card. "Although we're within walking distance of the town centre, we're not close to any of the Georgian or medieval listed buildings. Even more importantly, we're hidden from the street," says Eilir. "We did, however, stick our neck out with a contemporary design. Fortunately the planners really liked it and no one objected to the height."

Having a close working relationship with the planning authority was an advantage as the couple understood the local restrictions. Mindful of the height and volume of the surrounding properties, they kept to the same footprint as the bungalow and chose a flat roof construction. "If we'd gone for a



A contemporary living zone complete with Scandinavian furniture offers the family a warm and inviting space to relax in

WE LEARNED...

USE A QUANTITY SURVEYOR.

We hired someone and paid £800, but we felt that his contribution was invaluable as the detailed cost plan was our map to guide us through the whole project.

TRY TO EMPLOY local labour; and source materials from nearby. We bought direct from the supplier and were able to negotiate on the prices.

HAVE THE COURAGE and conviction to follow your dream; we were anxious about how our plans would go down with the local authority, but we forged ahead and now we've got our forever home.

traditional pitched version then it would have exceeded the existing roof height significantly and impacted on our neighbours' views of the countryside," says Eilir. "We've dropped the house down a bit and with the setup we've chosen we're only 800mm above the original ridge height of the bungalow. The roof is also perfect for hiding 20 photovoltaic solar panels, which provide all the electricity we need."



Brightly-coloured subway tiles help create a feature wall and add interest to the clean finish in this kitchen



Expansive glazed panes provide views from the open-plan living-diner into the external garden space

A different approach

It was March 2010 by the time Eilir and Frederieke received planning approval. For the next two-and-a-half years the couple made sure they had their finances in place, and every aspect of the build designed and costed to the last detail. The couple also found time to set up their own architectural practice, Van Ellen + Sheryn, after Eilir's business partner emigrated to Australia.

During these intervening years the couple made a U-turn on their choice of external materials and re-applied to planning for a minor amendment. Initially they thought they would use white render and combine it with oak cladding, but they decided they could be a bit more ambitious. "We stayed with the same colour palette but instead of render we've used Dutch bricks and painted them white alongside brown pre-patinated zinc instead of timber," says Eilir. "The contrasting materials intertwine around the four facades, creating an abstract composition that aims to break down and blur the building's edges." The thin, 50mm profile bricks are a nod to Frederieke's roots and have been imported from a factory near her hometown in Holland. "The Dutch are good exponents of brickwork and we wanted to bring a little bit of the country to Devon," says Eilir. "The deeply raked mortar joints give the bricks a strong horizontal emphasis and as they're handmade, they're textured and tactile with no one unit the same as the other. For contrast we wanted a vertical emphasis that was quite flat and machined, so that was why we chose to apply brown zinc."

The build finally began in October 2012 after the family had moved into rented accommodation nearby. By now, a very thorough and well-coordinated set of detailed drawings had been prepared by their office, showing every material and interface. The couple lined up tradespeople who they knew through their work, which Eilir says was a key area where they saved money. "We



couldn't have afforded to build this design if we'd gone out to tender to one main contractor," he says. "Instead we broke the project down into its component parts and got everything costed by a quantity surveyor so that we could align the quotes that came in against our budget." The process meant the couple could work out which trades were the most competitive and also keep tabs on the costs as the project went along.

A bump in the road

Once the demolition team came on board it became clear that knocking the bungalow down was the right decision, as there were barely any foundations. Eilir liked the way Graham Hannaford and his team, from Kesterbrook Construction, handled the demolition and decided to keep them on to work on other parts of the project. "They were so good and came at a reasonable price so we kept them on, bringing in some specialists for the zinc, windows, roof and timber frame," he says.

The project got off to a smooth start, but then one morning Eilir received a mysterious phone call from a local timber frame designer, who said he would probably need a new frame supplier. "I had no idea what he was talking about," says Eilir. "But it transpired that the firm who were building our structural shell had gone bust and I'd lost my £18,000 deposit." Eilir's jaw dropped when he finally

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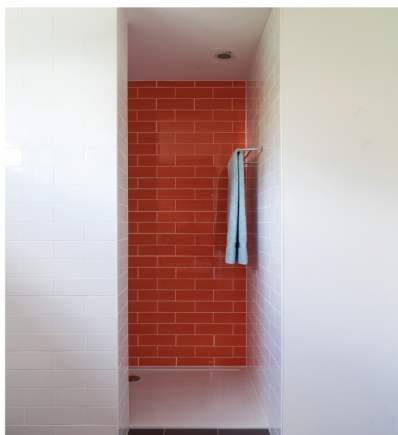


QUICK GUIDE: METAL CLADDING

Eilir and Frederieke chose to clad their new home using profiled zinc sheeting to help achieve a modernist-style aesthetic. They also opted for the material because it's fully recyclable, doesn't rust and will last for decades with little to no maintenance required. It usually comes on a roll, which is crimped into a standing seam so it has a hand crafted finish. It also comes pre-patinated in a variety of hues, such as green, blue and dark grey. Standing seam solutions can be applied vertically or horizontally and fixed to straight or curved walls. They are available in a variety of shapes and sizes.

realised the conversation was genuine and decided to meet the caller, Bill Holmes, along with the timber frame firm he was recommending. "At first I was sceptical, but Bill and his proposed subcontractors, Tribus, were amazing. I couldn't praise them enough. Their workmanship was superb and their boss, Lee McArdle, did a great job in managing the site team," says Eilir. The unforeseen problem delayed the project by three months; but this then turned in their favour when the timber frame costs came in at £8,000 cheaper than Eilir's original quote. "Tribus built the frame stick-by-stick on site, which takes longer, but was cheaper than the factory-assembled prefab option we were going with before," says Eilir. "There's no right or wrong way, but we valued the cost saving more than the time delay."

The scheme progressed smoothly after that, with Eilir and Frederieke managing the business and their family commitments as well as the build. Less than a year after breaking ground, their home was ready. The couple's determination to stick unwaveringly to their original design and budget has been the making of this project. The 360m² house looks impressively individual and highly specified, yet was constructed at a rate of just £903 per m². "Every decision had been made by the time we started work and that was the recipe to this project's success," Eilir says. "We had computer models for every single room – we even knew where the furniture was going! We've watched our vision come to life and now we've got a house that will last the rest of our lives."



closer look

Pitch perfect...

Flat roofing technology has moved on from the leaky felt coverings of old. Eilir and Frederieke used Sarnafil, which is a single ply membrane that comes on a roll and has a 40-year guarantee. It was laid to a slight fall of two degrees with the joints overlapped and welded together so the membrane became one continuous waterproof sheet – not unlike a swimming pool liner. The membrane is covered with a layer of round pebbles. This setup has proved a perfect solution for discreetly housing an array of 20 solar photovoltaic panels that face due south and supply the household with all of its electrical needs, but if they were visible they could have been contentious in the conservation area.



Flat roof



Floorplans



Ground floor



First floor

Elecosoft House plans re-created using ARCON 3D Architect Home Designer Software, www.3darchitect.co.uk
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TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Demolition, foundations & drainage	£83	9%	£30,000
External walls (inc. frame)	£250	28%	£90,000
Windows & external doors	£56	6%	£20,000
Roof structure & covering	£56	6%	£20,000
Plasterboard & skim	£69	8%	£25,000
Floor, wall & ceiling finishes	£42	5%	£15,000
Joinery, doors & fittings	£42	5%	£15,000
Plumbing & heating	£69	8%	£25,000
Kitchen & bathrooms	£97	10%	£35,000
Electrics (incl solar panels)	£97	10%	£35,000
Decorating	£14	<1%	£5,000
External works	£28	3%	£10,000

Grand total £325,000

Useful contacts



ARCHITECTS van Ellen + Shern Architects 01364 653 503
www.vanellenshern.com BATHROOMS Dart Bathrooms 01803 835000
www.dartbathrooms.co.uk KITCHEN Xylophone Interiors 01626 360609
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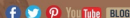
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Living in harmony

A passion for period properties has helped the **Webbers** add a sympathetic extension to their 18th century barn

WORDS JANE CRITTENDEN PHOTOS JEREMY PHILLIPS

Zoe and Stuart Webber began looking for their first home together in 2011, keen for a piece of tranquillity to escape their busy jobs in football in Liverpool. They were sorely disappointed when a barn they liked on the borders of Lancashire and Merseyside went under offer before they even had a chance to view it. But shortly afterwards they received a phone call to say the sale had fallen through. "We were delighted because we love the location," says Zoe. "We're tucked away down a lane with just two other neighbours and the site backs onto the Leeds-Liverpool canal."



The Webbers were complete novices to any kind of renovation project, so they were understandably wary about turning the dilapidated outbuilding next to their barn into a liveable space. "We were very sensitive to the fact that putting a modern extension on the side of the older property could strike an imbalance," says Zoe. "We wanted it to look and feel like an old farm building – as if it had always been here." The 150-year-old barn had been converted some 15 years or so earlier, but there was a ramshackle workshop just steps away to the side of the property that was crying out for some attention. The neighbours had a similar sized



The new open-plan kitchen-diner looks out to the garden via large glazed doors

building, which they used as a garage, and Zoe and Stuart thought they might do something similar. They also considered demolishing and building a like-for-like granny annexe on the footprint. However, as the barn is in a conservation area, they decided to seek advice from planning consultant, Michael Cunningham. "He said there was a chance the planners might let us connect a new outbuilding with the barn as long as we didn't obstruct the neighbours' views," says Zoe. "He suggested a glazed link, which

changed the entire scope of what we could do as it meant we could join the two structures to create a cohesive home."

Excited by the prospect, the Webbers decided to pursue the design idea with their architect. Neither of the neighbours would see the link from their homes so they felt they had a good chance of getting planning approval. By now, the couple had been living in their house for over a year and had talked through lots of proposals for how they might use the building. One of the favourites was



making the kitchen bigger, as having a small space for the culinary zone had been a compromise they'd made when they bought the barn. "We thought we might open up the existing space and merge it with the living room to create a bigger kitchen-diner," says Zoe. "Then as we kept talking we realised it was best to use the extension for this. It meant our front door would have to move to the new part of the house, so it would completely change the dynamic of our home." The final design is a similar size to the original workshop with enough room for a utility and small shower room, too. The main kitchen-diner has a vaulted ceiling and there's loft storage, something that had been lacking in the barn.

“The change to our home has been dramatic; the whole flow is quite different”

An honest job

Finding a contractor who could complete the works without harming the barn's fabric was critical, but the couple were new to the area and didn't know anyone. "You hear such horror stories where people have been let down, so for reassurance we posted our project on the Federation of Master Builders (FMB) website," says Zoe. It was via the site that Martin Silcock, managing director at Tricklebank, approached them. "We really landed on our feet," says Zoe. "Martin and the team were very interested in our project from the start and were brilliant throughout."

The team had experience with lots of period properties so the Webbers knew they would be sympathetic to the project. "Martin was enthusiastic and interested, and his quote included everything,

right down to the last tin of paint," says Zoe. Martin's transparency with costs also put the couple at ease, and although he quoted at £10,000 more than other candidates, he found ways to make adjustments to reduce items. "We didn't actually have enough money to do the project," Zoe admits. "But we asked Martin if we could get started and save up as we went along. We had an open, honest dialogue throughout and he worked really hard to save

THE WEBBER FILE

NAMES Zoe & Stuart Webber
OCCUPATIONS Premier League match manager & head of recruitment
LOCATION Lancashire
TYPE OF PROJECT Extension
CONSTRUCTION METHOD Timber frame
EXTENSION SIZE 48.5m²
HOUSE SIZE 107m²
PROJECT COST £103,000
PROJECT COST PER M² £2,123
TOTAL COST £313,000
VAT RECLAIM £31,000
BUILDING WORK COMMENCED January 2014
BUILDING WORK TOOK 14 weeks
CURRENT VALUE £420,000





money where he could. For example, we wanted to use Farrow & Ball paint, which is relatively expensive and he had a cheaper trade version mixed to the same colour and used that as the undercoat.”

The Webbers’ project was set up on a fixed priced contract, using HBXL estimating software. Martin says that the company has been using the service on most projects since 2002. “We made some modifications so that it would fit our own purchase order

system,” he adds. “It’s easy to understand for all parties, which is important as clarity from the beginning is essential.” Michael submitted the Webbers’ planning application in October 2013 and they received approval eight weeks later. The conditions stipulated the new building be clad in reclaimed stone and brick, with salvaged slate tiles on the roof and timber window frames. These were decisions the couple were more than happy to comply with.

WE LEARNED...

ASK FRIENDS and family if they have any furniture they don’t want any more. Stuart’s mum donated a dresser and a set of drawers that became the start of our freestanding kitchen.

LOOK AROUND your home to see whether there’s anything you can upcycle. We painted an old brown Ikea bookcase and turned it into a log store. We did the same to old picture frames, using chalk paint to bring them up-to-date.

SCOUR EBAY for bargains. We sourced pieces to complete the kitchen and asked the carpenters to paint them in the same Farrow & Ball colour to create a uniform look and feel. We also bought a dining table and chairs and re-covered the seats in hessian sack, which cost around £10.

Work begins

The project got started in the first week of January 2014 after Zoe and Stuart demolished the old outbuilding, with some help from friends and family. Everything was going according to plan until the Tricklebank team hit the water table in one corner of the foundations, which kept flooding the trench. Thankfully, following discussions with the building inspector, they found a way forward. “I thought we’d be delayed by having to go back to the structural engineer but we were fortunate to have a superb inspector, Joe Doyle, from Sefton council’s building control department,” says Martin. “We came up with a solution between us, which meant introducing steel reinforcement and mass filling the problem area.”

The extra work cost £1,000, which was an early setback to the budget. However, Martin assured the couple that he would try and claw it back elsewhere. Work picked up pace and the masonry structure was quickly built and clad in reclaimed brick and stone.

Fitting the oak truss into the new space took some doing, as the team couldn’t get access on either side of the property. Instead they just about managed to crane it in with a 12.5m telescopic handler, using its highest allowable distance. At one point, Martin wasn’t happy with the design of the roof support in the corner of the room where the bifold doors and windows joined, so he made the

decision to put in extra reinforcement. "He was very thorough and explained exactly why he was doing it," says Zoe.

Another challenge was extending the services but they found an answer here too. "All of our floor coverings are wood or tiles and we didn't have the budget to rip them up or repair them," explains Zoe. "Instead, the plumbers did a great job by removing one tile in the bathroom and going up through the living room ceiling to run the pipes through that section."

A fine result

All-in-all, the Webbers have been bowled over by Tricklebank's attention to detail, citing Martin's interest in the design as being just as important as his meticulous construction work. He helped Zoe source reclaimed lights, discussed paint colours and at one point encouraged them to put oak purlins into the vaulted ceiling.



A small utility space conveniently leads to the new downstairs wetroom



Zoe says the project has been far less stressful than they imagined. "The change to our home has been dramatic. The whole flow is quite different and the new kitchen-dining-living space is

fantastic. We wouldn't be daunted by the prospect of doing another project, in fact, if I ever had the opportunity, I'd definitely get Martin to build us a house!"

closer look

Working with reclaimed materials...

The couple landed on their feet when they found builder, Martin Silcock from Tricklebank, as he is a keen advocate of employing salvaged products and used to run a reclamation yard alongside his contracting business. "We've converted a lot of barns over the years – I live in one myself," he says. "We love doing them and know where to source all the correct materials. But for those who aren't sure where to start, you can find all the reclamation yards listed on www.salvo.co.uk."

Martin paid particular attention to the reclaimed brick and stone, which he sourced from bricklayers, Graham Porter & Son. These were raked out and given a light sandblast to clean the faces and get the old mortar off. When buying old masonry units you should avoid those that have been laid on black mortar, as they're difficult to clean. Instead search for clean units that have been bedded on soft lime mortar. Before you buy, always take a few examples out of the middle of the pack to check for quality; you need three good corners on a decent brick.

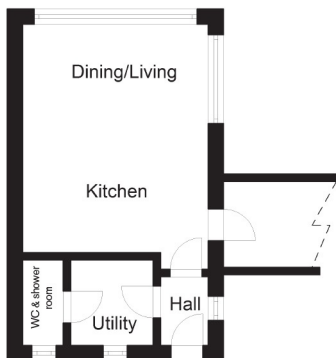


Salvaged bricks



Floorplans

The extension



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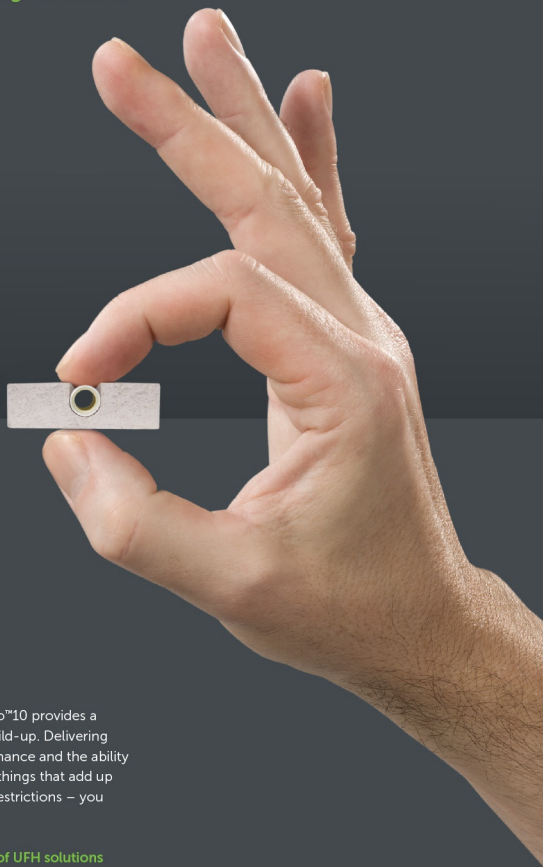
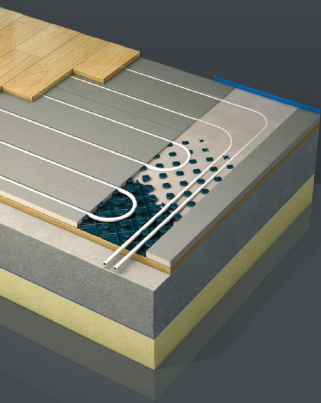
TOTAL BUILD COST BREAKDOWN

Elements	Cost m ²	Cost %	Total cost
Main building work	£1,934	91%	£93,800
Heating & plumbing	£103	5%	£5,000
WC & shower room	£25	1%	£1,200
Kitchen	£62	3%	£3,000
Grand total			£103,000

Useful contacts

BRICKLAYERS Graham Porter & Son 07816 993459 **BUILDERS** Tricklebank 01704 841831 www.tricklebank.com **BUILDER'S MERCHANTS** MKM Builders Merchants 01704 514700 Almonds Builders Merchants 01704 878651 **ELECTRICS** AKR Electrical 07966 079523 **JOINERY** Jeff Thornton 07973 963445 **JOINERY MANUFACTURING** JH Joinery Manufacturing 07775 613926 **KITCHEN** Olive Branch www.olive-branch.biz 01937 582797 **Live with Wood** 01773 832 476 www.livewithwood.com **PLASTERERS** Tony Hide 07887 156538 **PAINTING & DECORATING** Denis Balenski 07712 023389 **PLANNING CONSULTANT** Michael Cunningham 01695 580490 www.cunningham-planning.co.uk **PLANT & GROUNDWORKS** Emery Plant Hire & Groundworks 07831 101689 **PLUMBERS** Swannmech 07976 068771 **RECLAIMED WELSH BLUE SLATES** All Slates 01829 262600 **ROOF** Jordan Roofing 07961 916032 **STONE** Steptoes Yard 07967 106880 **STONE FLOORING** Stonevale 01423 815416 www.stonevale.co.uk

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Think about the building before the building begins

You know what you want your house to look like – but do you know how you want it to be built? Here H+H, a leading manufacturer of aircrete blocks and the thin-joint system, answers a few important questions focusing on the bits of the house you don't see, but that are arguably more important than the bits you do see.

WHAT ARE THE KEY CONSIDERATIONS SELF BUILDERS SHOULD TAKE INTO ACCOUNT WHEN DECIDING WHAT MATERIALS TO USE IN THE CONSTRUCTION OF THE HOUSE?

Before deciding what building materials to use, builders and homeowners need to primarily think about timescales, budget, Building Regulations, aesthetics, planning regulations and how sustainable the homeowner would like the house to be.

However, a lot of it comes down to preference. The preferred house building materials in the UK are masonry materials. Masonry gives home owners a feeling of solidity and reliability that doesn't always come from light weight frame structures. It is not unknown for homeowners to go around knocking walls with their fists – the idea behind this is to see how solid or otherwise a wall is. This is important when it comes to common household tasks such as hanging shelves and heavy mirrors.

HOW DO H+H PRODUCTS FIT IN WITH THE SELF BUILD MARKET?

Just last year H+H launched the Masonry House Package with a view to specifically helping self builders. It is designed to take the hassle and worry out of building the fundamental elements of a build project – the walls and foundations.

The Masonry House Package includes technical advice, detailed product specification and the supply of vital masonry related products required for the build.

Customers can send in their drawings for our technical team to assess. Working from the drawings our team will calculate the materials required to build the walls and foundations using Celcon Blocks and the thin-joint system.

Thin-Joint refers to the mortar thickness between the blocks which is virtually

airtight upon completion. Thin-Joint blockwork enables walls to be built very quickly without having to wait the conventional 24 hours for the mortar to set before further loading can be applied.

We will provide the builder with a fixed price quotation for all of the necessary structural materials including Celcon Blocks, Celfix Mortar for the Thin-Joint and wall ties. Once the purchase is agreed we will deliver all of the materials to site. The only thing left for the customer is to decide what the final outer finish will be. The aim of the package is to ensure that builders get everything they need, when they need it.

FOR SELF BUILDERS TIME IS OFTEN OF THE ESSENCE. HOW LONG DOES IT TAKE TO BUILD THE SHELL OF A HOUSE USING H+H MATERIALS?

It can take as little as a couple of days. There are many aspects of our products that help speed up the build process. Aircrete blocks alone are much lighter in weight than dense concrete blocks meaning it is easier and quicker to manoeuvre them around site. The real speed however comes when you consider the mortar and the size of the blocks.

H+H blocks come in a wide variety of sizes. Our Jumbo Bloks and Multi Plate blocks are large format which helps with the speed of build. Multi Plates are over twice the size of a Celcon Block helping to significantly speed up the build process.

We also have our own build method called R&B Build. This is a combination of large format blocks and the Thin-Joint construction system.

R&B Build enables the inner leaf of the external walls of a house to be built in a couple of days and independently of the outer leaf. This allows the first-fix trades to begin their work before the walls are even complete which saves both time and money.



SUSTAINABILITY, THERMAL EFFICIENCY AND AIR-TIGHTNESS ARE ALL PRIME CONSIDERATIONS FOR SELF BUILDERS. HOW DO H+H PRODUCTS ASSIST WITH THIS?

As a material, aircrete ticks many of the sustainability boxes. At least 70 per cent of every H+H aircrete block is made of pulverised fuel ash – a waste material that is a by-product of energy generation that would otherwise go to landfill. As a result, our constructions achieve very high ratings in the BRE's Green Guide.

We also score highly on any rating that looks at the issue of local sourcing. Manufactured entirely in the UK from locally sourced materials, our products do not accumulate significant "air miles" in travel and contribute to employment and wealth around our manufacturing bases.

Just as significant is the role our products play in the construction of sustainable buildings. Our philosophy is very much one of "fabric first" – that energy efficiency should be built into the fabric of a house so that it remains effective for the lifetime of the building. This philosophy is now reflected strongly in Part L of the Building Regulations. We believe that this is a far better option than relying on technologies that are either unproven over the longer term or rely on the behaviour of the building occupants for their effect.

For further information on H+H, its products and services, visit www.hheelcon.co.uk. You can also follow us on Twitter @celconblocks, like our Facebook page 'H+H Celcon' or watch videos on our YouTube channel 'hplushuk'



Renovation & building

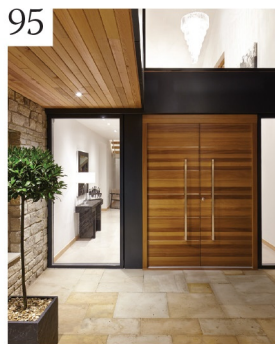
SELF BUILD + RENOVATION + EXTENSION + CONVERSION + IMPROVEMENT



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Not sure whether to enlist an expert or go it alone? Chris Bates helps you decide – and gives his top tips on how to run your own scheme

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Structural insulated panels are taking their rightful place as a mainstream construction method, says Mike Hardwick

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Top-down brightness can transform your living space. Here's what you need to know about rooflights

PLUS: FLOORING GALLERY (PAGE 85), TILT-AND-TURN WINDOWS (PAGE 93) & FRONT DOOR DESIGN IDEAS (PAGE 99) >>>



THE ESSENTIAL

SELF BUILD GUIDE

Part 8 Project management

There are a variety of routes to successfully organising a self build, but how do you choose which will best suit your scheme? **Chris Bates** helps you decide whether to go it alone or leave it to the professionals

If you're thinking of building your own home, one of the biggest decisions you'll need to make is exactly what route to take and who will be responsible for delivering it. Every major project needs someone to manage it and utilise their skills, and those of others, to achieve the desired outcome. In this case, the goal is to create a new house on time and on budget.

There's a variety of ways to realise a self build, but the majority are centred on the fact that you're commissioning a new home – so don't expect to have to construct it yourself. In fact, relatively few intrepid individuals actually take a DIY approach to their schemes. Instead, most bring in some kind of hired help to take care of part or all of the work.

In this article I'll look at the key project management routes – from overseeing the trades yourself through to engaging a main contractor or package supplier to take care of everything for you – and explain how you can decide which option best fits your needs.

Using the experts

The beauty of engaging an industry professional to run your scheme – whether it's an architect, project manager or main contractor – is that you'll have one key point of call throughout the process. If there's an issue with the work, materials deliveries or individual trades you can speak to your appointed PM and they'll deal with it on your behalf. Fundamentally, they're



Above and left: Despite having misgivings about the mess and disruption of a self build, Jill and Lloyd Smith couldn't resist a beautiful village plot near Winchester. Their desire for a fast, no-nonsense project and high spec led them to prefabricated timber frame supplier, Baufritz (www.baufritz.co.uk), which specialises in providing a complete design and build package (excluding the groundworks). The couple were flown out to Germany to select their fixtures and fittings at the firm's factory – in fact, the only element they had to source themselves was the kitchen. The contemporary 280m² house was completed in just 26 weeks for £800,000. The Baufritz package accounted for £600,000 of this total

uk), which specialises in providing a complete design and build package (excluding the groundworks). The couple were flown out to Germany to select their fixtures and fittings at the firm's factory – in fact, the only element they had to source themselves was the kitchen. The contemporary 280m² house was completed in just 26 weeks for £800,000. The Baufritz package accounted for £600,000 of this total




media partner **Build It**

This series is sponsored by the Self Build Academy. Design and build specialist Potton has partnered with *Build It* to offer an educational series of courses to guide self builders through the exciting journey of creating a bespoke home. The independent sessions cover everything from building with masonry or structural timber through to project management and finding land.

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taking a portion of the risk and responsibility out of your hands and bringing their experience to bear on your scheme. That can save you time, head off mistakes and – especially if your project is particularly large, complex or innovative – potentially save you money.

Professional manager

Most independent PMs operate on a fairly local patch. Usually, they'll look to agree a guaranteed ceiling price for the project with you and then take the job out to tender (invite trades to quote).

"We aim to tailor our service to what people want," says Brent Ackerman from Delta Project Management. "A lot of self-builders have busy lives and want us to take on the whole scheme; getting quotes from sub contractors; preparing the programme; making sure health and safety is sorted; and everything else that's involved. The other main service is a watertight package, which includes the groundworks, foundations and erection of the structural shell." This means the heavy side of things is taken care of and you can concentrate on arranging the internal fit-out.

"We regularly work with preferred sub contractors, checking their prices against other people who want to quote," says Brent. "They're familiar with the way we operate, so you can almost guarantee you're going to get a high-quality house for the best possible price."

Some PMs charge a percentage fee (around 10%–15%) according to the total value of the contract, while others prefer to work to a fixed price for their services. "We typically quote a single fee either for the total build or a watertight package, which we feel is a transparent way of doing it. With percentages there's no incentive for the PM to stick to the budget, as the more expensive it is the more money they make," says Brent. "If someone simply wants us to set them up with a package of quotations and a build programme, we can agree a price for that – and if they want any additional technical advice during the works we can do that on a daily or hourly rate."

Architect or designer

If you've used an architect or similar pro for the design stages of your scheme, you'll usually be given the option to enlist them for a wider package. This might include obtaining planning and Building Regulations approval, selecting a main contractor and managing the project.

The advantage of this route is that nobody will understand the design and structural plans better than your architect. They'll act as a lynchpin for your scheme, liaising with the builder on your behalf; dealing with technical issues and signing off work according to their understanding of your quality requirements. They're also likely to have a variety of beneficial contacts at their disposal, from planning consultants through to main contractors.

Architects tend to work on a percentage basis, with fees in the region of 12%–15%. The potential risk here is that they're incentivised to come up with a more complex scheme, thus pushing up your costs. But reputable practices – such as those affiliated with the Association of Self Build Architects – understand the importance of delivering good design within the client's budget.

If you're thinking of using a designer to manage your project, check they're fully versed in how to run a site and sequence trades. In some cases your architect might act as an overseer rather than a day-to-day project manager – leaving that side to the main contractor. This can still result in a hassle-free build, but the reduced level of service should be reflected in their fee.

Main contractor

This route involves engaging an experienced tradesman – usually a



general builder – to oversee the work. They'll take on a number of key roles, including: organising and paying trades; scheduling and signing off deliveries; dealing with building control; and ensuring health and safety on site. Pretty much the only thing they won't do is handle your budget. This is a largely hassle-free route, but most self-builders who go down this avenue will visit the site at least once a week to check on progress and the quality of work.

The usual method of finding a main contractor is to put the job out to tender by inviting firms or individuals to quote in response to your brief and design drawings (usually on a fixed fee basis). Provided you get detailed breakdowns in reply, you can then compare like-with-like. The contractor's margin will be in the order of 20%–30% on any

Above: Vince and BJ Abbott invested a lot of time and effort into their 300m² scheme, which cost £246,500 to construct, and attended courses on the process at the National Self Build & Renovation Centre. They took on a general builder to oversee all the procurement and labour – but BJ organised the lighting and plumbing. The main contract came to £351,900

Quick guide: Using a package company

Many self-builders choose to tie up a significant portion of their projects into one neat bundle. The package route allows you to pick and choose from a suite of services offered by a single company. As such, it's ideally suited to people who need a helping hand along the way – such as first timers or individuals who are too busy with home or working life to devote their full attention to a scheme.

The standard option is the design, materials supply and erection of the structural shell to watertight stage, ready for you to clad externally and fit out inside. Beyond that, you can opt for anything from simply a kit of materials for you or your contractors to assemble through to a professionally managed turnkey build, where you simply agree a design and move in once it's been completed.

One of the major advantages of using a package supplier is that you'll have peace of mind that they know their own structural system inside and out. So your bespoke house design should translate into a viable, relatively straightforward build. You'll also get access to the company's trusted trades (whether in-house or recommended) and support.

Choosing a package route can help with cashflow: prices are usually fixed, so you'll know exactly what you're spending on a major element of your project. As a general guide, the bundle you choose will come in at an equivalent cost to using a main contractor for that part of the work.

Above right: Liam and Helen Collins selected a structural design and shell package from Potton for their three-bedroom family home, before project managing the rest of the scheme themselves. The 350m² house cost £496,000, of which just under £74,000 was accounted for by the timber frame



Top tips: managing your own scheme

- Set a realistic budget (try www.self-build.co.uk/calculator for a ballpark figure) and reserve a contingency of at least 10% to cover unforeseen issues.
- Keep on top of cashflow and ensure bills are paid on time, so trades are incentivised to maintain a good pace on site. Remember that labour should be zero-rated for VAT on a self build, but you'll need to pay the tax on materials up front and reclaim it at the end of the project.
- Draw up a comprehensive schedule of works so you know when labour and materials will be required on site. Architects, main contractors, package companies or even builder's merchants can help with this.
- Avoid making design alterations during the build, as these will inevitably lead to delays and extra cost.
- Be good to your neighbours. Explain what you're planning, how long any disruption will last and make yourself available to deal with any issues – after all, you'll be living alongside them once the project's done.
- When selecting trades, take recommendations from friends, family or trusted contractors. Follow up on references and be sure to put robust contracts (such as the JCT versions, www.jcttd.co.uk) in place.
- Look to appoint a principal designer and contractor to take responsibility for health and safety on site; this will be the simplest route to ensuring you comply with the new construction design & management (CDM) regulations.
- Always take out site insurance. With any luck, you won't need to call on it – but it will safeguard your project against everything from fire damage through to injuries to contractors and visitors.
- Provide copies of the most up-to-date plans and drawings in the site office. This way you can be sure that everyone is working from the same hymn sheet.
- Keep a site diary to log deliveries, work progress and whether there are any issues with quality that need resolving – and stay on top of receipts and invoices.

The essential guide to self build

To lead you through the process of creating a bespoke home, this 10-part series will cover everything you need to know to carry out a successful project. Here's a list of what to expect in the coming months:

- 1 Steps to self build success
- 2 Budgets & finance
- 3 Finding the ideal location
- 4 Designing your dream home
- 5 Timber structural systems
- 6 Masonry structural systems
- 7 Heating options
- 8 Project management
- 9 Final checks
- 10 Troubleshooting



Above: Steve and Dory Morris took a truly hands-on route to their self build, even designing the house themselves using SketchUp (www.sketchup.com). They opted for a structural insulated panel system for the main shell, partly because their contact at SIPs Eco Panels (www.sipecopanels.co.uk) provided helpful design suggestions. The couple took up references for suppliers and trades, which paid dividends throughout the project. The only real issues came with the plasterers and renderers, who were messy and difficult to manage. "The other tradesmen were good as gold," says Steve. The 375m² house was completed for £376,000.

materials and labour they organise – which reflects the time and expertise they'll put into your scheme, as well as the discounts they've secured after many years in the trade. Payment terms will typically be monthly in arrears. Many self builders see this as money well spent to take the stress out of a project.

A sound contract is crucial for both sides: the more detail you give in terms of what you want and the tighter the budget is controlled, the more likely it is that you'll get the result you want. Using a plain English small works contract from the likes of the Joint Contracts Tribunal (JCT) and Federation of Master Builders (FMB) is a great place to start.

Self-managing a scheme

For some custom builders, organising the project is the one part of the process that seems eminently do-able – after all, many of us practice the basic skills required through our day jobs. If you can cope with stress, are an excellent organiser and a decent communicator, then you're half way there.

Running your own scheme has the potential to save you significant sums of money (up to 40% on labour and materials compared to some routes). It can also be incredibly rewarding to know you've made the difference on your own build. But don't fall into the trap of thinking it's going to be easy: you'll need to put a lot of time and commitment in if you're going to succeed, and there will be times when things don't go as planned. Expect regular site visits to check quality and

weekly meetings (ideally on a Monday) to plan the coming work and ensure everyone's on the same page.

If that all sounds a bit daunting, bear in mind many self builders run their own projects with no prior experience of the industry. The trick is to surround yourself with a good team throughout the design and construction phases. You'll be working with people who build houses all the time – so take advantage of their knowledge to help you move things forward on site. Coordinating who's where and when will be crucial: trades, materials and plant must arrive on time and in the correct order to ensure everything progresses on schedule. Your designer, suppliers and trades should be able to help you identify what's needed and how to negotiate issues such as lead times for materials.

If you want to top up your skills with a little insider knowledge, consider taking a project management course. "The two-day workshop I run at Potton's Self Build Academy gives a good overview of what you're letting yourself in for," says Brent. "One of the key things we talk about is finance – as well as setting your budget, arranging quotations, deciding who to use and other elements."

Good programming is vital, too. "Just because a bathroom suite isn't required until the end of the job, for instance, doesn't mean you should wait to choose it," says Brent. "Factors decided at the start of the process, such as where waste pipes go, must be informed by where you're going to fit showers, baths and other items. So always plan ahead."

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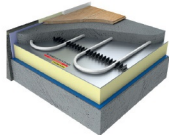
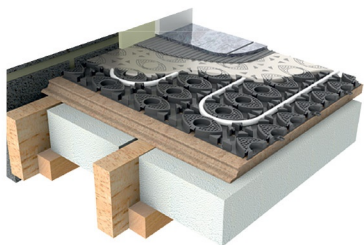


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Buyer's guide to flooring

Carpet, vinyl & natural coverings

From low-maintenance vinyl to lavish wool carpets, homeowners are spoilt for choice when it comes to soft floor coverings. **Rebecca Foster** investigates which option will work best for your home

Striking the balance between practicality and aesthetics can be a challenge – particularly when it comes to selecting the perfect flooring. In the October issue of *Build It* we looked at why robust options such as wood and stone are high on the wish lists of many self builders and renovators. But softer coverings can be just as appealing in terms of their looks, functionality and eco-credentials – plus they can often be very cost-effective.

Manmade materials such as vinyl and linoleum offer a high quality, affordable finish that allows you to inject colour and fun into your scheme, for example. If you're after something cosier, carpet or a natural fibre flooring could hold the answer. With a plethora of textures and hues available, there's something to suit every scheme. Here's what to consider when making your choice.

Linoleum & vinyl

Having fallen out of vogue with property owners in the 1990s, sheet floors such as linoleum and vinyl are making a comeback thanks to the development of high quality new products offering a

cost-effective alternative to wood and stone that's also softer underfoot.

Originally invented by the Victorians, linoleum is gaining popularity as eco-friendly materials become increasingly sought after. "People confuse linoleum and vinyl, but lino is made from natural elements including linseed oil, wood flour and pine resin," explains Helen Bridge from Sinclair Till. Available as tiles or in rolls, this product comes in an abundance of shades – great if you want to introduce a pop of colour to your home's interior on a low budget. Prices range from around £5 to £30 per m². It requires slightly more maintenance than vinyl (avoid harsh commercial cleaners) and must be sealed annually to provide moisture resistance. However, it offers a lifespan of 20 years or more, as the colour goes all the way through so it wears well.

Vinyl is a plastic comprised of ethylene and chlorine and, like lino, creates a fresh look and requires minimal upkeep. It's available in a wide range of colours and with high-quality imprints that mimic the look of natural timber and stone. "High grade vinyl tiles are incredibly durable, and have good

anti-slip properties. Unlike sheet products, these are rigid so they won't roll up at the edges, making them ideal for use in spaces with heavy footfall," explains Alice Dunbar, design consultant at Harvey Maria. Vinyl is fully waterproof, so it's an excellent choice for kitchens and bathrooms. Look for products with thick wear layers – around 0.7mm to 1mm – for best durability. Prices start from around £9 per m², but expect to pay £20 – £50 per m² for high quality versions.

If you want a bespoke result on a DIY basis, the easiest option will be to go for click-fit vinyl tiles. Laying sheet vinyl or lino is manageable for the competent DIYer – but it's important to ensure the base is clean, smooth and dry before you install the underlay. You should also allow for the fractional expansion of hessian-backed lino (the biggest risk occurs when it soaks up the moisture from the adhesive) by leaving a small expansion gap around the perimeter of the room.

A high-temperature adhesive is recommended if you're laying vinyl or lino over underfloor heating (UFH), and you should check with your

Above left: This parquet red oxide vinyl flooring, designed by Neisha Crosland, will inject some colour into your decorative scheme. £43 per m², Harvey Maria



NATURAL FIBRES

If you're after a floor covering that boasts solid eco-credentials, natural fibres provide a durable alternative to the traditional wool and nylon carpet. Plant-based materials such as seagrass, sisal, coir and jute start from around £15 per m². They have a unique, rustic appeal and are praised for their durability. "Sisal is one of the toughest fibres because of the pile's compact, strong strands. Seagrass is another hardwearing option because of its thick breadth and waxy coating," explains Liam Thomas from Naked Flooring.

Installation is different to that of a conventional carpet with a double-stick adhesive and gripper system always recommended. "We advise that natural carpet is acclimatised for 24 hours prior to fitting because it may shrink if subjected to vast changes in temperature," says Lorna Haigh from Alternative Flooring.

If you're laying a natural fibre carpet over UHF, use a covering with a fairly flat weave for best results. Seagrass is not ideal for this setup, as it's more prone to expansion and contraction than other materials.

Above: A made to measure rug, like this coir version from Alternative Flooring, can provide an attractive focal point and may be more economical than installing a natural carpet throughout

manufacturer that your system is suitable for this kind of floor finish. "Setting the heating to a higher temperature than the normal maximum recommendation of 27°C may affect the adhesive and the tiles themselves," says Alice. To get around this, you could install a closer network of UHF pipework. This should achieve the same heat output at a lower flow temperature, thereby protecting the surface.

Carpets

While hard floorings infuse decorative schemes with a timeless appeal, sometimes there's nothing better than the warm feeling of carpet. This plush surface is heat-retentive, naturally fire retardant and acoustically absorbent. It also helps to soften slips and falls, which is particularly good news if you

have little ones at home. An abundance of hues and patterns makes carpet a versatile choice to fit a variety of decorative schemes.

What carpet will suit each part of the house depends on how much footfall it receives. "In heavy traffic zones around the home, such as hallways, opt for a hardwearing practical range with a good pile weight and density. It pays dividends to invest in a high quality product for these areas," says David Cormack from Cormar Carpets.

The most durable options are generally comprised of at least 80% wool. Manmade alternatives tend to be more affordable, however, and polypropylene versions offer the advantage of being highly stain resistant. Expect to pay upwards of £25 per m² for a good quality product,

with top end options climbing as high as the £100 per m² mark.

Before splashing out on a lavish velvety floor covering, it's prudent to pick up some samples. "This allows you to feel the quality of the product, and we recommend laying test patches in various positions around the room to check whether you like it under different light conditions," advises Hilary Clements from Axminster Carpets.

When it comes to the fitting, your professional installer will usually carry out any prep work required to ensure the subfloor is smooth, clean and dry before the underlay goes down. "Gaps between the floor surface and skirting boards need to be sealed to avoid updraft soiling – the greyish lines that can appear at the perimeter of a carpet – so it's a job best left to the experts," explains Rupert Anton from the Carpet Foundation.

Contrary to popular belief, it is possible to lay carpet over UHF. However, the combined tog value of both underlay and carpet should not exceed 2.5. "As a general rule, double stick systems using adhesive and grippers are recommended to provide close contact between the floor, underlay and carpet. This allows for better transfer of warmth and avoids creating uneven heat pockets," says Natalie Littlehales from Brintons.

Maintenance-wise, regular vacuuming, approximately once or twice a week, will help preserve the quality of your carpet. However, most manufacturers recommend a professional clean every 12-18 months.



In heavy traffic areas a durable floor covering is essential. This handsome plaid carpet comprises a hardy blend of 80% wool and 20% nylon. **Boho Hamilton in tea rose, £63 per m², Ulster Carpets**

CONTACTS

Alternative Flooring 01264 335111 www.alternativeflooring.com **Axminster Carpets** 01297 32244 www.axminster-carpets.co.uk **Brintons** 01562 820000 www.brintons.co.uk **The Carpet Foundation** 01562 755568 www.carpetfoundation.com **Cormar Carpets** 01204 881234 www.cormarcarpets.co.uk **Harvey Maria** 0845 380 1231 www.harveymaria.co.uk **Naked Flooring Company** 0117 370 2762 www.nakedflooring.co.uk **Sinclair Tilt** 020 7792 6949 www.sinclairtilt.co.uk **Urbane Living** 020 7138 3838 www.urbaneliving.co.uk



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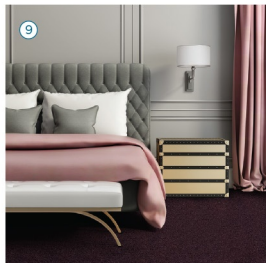
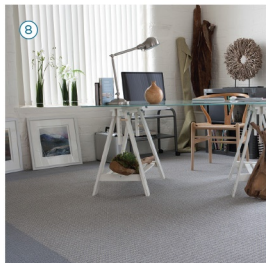
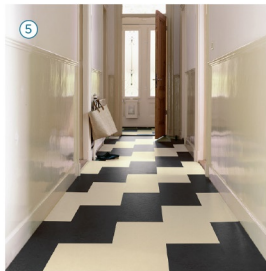
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How to build an eco home

Taking a fabric first approach to design and construction is the best route to achieving a comfortable, low-energy home for life.

Emily Brooks puts together the crucial components of a sustainable project

If we were to judge by the standards of a decade ago, all newly-constructed dwellings would be considered eco homes. Building Regulations have been tightened to ensure that the houses we create these days consume much less energy, while products and ideas that once seemed niche are now mainstream. Self builders have always been at the heart of the drive for better efficiency, going out of their way to outstrip the minimum requirements for sustainability and giving architects the opportunity to experiment with low-energy design.

Going fabric first

You may think an eco home needs a throng of solar panels on the roof – or maybe even a small-scale wind turbine – but sustainable building is actually more about going back-to-

basics. A fabric first approach prioritises design and construction that minimises the need for heating and cooling. This translates as passive solar design (harnessing the sun's energy); lots of insulation; high-performance windows and doors; and good overall air-tightness, so that no drafts can get in and no warm air can escape.

An eco home can utilise pretty much any construction method you care to name; the important thing to remember is that a well-insulated, airtight house relies not just on the efficiency of its components but on the quality of the workmanship behind it. The aim is to plug the gaps and reduce thermal bridging, where heat escapes from the interior via structural elements that cut across the tightly-sealed fabric. This occurs at weak spots such as junctions between walls, floors and roofs, and around windows and doors. It's not as easy as it sounds: "The main difficulty is in ensuring good site management and building standards; all the operatives working on your project have to be very aware of the ways that air-tightness needs to be achieved, and collaborate to make it happen," says Meredith Bowles of Mole Architects, a practice known for its ahead-of-the-curve approach to sustainable design.

Prefabricated houses by the likes of Baufritz or Hanse Haus offer a reliable method of achieving a sealed envelope, because large components are precision-made in a factory setting – but they're not the only route. Facit Homes, for example, manufactures a timber chassis on site with all the holes for electrical and plumbing outlets pre-cut. "There's nothing like a plumber or electrician drilling loads of holes in your airtight structure to make it not airtight any more," says Facit's managing director Bruce Bell. "But if a higher level of thought goes into it beforehand, that means a lower level of problem-solving on site, and less chance of a bodge job."

Right: Shortlisted for Best Eco Home in this year's *Build It* Awards, this Passivhaus-standard project was designed by Joseph Thurott Architects and built using a closed-panel timber frame system from Scotframe



IN FOCUS



Facit Homes' structural system sits somewhere between prefabrication and site-cut timber frame. The components are manufactured on your plot in a shipping-container-cum-mini-factory, with all the holes for plumbing and electrics cut before erection. This minimises the risk of poor workmanship and the

possibility of thermal breaks, leading to a reliably airtight envelope. In this Hertfordshire family home, high levels of insulation, solar shading and the use of building materials with a low embodied energy combine to create an extremely comfortable living environment and low bills.



Below: Set on a plot overlooking the Cambridgeshire Fens, Mole Architects' Black House is architect Meredith Bowles' own home and was designed as a model for low-energy housing. It has more glazing on its south side and less on the north, and its timber frame is filled with recycled, newspaper-based insulation

The gold standard of low-energy design is Passivhaus, which originated in Germany in the late 1980s. Your home can be certified compliant via testing and recognition from the Passivhaus Institute, or it can simply be built to achieve the standard, which means you've followed all the principles but stopped short of paying for the badge. It's not for everyone, not least because its stringent requirements will add to your build costs: it's up to you to balance your energy performance target versus how much you want to pay.

Various insulation materials are available, often with similar performance levels, so you may also want to consider the embodied carbon present in your chosen product (for more on this see overleaf). Facit Homes champions cellulose insulation, made from recycled newspaper, and EcoBead, an injected system of expanded polystyrene beads. Both of these have much lower embodied energy than some standard options, such as extruded polystyrene.

Passive solar design

In an ideal world, homes should have more glazing on their south side to maximise heat gain from the sun's rays, with external shading incorporated to prevent overheating in summer. If possible, you should also aim for fewer windows on the north side to minimise heat loss. "It's also necessary to store warmth once it's inside with insulation and by using concrete and other heavyweight materials as a heat sink," says Meredith. The real world can be very different. Urban plots might be overshadowed by trees and buildings, or the obvious view to capture on a rural site might face north. "If we can put in south-facing glazing then great, but we can't do that in every house," says Bruce. "If that happens, all you can do is concentrate on building a really good envelope."

Insulation

Part L of the Building Regulations suggest U-values should not exceed $0.18 \text{ W/m}^2\text{K}$ for external walls, and $0.13 \text{ W/m}^2\text{K}$ for the floor and roof. This sort of performance can only be achieved with decent levels of insulation. In general, it's a case of the more the better, although there is a caveat: "It's actually a law of diminishing returns," says Meredith. "Once you've put in about 300mm (or 200mm of high-grade insulation) the amount of improvement becomes far less per extra millimetre of thickness. At this point it's better to look at other aspects, such as window performance."



IN FOCUS



Architect Graham Bizley of Prewett Bizley Architects designed and built this certified Passivhaus in Somerset, replacing a 1920s bungalow. Thick, highly insulated timber-frame walls are clad with green oak boards (a look that is echoed inside with planed-oak walls), while deep roof overhangs provide shade in the summer and create covered outdoor space. The house has achieved very low U-values (0.12 W/m²K for the walls, 0.10 W/m²K for the roof, and 0.86 W/m²K for the windows), with an air-tightness rating of 0.57 air changes per hour – which is far ahead of Building Regulations requirements.

Windows & doors

Triple glazing is the Passivhaus standard, but the right double-glazed products can also offer high performance – although everything rests on their correct fitting to ensure air-tightness. Opt for frame materials that minimise thermal breaks (timber and aluminium composites are excellent), are filled with low-conductivity gas and have a low-E coating to minimise radiant heat loss from inside to out.

Air quality & ventilation

The comfortable quality of air in an eco home is hard to describe until you've experienced it. "A low-energy house doesn't have hot and cold areas closer or further away from a heat emitter; everywhere enjoys a good temperature," says Meredith. Modern, airtight homes usually need to be mechanically ventilated, and it makes sense to opt for systems that also extract the heat from exhaust air that would otherwise be lost, giving further energy savings.

Embodied carbon

Attention is turning to a more holistic, whole life definition of sustainability; one that takes into account not just how much energy you use once your home is built (as with Passivhaus) but the amount of carbon it takes to extract raw materials, process, manufacture and transport its components. "You can't just measure the CO₂ you're saving in terms of bills – you've got to account for the materials themselves," says Bruce. "We always choose products with low embodied energy if we can, but unfortunately it's an incredibly difficult subject to research." It's early days for this area, but if it's something that you'd like to integrate into your design considerations, the BRE's *Green Guide to Specification* is a good place to start. It rates materials according to their overall impact on the environment. You can find it online at www.bre.co.uk/greenguide.

QUICK GUIDE: RENEWABLE ENERGY

The fabric-first approach prioritises creating a well-insulated, airtight envelope ahead of fitting renewable technology. But it would be wrong to treat this tech as a complete afterthought, especially since some types can be intrusive to install and may affect your choice of heating system. Here are the most commonly-used products that will take your eco-credentials even further:

- Ground source heat pumps** This technology harnesses the earth's higher temperatures, capturing warmth via pipes laid in the ground, which is then fed through a heat exchanger. For every unit of electricity used to work the system, around four units of heat are captured and transferred.
- Air source heat pumps** These work on the same principle as GSHPs, but absorb heat from the outside air. Like GSHPs, ASHPs are part of the government's Renewable Heat Incentive (RHI); if you qualify, you'll receive a sum for every kilowatt hour of heat produced.
- Solar thermal** You can use the sun's rays to generate hot water and even provide space heating. A typical setup should provide most of your hot water in summer, but may not be compatible with all types of boiler. Solar thermal qualifies for RHI payments only when it's used solely for hot water.
- Solar PV** You can generate cheap electricity with solar photovoltaic (PV) panels. If you also sign up for the government's Feed-in Tariff (FIT) then you'll be paid for the electricity you produce, and you can sell any surplus back to the national grid.
- Biomass** Wood-fuelled heating systems burn pellets, chips, logs or briquettes – low-carbon fuels that are made even more sustainable if they are sourced locally. Biomass boilers also qualify for RHI payments.

CONTACTS

BRE 0333 321 8811 www.bre.co.uk **Facit Homes** 020 8986 0214 www.facit-homes.com **Joseph Thurratt Architects** 07817 517364 www.josephthurrattarchitects.com **Mole Architects** 01223 913012 www.molearchitects.co.uk **Prewett Bizley Architects** 01458 273778 www.prewettbizley.com **Scotframe** 01467 624440 www.scotframe.co.uk



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What's new at the National Self Build & Renovation Centre?



The NSBRC is an invaluable resource for anyone tackling a major project. Managing director **Harvey Fremlin** reveals the latest happenings at this home building hub

A unique and inspiring resource at the heart of the UK's home building community, The National Self Build & Renovation Centre (NSBRC) is the only permanent venue for self builders, renovators and home improvers.

A visit to the NSBRC provides you with the knowledge and support you need to make informed decisions at every step of your project. Since opening our doors in January 2007, almost a quarter of a million people have visited the Centre seeking free, independent building advice. The moment you arrive, you'll find a warm welcome from our dedicated and friendly team. The helpdesk is staffed by the Centre's own experts, ready to offer their experience and advice. Whether you are considering a plot location, how to build your home or energy efficiency issues – they can help.

You'll find life-size exhibits in our educational zones that graphically demonstrate the many options available. These are complimented by the latest products and technologies on display in the Trade Village, which features thousands of choices from over 200 exhibitors.

Our aim is to inspire, educate and provide impartial advice for our visitors so they can make well informed decisions during their projects. An important part of your visit is

exploring the huge range of companies available to help you during your build, and with our unique product scanning system, you are in control of your own information requests in a pleasant, hassle-free environment.

Latest news from the Centre

NSBRC now employee-owned

This has been an exciting year for the NSBRC as we became an employee-owned business, with every team member having a genuine sense of ownership and a stake in its success. As front of house manager, Louise Jarney, says: "We don't see ourselves as working for the National Self Build & Renovation Centre; we are the National Self Build & Renovation Centre! Coming to work each morning is exciting, and we all feel the same passion for seeing the company thrive and are proud to be a part of its success. We are all working towards the same goal of delivering irresistible customer service."

New courses launched

Having successfully run our regular three-day course on self build for over seven years, we've also decided to launch two additional educational days; one on project management; and the other on heat and energy. These comprehensive expert-led sessions have been created specifically for self builders and renovators. A place on either course costs £150 and includes comprehensive notes, a buffet lunch and refreshments.



Open six days a week (Tuesday to Sunday) the NSBRC is easy to get to via Junction 16 of the M4, near Swindon, with plenty of free parking available.

For more information or to book free tickets to the latest show please call the NSBRC team on **01793 847400** or visit **www.nsbrc.co.uk**

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Latest partners for your project

New exhibitors are always joining the Centre and the below is just a small selection of companies who have begun to display their products over the last month:



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winecellarpod.com



Wooden Stairs
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high-quality wooden stairs
woodenstairs.co.uk

The Big Green Home Show

Your key to creating a greener home



The Big Green Home Show returns for its seventh year from Friday 23rd to Sunday 25th October 2015. Get access to all the advice you need to make a success of your project with a feature-packed

programme of expert speakers, live demonstrations, guided show home tours, real-life experiences and impartial consultations.

Don't miss out

We all want to create more efficient and sustainable homes, but knowing where to start and how to make the right choices for your project can be a puzzle. Whether you're looking to improve your current home through insulation upgrades and installing renewable energy sources, or you are contemplating putting sustainable



products at the heart of your self build or refurbishment project, there are so many options. The experts, seminars and live demonstrations at The Big Green Home Show will help you decide what's best for you and your home.

Renowned for the quality of its expert presentations and relaxed, open approach, the NSBRC has brought together an unrivalled line-up of experts for The Big Green Home Show. You'll be able to book one-on-one sessions with eco consultants, architects, project managers, designers and planners – all of them are on hand to offer impartial guidance and advice. If you're planning a major project or are simply after a second opinion before making a key purchase, be sure to bring your plans and sketches along to the show and take advantage of these free face-to-face consultations.

Show highlights for *Build It* readers



Three live theatres

The show includes a wide range of seminars each day, exploring everything from budgeting through to plot finding, planning news and the latest Building Regulations.

The **Build It Theatre** features keynote speakers discussing current green developments, from government incentives to the latest sustainable products and materials, plus talks from finance specialists BuildStore and property expert Kate Faulkner.

The Sovereign Theatre offers presentations from dozens of exhibitors showcasing the latest technologies and build systems and sharing their top tips, while each day products and tech will be put through their paces in the Live Demonstrate Arena.



Piers Taylor, architect & TV presenter

Piers Taylor is a chartered architect, former studio master at the Architectural Association and design fellow at the University of Cambridge. He is the founder of Invisible Studio, an innovative award-winning architectural practice that operates through collaboration and aims to achieve the extraordinary. But most of you will

know him as the co-presenter of hit BBC2 series *The House that £100k Built*.

Piers will be at The Big Green Home Show on Saturday 24th October to meet visitors and offer his advice on real-life projects. He'll be delivering the headline presentation at 1pm.



Kate Faulkner & The Property Clinic

One of the UK's leading property experts, Kate Faulkner will be at the show with her Property Clinic, featuring a plethora of industry experts and associations on-hand to offer free advice to help you with your project.

Kate provides independent and up-to-date advice on how to buy, sell, rent, invest, renovate, maintain and build property. She does this via a free online service, Propertychecklists.co.uk, as well as a paid-for advice service that includes comprehensive information packs. Kate regularly appears on BBC Breakfast News, Your Money, GMTV, ITV and Radio 4 – among others.

**The Big Green Home Show,
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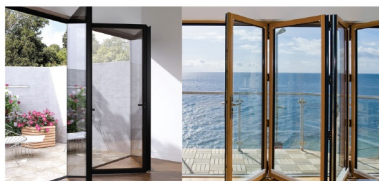
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Tilt-and-turn windows

Ifeoluwa Adedeji finds out why these dual-opening units could be the best glazing solution for your home

materials
spotlight:

As the name suggests, tilt-and-turn windows have two opening mechanisms, offering more functionality than standard casement versions. Regular-style windows are generally side hung (hinges on the left or right), or top hung (hinges at the top) – but tilt-and-turn versions give the convenience of both.

How do they work?

These units have a clever multi-point hinge mechanism. Turn the handle to a 180° angle and the sash tips inwards, securing the unit on its lower hinges and opening it at the top fractionally in order to allow for ventilation. You can also turn the handle to 90° to make the window hinge on its side, opening it wider and inwards like a door. Different manufacturers will offer varying configurations and this mechanism can even be incorporated into single or double balcony doors.

Some units feature one handle while others have three; one at each side to open out wide and one at the top or bottom to operate the tilting function. They can sometimes be combined with a restrictor device to limit the aperture; a great safety feature for upper storeys.

Why should I install them in my home?

The main benefit these products offer is secure and safe ventilation when in the tilted position. This location can be fixed so neither intruders nor rain can enter the property. When they are opened outwards, however, they give occupants easy cleaning access and potentially a means of emergency egress, plus even more ventilation.

Because they're available in a range of shapes and sizes, as well as in standard or bespoke designs, prices can vary considerably. A small 800mm wide, 1,200mm high opening version from Duration Windows, for instance, will start at around £363. Tilt-and-turn units can be up to 2,300mm high and 800mm wide or more. If the unit being installed doubles up as a route of escape from the building in an emergency, then its width and height

should be no less than 450mm and the full opening a minimum of 0.33m².

Performance & features

These products can easily exceed Building Regulations standards, which require any window that's fitted on new schemes to have a maximum U-value (a measure of thermal energy loss) of 2.0 W/m²K; or 1.6 W/m²K for replacement units. Note that if you're updating older fenestration, this may feature trickle vents. If so, the new units should probably have them, too, to maintain air quality and avoid condensation and damp. Ask your installer for advice.



Above: This tilt-and-turn unit from George Barnsdale features a trickle vent and can be custom made to suit your scheme.

Right: Lomax + Wood contemporary tilt-and-turn, side hung casements are available either double or triple glazed

Things to consider

Because these windows open inwards (the opposite of standard casements), blinds or curtains can inhibit them from swinging out fully if the fittings are not drawn first. The same goes for anything that's placed on the sill. The units are also usually quite large, so the thickness of the frame will be bigger and heavier than traditional casements. Some people find this makes tilt-and-turn units look bulky in comparison – although versions without glazing bars should allow in plenty of natural light.



This triple glazed, factory finished tilt-and-turn window, £375 from Living Wood, has an impressive U-value of 0.88W/m²K



CONTACTS

Duration Windows 01268 681612
www.duration.co.uk Everest 0800

144 8113 www.everest.co.uk George Barnsdale Timber
Windows & Doors 01775 823000 www.georgebarnsdale.co.uk
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First *impression*

A well-made front door that fits with the style of your house will offer fantastic kerb appeal, says **Emily Brooks**

Your front door sets the tone for your whole home. It should fit with the overall style of the architecture as well as being secure, highly durable and energy efficient. "It's the main focus of a house's approach, so it's essential to get this element right," says Elizabeth Assaf from Urban Front. "A solid unit can provide good service for many years, improving the performance of your building and keeping heat in, not to mention underpinning your home's security. It will also add a little bit of wow factor and personality to the architecture."

Getting the style right

The fashion is for oversized doors with matching glazed side panels and fanlights (which sit above the door). These dramatic designs make a big impact, which is offset by their minimal detailing: plain planked surfaces; opaque glass; slim ironmongery; and hinge-free pivot opening. "Doors are

Below: At 70mm thick, with triple weather seals, SafeChoice's Meridian composite door has low U-values (0.91 W/m²K for the glazed version and 0.89 W/m²K for unglazed). Pictured is the Oak model in Chartwell Green, which costs from £1,500 including fitting



Oversized entrances set into lots of glazing is the prevailing trend for contemporary homes. These Rondo E80 double doors, £12,576 from Urban Front, offer 11 handle options



getting larger," says Elizabeth. "We now offer models up to 3.2m tall, which people love – but to be honest, most houses can't take an oversized version, so the most popular at the moment is a 2.4m by 1.2m unit, on a pivot."

A modern, minimal design can also work on a smartly updated period property, but in most other cases it's best to stick with a closer match with the original architecture. Think



Above: The Solidor Milano from Quickslide is a composite product with a timber core. Shown in grey (RAL 7016), prices start from £1,236 including handle (but not the side panel)

un glazed, painted, panelled doors for Georgian and early Victorian houses, moving onto increasingly ornate glazed examples (often with stained glass) for later Victorian and Edwardian properties. Farmhouses and rural conversions tend to suit unpainted wood examples that favour craftsmanship over decoration.

Core decisions

"Always choose materials carefully," says Paul Pennick, timber product manager at MKM Building Supplies.

THE FINISHING TOUCHES

- When choosing ironmongery to complete the look, think about what is appropriate to the size and scale of the door: as a general rule, the less ornamental the entrance, the simpler the handles, letterbox and knocker should be. Long, vertical bar handles have become a popular choice for contemporary doors, and can nicely echo a slim vertical strip of glazing.
- If you have decided to forego a letterbox (perhaps for energy efficiency reasons), look for a smart, matching modern postbox instead, such as those made by RK Door Systems.
- If your door isn't recessed, consider a glazed canopy and/or side fascia (Hormann makes complementary designs for its doors, for example) to give protection from the elements while you're digging around for your keys.
- If you're building a traditional-style house of sufficient scale and grandeur, frame the door with a grand stone portico. Companies such as Haddonstone and Thorvorton Stone will make products to order in a variety of styles.

"Ensure the unit suits the function: how will it weather, for example, and which direction does it face?" Also, always follow the manufacturer's installation guidelines to ensure your guarantee remains valid."

Composite doors are taking over from straight PVCu as the standard high-street offering, mostly because they give great thermal performance and security at a good price (from around £400). They're made from a steel-reinforced PVCu frame with a wood or foam core, wrapped in a layer of plastic (usually with a woodgrain appearance) for weatherproofing. "Wood cores give greater solidity security, but foam possibly edges in front in the thermal race," says Tom Swallow, sales and marketing director at Quickslide. "Over the last year low-density wood composite doors have entered the market, which again helps with the thermal aspect." Another advantage over PVCu-only versions is the wide variety of colour options (Quickslide even does a RAL hue-matching service). Make sure the plastic outer layer has a through-colour rather than just a coating, so that any wear and tear will be almost invisible.

Solid wood doors (from around £500) feel heavy and authentic but can be prone to warping and bowing, especially on exposed sites. Look for kiln-dried products and buy from a specialist craftsman who knows which timbers to work with for maximum stability. Engineered/laminated timber doors are sometimes also described as solid wood and their layered construction gives them more stability.

Standard veneer products have a thin layer of high-quality wood over a softwood core (confered they are sometimes also referred to as engineered). Prices can start from £200 for oak, but you get what you pay for. Two indicators of good quality are the veneer thickness (it should be around 3mm, and certainly no less than 1mm) and an extra insulating layer to improve U-values. The highest quality veneer doors are steel-reinforced for strength and stability and packed full of insulation for great energy efficiency.

For example, Urban Front's Passivhaus-standard door has a U-value of 0.8 W/m²K – and all its designs have a 10mm hardwood veneer.

Steel and aluminium are also top-of-the-range options, with the latter being the more premium product as it's lighter and stronger. Kloeber has just introduced aluminium doors in ready-made sizes (the FunkyFront Euro range), so they are becoming more affordable. They can be powder-coated in any colour and their insulating foam core ensures they make a good contribution to efficiency (Hormann's ThermoCarbon door has a U-value of 0.47W/m²K). Expect to pay £1,200 or more for a steel version and at least £1,500 for aluminium.

Secure your home

Insurers usually specify that at least one lock conforms to British Standard BS 3621. For additional protection, look for products with Secured by Design accreditation, which takes into account not just the lock but the quality of the hinges, the materials themselves and the strength of the glass.

Top-end manufacturers offer lots of seductive upgrades to their products for increased security or ease of entry. These include motorised door releases, which operate at the touch of a button on a fob or smartphone, and fingerprint entry (great if you or your teenagers are always losing the keys).

Glazing options

Plain, planked timber doors can work with many architectural styles because they are so simple in their design, but think about what's happening on the inside of the house, too: do you need glass panes to boost light levels in the hallway? Decorative options, such as stained glass, can beautifully enhance period features in an older property. On a more contemporary build, meanwhile, side panes and fanlights allow you to play around with design details, such as having an opaque pane with your house number or name picked out in clear glass. As a rule, any glazing in the front door or to the side needs to be made from safety glass.

CONTACTS

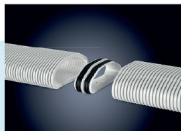
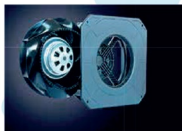
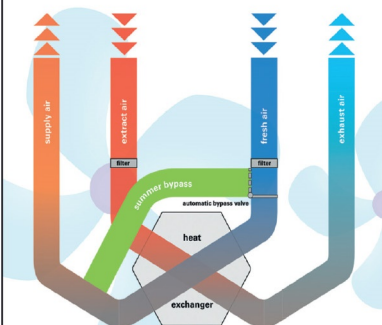
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Jeld-Wen's Chester door in white oak veneer, part of the Knightsbridge range, is a simple modern tongue-and-groove design with four glazed apertures. From £481 for a 1,981mm x 838mm door, www.jeld-wen.co.uk

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What are SIPs?

Lightweight, quick to build and thermally efficient, structural insulated panels are moving further into the mainstream as a construction method. **Mike Hardwick** explains their appeal



Conventional building techniques, such as masonry and timber frame, still account for something like 70% of all self builds, but modern methods of construction (MMC) are constantly evolving and improving. In particular, new timber frame systems have advanced at some speed, gaining popularity among those looking for super-fast construction times, good air-tightness and high levels of insulation. One such development is structural insulated panels (SIPs), which have become a firm favourite in the self build world.

SIPs have actually been around for some time. The first SIPs house was

constructed in the USA in the 1930s, but it wasn't until the 1970s that the idea really started gaining traction. In the UK, they are still something of a novelty in mainstream building but, as ever, self builders have been early adopters having recognised the many advantages of using this system.

What goes into a SIP?

In essence, structural insulated panels are a composite method of construction. The walling element is a sandwich of structural board and rigid foam insulation. The most common SIPs materials used in this country are oriented strandboard (OSB) – which is like chipboard but much

stronger because it uses flakes of wood rather than sawdust – and polyisocyanurate (PIR) foam. The latter is the same stuff that goes into the rigid foil-backed insulation boards commonly used in construction.

There are variations on the theme: you can find panels made of cement particle board or plywood and some filled with expanded polystyrene (EPS) or other insulants. The biggest manufacturer of OSB/PIR versions in the UK is Kingspan, and its TEK system is used by many SIPs companies. This is supplied as blank panels up to 1,220mm wide and 7,500mm long with a thickness of 142mm. The firm has also recently

Above: Build It readers the Coopers used the Kingspan TEK structural insulated panel system for their project in Northampton. The two-bedroom, 300m² house features a curved fibreglass roof and was completed for £380,000. Below: If you opt to fit a SIPs roof, you get an instant, truss-free habitable space in the attic, as with this SIPs@Clays project



launched a 172mm-thick version that will comply with anything Building Regulations might throw at us in the foreseeable future, without the need for additional insulation layers.

SIPs can be used to form a building's external and internal supporting walls, roof and floor structure. The panels resemble an oversized ice cream wafer sandwich (if you remember them), with the ice cream (the insulation) bit rebated by a couple of inches. When they are fitted together, this rebate is filled with an insert of similar construction (called a spline) to give a fixing for the screws to bite into, while ensuring that there are no cold bridges or gaps for air to leak through. The bigger panels are heavy to move and the largest sections will need a crane to manoeuvre them into position.

What are the advantages of this system?

There are several benefits to using SIPs. For instance, once the panels arrive on site, they are quick to erect and don't need particularly high skill levels to put together. The whole shell

can be assembled in a week or so, and once it's covered in a breathable membrane work can start on the internal first fix at the same time as the exterior is being clad. You will need to have the ground floor slab ready and built to the required quality to accept the shell, as there is relatively little scope for adjustment of the frame itself – a tolerance of $\pm 10\text{mm}$ is about all you will be allowed, so accuracy is key.

There's next to zero waste with this system because all the fabrication is done off site. What's more, since the panels are designed and cut to shape using computer-aided design and manufacturing techniques, the quality of materials and fit is excellent. Because the panels are of composite construction, they are comparatively thin – so a 142mm wide SIP can end up being part of a finished wall just 225mm thick, but with a U-value of $0.2\text{ W/m}^2\text{K}$ or better. By comparison, to achieve that level of performance with a standard open-panel timber frame wall, you would need a total depth of 390mm. This is a real boon on smaller projects because it means

the amount of usable internal floor space is maximised. As a bonus, if you opt to fit a SIPs roof and have suitable headroom you get an instant habitable zone in the attic with no awkward trusses to worry about.

However, the real benefit of SIPs – and the factor that attracts so many self-builders to the system – is the combination of superb thermal performance and air-tightness, and the low running costs that go with achieving these. Using the new 172mm TEK system, the worst-case scenario is that you might achieve a U-value of $0.16\text{ W/m}^2\text{K}$. Because the panels are built to a relatively close tolerance, air-tightness levels of 1.0 air changes per hour at 50 Pascals (ACH50) can be easily achieved. With little extra effort you can get down to the 0.6 ACH50 level demanded by the ultra-strict energy-meisters from the Passivhaus Institute. To give you an idea of how good this is, the worst acceptable air permeability level currently acceptable by Building Regulations is 10 ACH50, so it's considerably better than the regs.

Another advantage is that SIPs create a much lighter structure than masonry, which can allow you to use simpler foundations – even if soil conditions are tricky. Although it's not particularly common, you can go as high as four storeys with SIPs, so there are plenty of design options.

What are the drawbacks?

You won't be surprised to know that you can expect to pay a little more for a SIPs system compared to standard timber frame or masonry. The difference isn't excessive, though, and there should be an offset from lower labour costs because it's so quick to erect. It's typical to spend 10-15% more on the materials, and I'd expect to be paying anything from £60,000 to £70,000 for a SIPs package to construct the shell of a 250m² house.

There's not much scope to change your mind once the design has been agreed. Once the machines start rolling, alterations can be expensive and time consuming, so do all your thinking at the early stages and freeze the plans once you are happy with them. Designers tend to outnumber the joiners in a SIPs company, so there will be no shortage of advice to make sure you have got it right.

Right and below: This project by SIPCo uses structural insulated panels for the internal and external walls, in conjunction with glulam and steel beams. The panels were delivered to site with pre-cut window and door apertures



CLOSER LOOK

Glosford SIPs supplied the structural shell for this stone-clad, four-bedroom home in the Cotswolds. Fitting in with the local vernacular but with a modern twist, the design by Eastabrook Architects (www.eastabrookarchitects.co.uk) features stone dressings, steeply pitched roof lines and dormer windows on the outside. Internally there are large open-plan rooms and vaulted ceilings. A particular focal point is the elliptical stone staircase, which required a concrete suspended floor structure and masonry support incorporated into the SIPs shell.

Homeowner Bill Nesbitt chose the system for its air-tightness, low U-values and quick build times. Glosford was on site for 10 days erecting the frame, which uses 142mm Kingspan TEK panels.



Because SIPs is a panel-based system, it lends itself primarily to conventional and contemporary builds. Achieving curves, while not impossible, isn't easy. It's also not recommended for damp or humid environments, such as basements or cellars. Furthermore, running services takes some thought. Wiring and small diameter pipes can be hidden behind (or in) plasterboard, but larger elements, such as ventilation ducting, will either have to be boxed in at completion or run through open web joists at ceiling level. Acoustic performance is similar to timber frame. You may wish to improve on this aspect by double-skinning plasterboard and using additional insulation – but it will be hard to match traditional masonry for quietness.

Further considerations

SIPs has found a market as a partner for some of the more traditional timber framing options. For example, it's increasingly difficult to get oak frame houses through the SAP calculations because of air-tightness and cold bridging issues. To work around this, some builds have ended up using an internal oak frame for the traditional look and wow factor, which is then encapsulated in an external shell of SIPs to give the necessary energy efficiency and performance – a system that, while not cheap to build, seems to work very well.

Once completed, there's no obvious way of detecting that SIPs panels have been installed because just about any external cladding option can be used. What's more, internally

the panels are dry lined using plasterboard, as with any timber-frame house. The sealed nature of the finished shell means you'll need to consider installing a mechanical ventilation system to supply fresh air.

Quite rightly, SIPs has come of age and joined the mainstream as a modern method of construction. If you're aiming to build an efficient home with low running costs, then you should consider this structural system as a serious contender.

MIKE HARDWICK



Mike Hardwick is a self build consultant and project management specialist. He is NaCSBA's self build representative. He has first-hand experience of the process involved, and helps to deliver a three-day self build course at Swindon's NSBRC (www.nsbrc.co.uk)

CONTACTS

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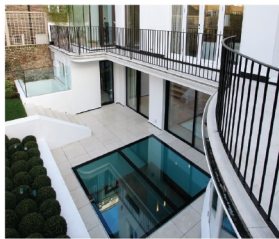
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Looking for a bright idea to transform your new living space?

Chris Bates explains how to get the most out of rooflights



& Roof windows natural light

With good design, top-down lighting can be a stunning architectural feature that supports the way you interact with your living environment, while simultaneously capturing ever-changing views of the sky and trees above. Add in the fact that sunshine filtered in from above can be around 20% brighter than that through a conventional window or glazed door, and it's easy to see why rooflights can be fantastic additions to a wide variety of projects – especially where standard glazing doesn't fit the bill.

When do rooflights make sense?

For straightforward loft conversions, these overhead windows offer a quick and cost-effective route to providing high-quality brightness. The alternative – adding dormers – is far more disruptive. Rooflights also tend to have less visual impact on the original architecture and give rise to fewer issues with privacy and

overlooking. In most cases they are allowed as permitted development (PD), which means you won't usually need to secure specific consent to install them – although there are a few caveats and exceptions (PD rights are withdrawn for listed buildings, for example). For more advice see www.planningportal.gov.uk.

The same logic that applies to attic renovations can be put to use on other projects. A one-and-a-half storey self build might have a mix of dormers and rooflights to bring brightness into the upper level or add drama to vaulted spaces, for instance. And for barn conversions or similar projects, where adding new conventional openings isn't likely to prove popular with the planners, fitting glazed units overhead may be the only way to gain new sources of daylight.

There are plenty more scenarios where rooflights can make a positive contribution to your living space – some less obvious than others. One example would be when adding a large ground-floor extension, such as an open-plan kitchen-diner. You might think that inserting more standard windows or investing in a curtain wall of sliding or bifold doors will automatically flood the space with natural brightness; but in fact horizontal light will only penetrate so far. So in large zones, you run the risk of creating dark areas deeper into the building. Fitting roof glazing further into the extension, for example at the junction between the existing house and the new addition, will counteract this effect and reduce your need for artificial lighting. You might also want to consider

Above and inset: This basement extension features walk-on frameless rooflights by IQ Glass. Note the structural glass fin that preserves the clean look in place of a standard frame

BESPOKE ROOFLIGHTS

For the ultimate in seamless design, you could go for architectural glazing. Viewed from the inside, the unit appears to be pure glass with no supports in sight. Suppliers such as IQ Glass and Sunsquare can create anything from single skylights through to entire roofs with this sleek, frameless look – which makes a fabulous statement in a contemporary space. Bear in



This extension includes a 3,780mm-long bespoke skylight that helps to throw light deeper into the kitchen. The Aero Electric unit by Sunsquare is operated by remote and has a rain sensor for peace of mind

mind that, to provide sufficient strength, the pane thickness required increases disproportionately as the unit gets larger. It can therefore be cheaper to install, say, three 1m x 2m units rather than one unbroken run of 6m.

Another option is walk-on structural glazing, which could be a fixed pane as part of a roof balcony or even a section of pavement in the back garden above a basement extension – allowing sunshine to penetrate down into what would otherwise be a dark zone. It's also possible to use walk-on floorlights internally to borrow light from upper storeys.

Below right: Keylite's centre-pivot roof windows are available with a wipe-clean polyurethane paint coating, which has moisture-resistant qualities that make it ideal for use in bathrooms, kitchens and other humid spaces

rooflights for side extensions – where normal windows wouldn't see much sunshine – and above staircases or other parts of the house that don't tend to receive bountiful daylight.

What are the main types?

Standard in-plane units are designed to sit flush with a pitched covering. These are sold as pre-assembled, factory-manufactured products – much like conventional windows. The frames are usually made of either engineered timber or steel and, depending on the manufacturer and application, the units can be supplied with a flashing kit.

Timber versions are typically given a clear protective finish internally for a warm, characterful result – although white-painted frames are becoming more popular. They're cost-effective, with prices starting from around £300 for a 550mm x 780mm centre-pivot unit

and corresponding tile flashing from Keylite Roof Windows (not including installation and any accessories).

Steel types are mainly aimed at the heritage homes market, as their slender sightlines replicate the look of traditional designs. These are premium products – Clement's Conservation rooflight starts from £370 for a 590mm x 752mm fixed version (not including flashing, installation and accessories). Some examples, such as Neo from The Rooflight Company, offer a fully glazed pane for a sleek modern look.

The minimum pitch for standard rooflights is around 15°–20° (check with the manufacturer to ensure your unit suits the application). Any shallower and you'll need a product designed for flat roofs. This type requires an upstand to prevent moisture ingress. They're available in both fixed and opening varieties – although larger units are heavy so aren't likely to be operable.

Are they energy efficient?

While planning permission isn't normally required for rooflight installations, you'll always need to comply with Building Regulations. A key consideration is thermal performance. This is covered by Part L of the regs, which stipulates that roof windows should have a maximum U-value (a measure of heat loss where lower numbers indicate better performance) of 1.6W/m²K for renovation projects, and 2.0W/m²K for new builds (across the entire unit). Standard double-glazed products easily comply, with typical U-values of around 1.4W/m²K. Better performance can be achieved with triple glazing, which can reach around 1.0W/m²K.

As roof windows let in more natural light, they also allow more of the sun's warmth to enter the house. This means you may need to consider the potential for solar gain in summer, which can cause overheating and is a particular risk for larger installations. Fitting blinds is the low-tech solution (some products feature integrated versions, with a black-out option to banish morning sun from bedrooms) but you may need to go for glazing with a solar control coating.

One area where these windows have fallen down in the past is at the junction

between the unit and the rafters, which can be a weak spot thermally. Some manufacturers now offer thermal collars for their units to combat this issue. For easy fitting, Keylite's Futurethru range has an integrated expanding version.

Any other considerations?

Most rooflights are located out of easy reach, which can make them difficult to operate and maintain. The low-tech route to opening and closing is to use a pole, but these days you can switch to smart controls. Fakro's FTP-V Z-Wave centre-pivot windows come pre-fitted with motors that allow you to open and close the pane, as well as the blinds, from a wall-mounted switch or a remote. The range even includes a rain sensor that automatically closes the unit if it detects bad weather.

Provided they're properly specified, top- and side-hung rooflights can double up as emergency fire escape should it be needed (this is a common requirement for loft conversions). For improved safety and security, consider opting for safety glass. Toughened panes are often a good choice on the external side, as they're difficult to break – even if struck with enough force, they'll smash into tiny, harmless pieces rather than large shards. Laminated glass is often stipulated for the internal pane, as it will hold together – rather than splitting and falling – should it get broken.

**CONTACTS**

Canitex 020 8003 3793 www.canitex.co.uk **Clement Roof Windows** 01428 643393 www.clementconservationrooflights.co.uk **EOS** 020 8462 3557 www.eosrooflights.co.uk **Fakro** 01283 554755 www.fakro.co.uk **IQ Glass** 01494 722880 www.iglassuk.com **Keylite** 01283 200150 www.keyliteroofwindows.co.uk **Sunsquare** 01284 723377 www.sunsquare.co.uk **The Rooflight Company** 01993 833155 www.therooflightcompany.co.uk

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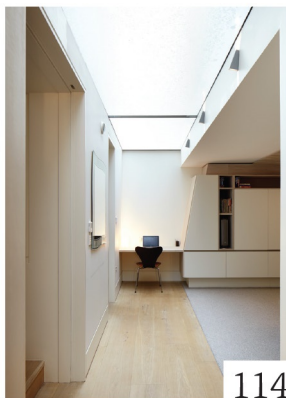
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THE Build It HOUSE

PROJECT: Four-bedroom family home
CONSTRUCTION METHOD: Timber frame
NUMBER OF STOREYS: Two (with potential for a loft conversion)
HOUSE SIZE: 155m² (internal floorspace)
BUILD BUDGET: £240,000
COST PER M²: £1,548



13: Bathrooms, floors & tiling

Our virtual project is ready for the finishing touches. **Tim Doherty** sets out the specification and costs for the remaining elements of the internal fit-out

This marks the last in our individual cost articles on *The Build It House*. With the bathrooms, flooring and tiling in place, all that remains for our model self build project is to clear out the usual construction work detritus and move the furniture in. There's still one final piece of the puzzle to come, however, as next month we'll be taking a look back over the entire scheme and assessing the overall costs.

There's a huge array of suppliers competing for the lucrative internal fit-out market; and you'll find the bathroom industry is a pretty crowded sector. Many products are imported via complex supply chains and manufactured abroad. Some of these can be of perfectly good quality – others less so. When picking your new suite, be careful not to get sucked in by flashy marketing photography. Anything can be made to look good in a showroom or studio. The reliability of the brand and the strength of the product warranties are key considerations

that will lead you towards good quality products over poor copies. Taps, shower valves and bathroom wastes are particularly prone to failure as they include moving parts that a home's occupants will use daily – so they inevitably have to cope with significant wear and tear.

With this in mind, our virtual self builders want to ensure they have access to a reliable after-sales service and an easy fallback for routine maintenance. We've therefore selected products that offer a combination of good looks, brand reputation (the likes of Roca would fit nicely with our budget) and easy upkeep.

Space heating in the bathroom, ensuite and WC will be provided by towel rails, the costs for which (three units for a total of £360) were accounted for in the June edition, when we looked at the plumbing and central heating budget. In terms of extracting stale air, these zones will be principally dealt with by the whole-house mechanical ventilation and heat recovery (MVHR) system.

AN OVERVIEW OF THE BUILD IT HOUSE

This virtual project intends to provide a reliable model that self builders can refer back to when planning their own home. We've based the project around a young family, but it's flexible enough to be shaped to other schemes. The accompanying articles are an in-depth guide to the processes and materials that would go into our benchmark home.

We've set a construction budget of £240,000 for *The Build It House* (excluding design fees and preliminaries) on the basis that our self builders have decided to project manage the scheme themselves. This means they'll be hiring in subcontractors, as well as dealing with certain suppliers directly. Some trades will bring their own materials, while some products will be specifically obtained on a supply-and-fit basis – but our self builders will not undertake any of the physical site work themselves. For advice on how different management options affect costs, visit www.self-build.co.uk/which-building-route.

Our budget exercise works on gross internal area (GIA) rather than gross external area (GEA). It's important to clarify this with suppliers, as the difference between the two can be quite staggering. Our two-storey model house, for example, has a GIA of 155m² (the figure we'll be using for costing purposes). But the GEA would be at least 180m² after accounting for the thickness of the walls. The GIA rate for *The Build It House* works out at £1,548 per m², while the GEA rate is £1,333 per m². It's always wise to include a contingency to cope with unforeseen issues or delays, normally around 10%-15% (so our maximum budget for the project is £276,000).

The Build It House was developed by the magazine's editorial team and designed by Opinder Liddar from Lapid Architects. Log on to www.lapidarchitects.co.uk for more about this award-winning practice.



What is *The Build It House*?

This virtual project is intended as a benchmark to help you better understand the self build process and get a realistic grip on what it costs to create your own home



Fitted furniture can be a sensible option for bathroom storage. Fusion basin and vanity unit, £359, www.purebathroomcollection.co.uk



Main bathroom

One of the key considerations for this space is water consumption, which is governed by Part G of the Building Regulations. The design target for new dwellings is based upon a usage level of up to 125 litres per person, per day. The now-defunct Code for Sustainable Homes detailed even more stringent requirements – and the industry responded by capping shower flow rates, limiting bath capacities and introducing efficient low-flush WCs. Most manufacturers publish their products' water usage data to help make it easy for you or your designer to calculate aggregate design consumption.

Our main bathroom is a fairly basic family zone, equipped with a tub, basin and WC. It's not especially large and there's not enough space for a separate shower – but we could easily mount a glazed screen over the bath if we want to provide one at a later date. Given the master bedroom's ensuite has a walk-in shower – and that a screen inevitably makes it more difficult to enjoy a long soak – we won't be fitting an outlet in the main bathroom at this stage.

We've selected an acrylic tub with a matching side panel and two grab handles. This kind of bath can start from as little as £150, but we're specifying a higher quality version at a cost of £465. At the top end, freestanding products in cast-iron or acrylic would come in at around £1,500. We're using a tap assembly with an integrated shower hose, which will cost £75 (typical prices range from £50 to £150). For durability

and ease of use, this will be a ceramic disc model rather than the less reliable washers-on-spindles option.

The basin will be mounted in a wall-hung base unit, which will provide some critical storage space, and fitted with a thermostatic mixer tap. A mirrored wall cabinet will be installed above – and equipped with a heating element to prevent misting. The WC pan, cistern and seat are a combined close-coupled unit, complete with a low flushing capacity. One option to upgrade efficiency would be to install a system that recycles greywater (that used for washing up etc) to serve the loos.

Ensuite & ground floor WC

We'll use the same toilet and mirrored wall cupboard, including demister, in the ensuite. However, the basin will be a freestanding unit sitting on a contemporary shelf, with chrome brackets and a visible chrome bottle waste. The ground floor WC will have the same arrangement, minus the wall-hung cabinet.

In the ensuite, the shower valve will be a surface-mounted thermostatic option with hose and rail. We're fitting a simple frameless glazed panel with stainless steel floor and wall mountings to demark the cubicle area. However, this is a wetroom zone so there won't be a conventional shower tray. To accommodate the required setup, our timber floor joists will be strengthened with an additional layer of 18mm plywood set on top of the existing chipboard. This will be screwed to the joists every 300mm. Above this, the whole shower area will

Above: Large-format ceramic tiles can achieve the look of natural stone or marble at an affordable price. Variato Grey, RRP £35.31 per m², www.topptiles.co.uk

FIXTURES & FITTINGS FOR BATHROOM, WC & ENSUITE

Building element	Quantity	Cost	Cost per m ² (of floorplan)
WC (close-coupled pan & cistern with seat)	3	£1,050	
China basin with shelf & chrome brackets	2	£380	
Chrome basin mixer tap & bottle waste	2	£86	
Wall-mounted vanity unit & basin	1	£300	
Chrome basin mixer tap & plastic waste	1	£28	
Wall-mounted cupboard with mirror doors	2	£398	
Acrylic bath, waste & panel	1	£465	
Ceramic bath mixer tap with shower hose	1	£75	
Wetroom waterproofing system	1	£509	
Glazed shower screen with ceiling bracket	1	£180	
Shower valve & hoses	1	£350	
Installation – wetroom	1 day	£250	
Installation – remaining sanitaryware	5 days	£1,250	

Total for fixtures & fittings	£5,321	£34.33
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Above: An alternative to a fully-waterproofed wetroom is to use a shower tray. Step-Up wetroom kit, from £495 with square waste, www.frontlinebathrooms.co.uk. Left: In our open-plan zone, the dining area will be demarked with timber flooring – whereas the kitchen will feature porcelain tiles. Palazzo Terra oak oiled engineered boards, from £64.99 per m², www.quick-step.co.uk

be lined with a totally waterproof insulation board – including both the walls and the floors. This also acts as a shower base, with integrated gradient and waste, in the actual showering zone. All the joints will be taped and a special adhesive used at the junctions between each board. At this point the bathroom deck is structurally stable, the whole cubicle fully waterproof and the floors and walls are ready for tiling.

Wetroom floor systems are available from a number of manufacturers and are usually supplied as modular kits that can easily accommodate any shape or size of bathroom. Typically, the biggest potential complication is getting floor levels to correspond correctly with neighbouring rooms or hallways – but if this area is thought through before the construction process begins, it should be straightforward to achieve a comfortable transition between zones.

One potential addition we could consider for this space is electric underfloor heating. This is not a substitute for the radiators and heated towel rails we're fitting on the first floor, but it offers a fantastic feeling of luxury underfoot. Kits for an average bathroom or ensuite cost around £400-£800 including installation.

Wall tiling

We need a non-porous wall surface for our bathroom and ensuite, and ceramic tiles will fit the bill perfectly. They're made of clay and feature a factory-finished



glaze on the outside surface, so they won't absorb moisture and therefore don't need any further sealing following installation (which will be completed by a professional to ensure an attractive finish).

We're using Variato Grey units, a matt stone-effect product available from Topps Tiles. The RRP is just over £35 per m², but just like most self builders we would hope to be able to secure a discount – either directly or via our contractors. The 500mm x 300mm units will be laid in a classic stretcher-bond formation (with the joints staggered like brickwork). The gross area of tiling – across the shower cubicle, the long back wall of the ensuite, two full walls in the bathroom, the kitchen and utility splashbacks and above all the basins – will be 32m². We'll be using a slow-setting, flexible adhesive, which comes in 20kg bags – enough for 7m² of wall. So we'll need five loads to achieve the required coverage.

Tiles are typically laid with 3mm spacings, and these gaps will be filled with a flexible, mould-resistant grout. This comes in a huge selection of colours, so you shouldn't have any trouble achieving the finish you desire. Typically you can get just over 15m² of coverage from a 5kg bag, so we anticipate needing 10kg to treat our walls. Once this is done, a special protector will be applied carefully over each joint to be absorbed into the grout. This will help to keep it clean, but will need topping up every 18 months or so.

Floor coverings

We've fitted underfloor heating throughout the lower storey. To really feel the benefits of this, we're pairing it with large-format porcelain tiles (800mm x 1,000mm) in the kitchen, utility and WC. The same finish will be used in the upstairs bathroom and ensuite, but installation will be slightly different (we have a timber substrate here, so we will need to include a decoupling layer to help protect the tiles against any fractional movement in the floor).

Like ceramics, porcelain is a clay-based product – but it's baked to a higher temperature, which means it should be even less absorbent (hence there's no need for a glaze). It's durable and stain resistant, so it's a great choice for floors. While some tilers will insist on using a floor sealant, most manufacturers claim this is unnecessary. Fitting is similar to laying wall tiles, but more adhesive is usually required. As this is a new home with square corners and level floors, installation should be straightforward – so we're budgeting a rate of £35 per m². For more complex projects or where smaller tiles are used, this could rise to £50 per m².

For the entrance hall and dining areas our virtual self builders want to fit wood flooring to reflect the timber feature cladding on parts of the facade. We'll be using 14mm-thick engineered boards as part of a floating floor. These will be laid above the screed, with a 2mm-3mm cellfoam matt underlay in between. An expansion gap is needed around the perimeter, but engineered floors are extremely stable and should transfer the warmth from the underfloor heating effectively. We're using tongue-and-groove boards, which can be glued together so they act as one large sheet for even greater stability.

For the sitting room, staircase and remaining first floor rooms we're using carpet with an underlay, plus metal

WALL & FLOOR COVERINGS

Building element	Quantity	Cost	Cost per m ² (of floorplan)
Wall tiling			
Variato Grey ceramic tiles (500mm x 300mm)	32m ²	£800	
Flexible adhesive (coloured, slow setting)	100kg	£125	
Flexible grout (coloured)	10kg	£40	
Grout protector		£16	
Installation	32m ²	£1,120	
Subtotal for wall tiling		£2,101	£13.55
Floor tiling			
Yorkstone modular porcelain tiles (1,000mm x 820mm)	40m ²	£1,100	
Ditra decoupling matt	40m ²	£480	
Flexible adhesive (coloured, slow setting)	160kg	£200	
Flexible grout (coloured)	15kg	£60	
Grout protector		£16	
Installation	40m ²	£1,400	
Subtotal for floor tiling		£3,256	£21.01
Other flooring			
Engineered timber boards & 3mm cellfoam (hall & dining room)	37m ²	£962	
Installation of engineered boards	37m ²	£555	
Carpet (bedrooms, landing, staircase & sitting room)	78m ²	£1,170	
Installation of carpet plus grippers & fixings	2 days	£500	
Subtotal for other flooring		£3,187	£20.56
Total for wall & floor coverings		£8,544	£55.12

thresholds at the junctions to other floor finishes. The main consideration here is that the sitting room features underfloor heating, so we need to ensure the combined tog value (a measure of thermal resistance) of the carpet and underlay is no greater than 2.5 – otherwise the heat output may be compromised. For more information on carpet and other soft floor options, see page 81.

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, including surveys, site appraisals, project procurement, project management, dispute resolution and custom build solutions

NEXT MONTH Tim reviews the costs of the finished *Build It House* and reveals whether we'd change anything

If you don't have room to extend your house out above ground or up into the loft, it might be worth looking at creating or updating a basement space. This is fast becoming a popular alternative – especially in areas where land is particularly expensive, such as city centres. The technology needed to excavate, construct and waterproof subterranean zones is improving all the time – and these days, in the right circumstances, they can even be the most cost effective option.

A good foundation

The most straightforward project is where a basement already exists as a utilitarian cellar space, but may lack waterproofing or finishes to its bare brick walls. Such zones are commonly found beneath Victorian and Edwardian houses and were created as cheap, secure storage. Assuming that there is sufficient headroom (a minimum existing height of at least 2.3m) the main conversion work commonly involves damp-proofing and improving the staircase and access.

Going underground

Adding a subterranean zone to your home could provide you with a luxury retreat, or a value-boosting functional space, says **Julian Owen**

JACK HOBHOUSE



Above right: The Lantern project by Fraher Architects involved the complete remodel and renovation of the basement, ground and first floors of a listed family home. The subterranean space works well as a home office

Slightly more challenging is an existing basement that features very low ceilings. The process of conversion will likely mean lowering the floor and raising the ceiling in that space. To achieve this the ground below the footings is excavated and new concrete walls are formed, along with a new floor at a lower height. The foundations will probably start immediately below the basement floor level, so underpinning will be required. This is a specialist job and needs experienced builders to carry it out. How easy it is depends partly on whether there is sufficient room around the house to allow the

builders to get to the foundations. The worst case scenario is a terraced property, where access to the main walls is only possible from inside.

Starting from scratch

If there is no existing basement beneath the building, adding a new one can be complicated. While it's feasible from a technical point of view, it will be an expensive route to extra space. Because of the scale of the excavations, a project like this only tends to recoup its costs if the neighbourhood has very high land values, for example in the more exclusive suburbs of London. That said, if there's no alternative to

increasing capacity, it can still be a worthwhile endeavour.

These works don't usually require planning permission unless the alteration will be visible externally, perhaps due to the addition of a lightwell or an external set of steps. However, you may be required to submit a method statement describing how the extra space will be constructed; a daylight and parking survey to show how any extra traffic will be accommodated.

It is technically feasible to add many floors underneath an existing house, assuming that there are no obstructions in the way. In the more expensive parts of London wealthy



property owners have been doing just that, causing a headache for the planners who have no legal authority to stop them from doing so without extra legislation. Some of the capital's boroughs have introduced strict guidelines to increase their power to limit or prevent extra deep basements, but single-storey versions are usually acceptable.

Whatever the nature of your project it is advisable that you consult the local authority, even if you think planning permission will not be needed. At the very least it will mean that they are ready to field questions from concerned people, should they arise. Dealing tactfully with the suspicions of neighbours is very important, as they are often

quite naturally worried that the excavations will undermine their own property. The Party Wall Act requires you to explain the building work to them in detail and if necessary negotiate an agreement before you even start the project.

If you are building the whole house from scratch and want to include a basement, it will be a lot more straightforward to do – especially if poor ground conditions require that the foundations be deeper than usual anyway. This means you'll already be excavating most if not all of the necessary volume.

A professional job

Basement construction is not something to be taken on by the

average builder and it is advisable to use a specialist, or at least a firm that can show a track record of good subterranean work. There are a number of practical issues that have to be addressed, including ensuring you establish a waterproof space. In areas prone to flooding or where there is a high water table it may be better to avoid a basement altogether – but in most situations there are several effective ways of keeping moisture and water out. Land drains, for instance, can be run around the whole house to remove any water that may collect, and the walls can be constructed in

Above: Aqua Platinum Projects built a luxurious fully-tiled pool in the basement of this six-bedroom self build home. Below: Studio-G Associates added this basement to accommodate a new family bathroom that benefits from lots of natural illumination through the two lightwells

CREATING A SAFE ZONE

The conversion of a cellar into a habitable room does increase the risk of being trapped should a fire break out, therefore the ceiling structure within the basement may need to be made fire resistant. This is usually done by affixing a non-combustible material to the surface. In some circumstances a basement should be separated from the rest of the house using an FD20 fire door. Meanwhile, on some occasions (particularly where the zone is accessed from a room at ground level) an emergency exit giving access directly to the outside should be provided. A person escaping from a window or door from the basement must be able to get easily to ground level outside of the house and move away from the property. Suitable steps with a recommended pitch of 42° should be provided from the exit. An escape opening should have a minimum area of 0.33m² with no dimensions less than 450mm, and the bottom no more than 1,100mm above the floor.





Above left & right: Belsize Architects has transformed a cramped and underused cellar area by excavating to create a larger lower ground floor zone, which now contains a high-spec family room and office space.

waterproof concrete or lined with an impervious material. Several of these barrier methods can be combined for extra safety, but it is essential that the workmanship is to a very high standard because even a relatively small defect can result in failure and flooding of the property.

Perhaps the most reliable approach is to accept that water may get in, and deal with it internally. To do this you can create a lined cavity in the wall to collect any liquid and also fit a pump to remove the water to an outside drain. A final point to



consider is that, even with the best waterproofing available, the air that is found in underground spaces is more moisture-laden. So a low-level permanent mechanical ventilation system is essential.

Using the zone

If you want to create an extra bedroom, then a window or rooflight is essential to let in daylight and fresh air. This can be achieved by lowering the garden level on one side or adding a lightwell. Even a small window will have an impact on the character of the room.

The installation of a swimming pool is a great option if your budget will stretch to it, although they are very humid spaces, so powerful ventilation is needed to prevent the growth of mould and to stop steel beams from rusting. Basements' naturally excellent sound insulation makes them good candidates for a home cinema or a practice room for any musicians in the family. For the same reason they can also provide a good solution for a gaming zone for noisy kids or enthusiastic grown-ups.

They can also be used for utility area or even bathrooms, but because the floor level is lower than the drainage above the property, a pump would be required. Often this sits next to the WC with a macerator connecting to the house drainage located at ground storey height. These are relatively cheap to acquire,

but if they are installed in the wrong location, they may generate unwanted noise. Another option is an external pump chamber, which is less intrusive but more expensive.

The biggest design challenge for this space is letting as much daylight in as possible. A simple way to do this is to borrow brightness via open stairs or by installing glazed balustrades at ground floor level. If there is a slope across the site it may be possible to fit windows or a glazed door directly out onto the garden. Should this space be large enough a similar effect can be achieved by excavating further down on one side of the garden, but if you don't have that option there is usually at least enough room to create lightwells.

A more ambitious step is to project the new zone beyond the walls of the house and into the garden. Provided there is no damage to services or trees, this offers the possibility of having glass ceilings set into the landscape, flooding the rooms below with illumination.

Your local building control officer will expect to see an easy escape route out of a basement in the event of a fire. There should also be fire protection between the basement and the floors above it. Ideally a separate staircase out of the building will be installed (or external steps up to the garden). Failing this, a window above ground level that can be used as an exit will suffice.

JULIAN OWEN

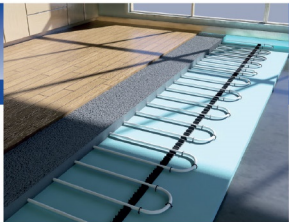


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The Basement Information Centre 01276 33155 www.basements.org.uk
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AUSTIN NICHOLLS

Mike Dade explains what you need to know when assessing this type of self build opportunity – and reveals the planning considerations that will help you decide whether to buy

Above: Sam and Stephen Bickford-Sawkins built this contemporary house on a parcel of land to the rear of 14 existing homes, backing onto each of the gardens. The brownfield plot is something of a crossover between a garden and infill, and the architecture has been cleverly conceived to fit the L-shaped setting

If there's such a thing as a typical building plot, then it's likely to come in the form of either a garden or infill opportunity.

These types of site have traditionally provided a steady flow of land for self build homes – and they continue to do so. This month, I'm looking at how you can assess the potential of a garden or infill plot to help you sort the wheat from the chaff.

GARDEN PLOTS

While the definition of this kind of site might seem obvious, it's worth setting some parameters so that you can be fully informed during your search and in your dealings with the local council. These plots can occur in side, back or even front gardens – provided there's sufficient space and all other planning considerations can be met. They can also be made up of bits of several different properties' grounds – so if your own garden (or the one you have

your eye on) is not big enough, you could make an offer for a chunk of a neighbour's to create a viable space.

Planning basics

A bit of context is important to understand the factors affecting these plots. Until recently, government planning policy guidance was focused purely on making efficient use of building land – especially previously developed property (known as brownfield), where minimum density standards applied for new housing. Gardens were classed as brownfield, which led to them getting filled up with homes in unsuitable locations and ultimately gave rise to a backlash.

When the coalition government produced its National Planning Policy Framework (NPPF) document in 2012, it removed gardens from the definition of previously developed land. The NPPF also advised councils

to consider applying policies that would restrict garden building where they felt it appropriate. The press took this as tantamount to a ban – but in practice, most local authorities rely on a good flow of small plots to boost their housing figures, so few have put limitations in place. While self builders and developers alike continue to gain planning permission on these sites, they aren't as favoured as they once were.

Assessing garden sites

You can only build on a garden plot if it's in a location where new housing is allowed in principle – so this is your first step in checking whether you can press on with a project. The best place to start is the council's Local Plan, which will usually define the settlement boundary on a map.

Some authorities take a different approach, whereby they instead lay out various descriptive criteria to be

met in order for planning consent to be granted. This system typically requires a plot to be clearly within or on the edge of a settlement, not protruding out into the countryside.

Assuming development is acceptable in principle, you'll next need to take a number of planning considerations into account. These include the pattern and character of housing in the area, potential impact on neighbouring homes, presence of trees and how access would be gained to the new property.

Councils are usually keen to maintain an area's vernacular style where possible, so it's important to consider how a project could fit the streetscene in terms of design and materials. Single-storey or otherwise low-profile new homes tend to have less impact on character than two-storey houses. They're also much easier to integrate into leafy suburban plots than larger or taller buildings.

Sensitive design is crucial in other areas of the process, too. Care must be taken to avoid overlooking neighbours' windows or private areas of gardens, for example, while the planning department is likely to

favour applications that look to preserve existing trees and other natural features. Watch out for any existing ponds, which can harbour protected species and may therefore obstruct development. As with any new housing, there must be safe access and adequate space for parking and turning.

The most controversial projects tend to be those planned for back gardens (also known as backland development). But this type of site can still represent a viable opportunity if sufficient care is taken with the layout and design to ensure there are no issues with privacy for neighbours – particularly for the donor property. Access drives for this kind of land will almost certainly need to run past existing houses, which can give rise to noise and disturbance – so be sure your design team addresses this element of the scheme early on.

INFILL PLOTS

Council policies often describe this practice as the filling of a gap in an otherwise built-up frontage – so you can think of it as being a bit like a dentist's patient with a missing tooth.

PRESERVING CHARACTER

In conservation areas and close to listed buildings, extra scrutiny is applied to planning applications to ensure the historic value of the location (or of a particular building) isn't harmed by the proposal. Open spaces can form an important part of local character, or of the setting of a particular building. A sensitive approach to design, layout, materials and detailing is therefore essential in such situations.

In some places, the special character of an area is protected by policy. This is often the case in low-density housing zones, where gardens or wooded settings are considered particularly valuable. Typically known as areas of townscape character, these locations are often subject to policies that discourage new development – unless a specified low density can be maintained or high-quality architecture is employed to blend a new house into the setting. If such policies are up to date, they can be difficult to get around – so it's prudent to check the situation as part of your plot assessment before making a purchase.

Planning basics

It's important to note that, just because a plot might appear to physically be an infill, this doesn't mean it can automatically be built on. If the gap is too wide, then the chances are the local authority won't consider an infill. So fundamentally, the site must be in an area where this



Left: Part of an acre of land set to the side of the main house, this is a classic rural garden plot. It's located within the presiding council's settlement boundary and isn't considered to be part of the green belt, so a design that's sensitive to the existing pattern of housing should gain planning permission



Above and above right: This stunning home is actually a new end-of-terrace infill on a brownfield plot in south west London. Owner Matt Warnes used a prefabricated timber frame building system from Hanse Haus (www.hanse-haus.co.uk) for a quick construction schedule that would minimise disruption to neighbours. The house is clad in characterful brick slips that help it blend into its surroundings

approach is considered acceptable in principle. As with garden plots, this generally means that it should fall within the defined settlement boundary. It might also be permitted by specific policies in Local Plans that prescribe areas where additional housing might be accommodated in a street's frontage.

Assessing infills

These sites tend to raise fewer planning headaches than garden plots as they are, by definition, fitting into the existing pattern of housing in their area. There also tend to be fewer problems over access as they have a frontage to a road, where neighbouring houses presumably also have entrances.

Preserving neighbours' amenity is a key issue, as squeezing a new house into a tight gap can affect their privacy, right to light and outlook.

QUICK GUIDE: THE LAND SUPPLY LOOPHOLE

All councils must be able to demonstrate that they have enough land to meet the next five years of demand for new housing. If they can't, then their housing policies are considered out of date.

Any shortfall in the five-year land supply can signal an opportunity to build outside the established settlement boundaries – provided the location can be shown to be sustainable. For planning purposes, 'sustainable' refers to not only the environmental impact of any development, but also elements such as whether the infrastructure (schools, public transport etc) is in place to support the scheme.

This can open the door for self builds on garden and infill plots that wouldn't otherwise be likely to gain planning consent. However, it's a technical area that needs a considered approach, so it's a good idea to seek professional advice from a planning consultant if you want to submit an application that relies on this loophole.

Much depends on the configuration of windows in the two adjoining houses, as well as the orientation of the buildings on their plots. Your scheme should respond to these elements. For instance, it's often wise to avoid extending too far to the rear, as this can result in overlooking of neighbours' rear garden areas, as well as directly blocking sunlight.

Good overall design is important for infills, too. Councils expect this type of housing to blend comfortably into the streetscene, so this type of plot may not be the best place for too much in the way of architectural adventure. Generally, you're more likely to gain permission with a project that closely

reflects the proportion, shape and materials used in the vicinity.

CONCLUSIONS

Garden plots and infills are obvious locations for self build homes, offering strong potential to gain permission for a new house. However, careful consideration and good design are vital if you're to succeed. You should always check the Local Plan carefully to see what policies might apply to the location. Be sure to ascertain whether a Neighbourhood Plan applies, too, as these documents are becoming more prevalent and their guidelines carry significant weight in councils' decision-making.

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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Reports and scientific studies reveals poor standards of design, specification and workmanship in new homes mean:

- 80% suffer from inadequate fresh air
- At least 19 out of 20 demand up to 60% more energy than you're told they would
- They're so small occupants want to move or extend within the first 3 to 10 years
- Residents are dissatisfied by the poor levels of natural daylight, and
- They will frequently overhear

...Sure you may 'save' £8,000, even £15,000 or more, using cheap architectural services. But these 'savings' are small

MARK SIDDALL



Mark Siddall, from LEAP, is architect of the award winning self build at Steel Farm. To further the growth of self-build in North East England he created SelfBuildMastery.co.uk

change compared to going over budget by twice that amount, failing to meet your expectations or worse, harming the health and wellbeing of you and your family.

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PLANNING

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



CONSERVATION

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



UNDERFLOOR HEATING

Heather Oliver is the product development manager at Nu-Heat (www.nu-heat.co.uk). Prior to working with the UHF specialists, she spent 15 years working in civil engineering on both infrastructure projects and domestic housing schemes.



BUDGETS

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 consultancy for the residential and commercial sectors, offering surveys and site appraisals, project management and custom build solutions.



STRUCTURAL ISSUES

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



DESIGN

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

DESIGN

Will a load-bearing wall affect my renovation plans?

I intend to reconfigure the downstairs living area of my home and convert the two small rooms that are currently used as a separate kitchen and dining room into one open-plan zone. However, I've discovered that the partition wall I intended to knock down is load bearing. What is the best way around this problem?

If a wall is load bearing that means it's taking the weight of the structures above it – probably the first floor walls and the roof. To overcome this obstacle you could introduce a new steel supporting beam in the lower storey. Your contractor should be able to prop up the existing first floor structure before taking a section of the wall beneath it out and inserting the new beam. This is a common project and your contractor will just need to get a structural engineer on board to advise on what size the reinforcing steel needs to be in order to carry the loads.

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PLANNING

Can I get planning permission outside the local village boundary?

We would like to build a four-bedroom oak frame house on a 2.5 acre plot we own in North Lincolnshire. Our



difficulty is that the site falls just outside the local planning boundary. The council is currently considering its planning framework,

however, our area is not going to be included and the local authority (LA) tells us that no changes will be made in the entire region. In short, this means no more building of any kind in our patch. Is there any way we can gain consent, or are we just wasting our time?

FINANCE

Which lending package should I go for?

I understand that many self build mortgages release money in instalments that relate to the different phases of the construction process. How closely does the amount available at each stage correspond to the actual costs of that part of the project?

With a self build mortgage you can typically borrow up to 85% of the land purchase followed by 85% of your construction costs. These expenses are normally paid at different pre-agreed stages, however, things can get complicated as lenders have different rules for what they release and when.

Some companies split the loan amount across construction phases, normally with larger percentages at the end. However, this approach doesn't account for individual project costs and can result in cash flow difficulties. This situation may be exacerbated by the fact that the money isn't released by the lender until each step is completed.

DESIGN

Will triple glazing make our home overheated?

We are currently renovating our 1950s detached house, which backs onto a busy road with lots of traffic, as well as plenty of bars and restaurants. We are considering fitting triple glazing to block out some of the noise. However, we are concerned this could lead to overheating in summer, as too much warmth may be trapped in the house. How can we prevent this?

Installing triple glazing doesn't necessarily mean your house will overheat – it's actually the orientation of the property that's more significant. In fact, if the dwelling is south facing the risk of it overheating would increase whether you fitted double or triple glazing. Assuming you can get planning consent, external shading devices could be fixed to the building to project outwards from the walls above the windows. These tend to cut out the summer sun but let the low, winter rays through.

On the face of it, permission would not normally be given for a new dwelling because the plot is outside the development boundary of the village. One point to investigate is whether the emerging plan makes any specific provisions for self builders. If not, this lack of supply could actually help you.

An argument in favour of your project could be that, because the local plan doesn't account for self builders, exceptions should be made to normal restraint policies. This is most likely to succeed where a site is conveniently located relative to the facilities of a settlement – but the local authority may well resist.

An alternative angle would be to approach your parish council and your district councillor to see whether they might support your application. While political backing doesn't usually trump policy considerations, it can help on some occasions, so this is an avenue that could be worth exploring.

Alternatively, the lender can release a percentage (usually 75%-80%) of the current build valuation. In this case, the payments are typically made once each stage of the work is finished. This can again make it difficult to budget effectively, as the company doesn't necessarily take account of what you've spent. Also, you won't know exactly how much cash is going to be released until the mortgage assessor has visited the site to provide a current value and signed off the relevant phase.

With an advance stage payment approach the lender will release up to 85% of costs for each stage before work commences. This way you know what you're getting even before the project has gotten underway, helping you to align it with your anticipated build budget. Some lenders are more flexible than others, and the key is to ensure you research your costs fully before you start to give yourself the best possible chance of successfully completing your project on budget.

You could also fit external shutters that fold back, very much like what you see on traditional properties across Europe. Alternatively, specify your glazing with a solar control coating that deflects a lot of heat radiation from the sun, while allowing daylight to filter through.

Another area to look at is ventilation. Think about how and where you can draw fresh air into the house, without opening windows that will let the noise inside. Alternatively, consider installing more units on the other side of the house or fit upper top light windows as opposed to large side-hung casements to reduce the openable area and thus the potential for noise.



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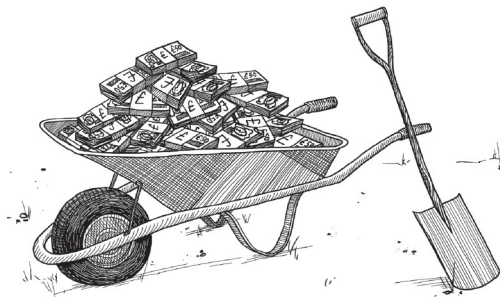
Self build mortgages

The right self build mortgage for you will depend on your individual circumstances and whether you need to borrow money in advance or in arrears. For an idea of what funding you can access, take a look at our mortgage table below



LENDER'S NAME	Lends on land	% of end value of property	No. of stage payments	Minimum works completed for 1st stage payment	Mortgage types available	National or local	Telephone
GUARANTEED ADVANCE STAGE PAYMENT MORTGAGES (available from www.buildstore.co.uk)							
Bath Building Society (Accelerator)	85% (OPP)	80%	Six	DPP & Building Regs granted	4.99%	England/Wales	0345 223 4647
Hanley Economic (Accelerator)	85% (OPP)	80%	Six	DPP & Building Regs granted	6.19%	England/Wales	0345 223 4647
Hanley Economic (Accelerator)	85% (OPP)	60%	Six	DPP & Building Regs granted	5.19%	England/Wales	0345 223 4647
Melton Mowbray (Accelerator)	85% (OPP)	75%	Six	DPP & Building Regs granted	4.89%	England/Wales	0345 223 4647
Pennith Building Society (Accelerator)	85% (OPP)	75%	Six	DPP & Building Regs granted	5.50%	England/Wales	0345 223 4647
ARREAR STAGE PAYMENT MORTGAGES							
Cumberland Building Society	75% (DPP)	75%	Flexible	Flexible	Call branch	Branch operating area	0845 601 8396
Dudley Building Society	50% (DPP)	75%	Six	Damp proof course	4.99%	Postcode restricted	01384 231414
Ecology Building Society	85% (OPP)	85%	Flexible	Flexible	4.90%	National	0845 674 5566
Furness Building Society	66% (DPP)	80%	Eight	Excavation	5.99%	Local	0800 781 4311
Hinckley & Rugby BS	No	80%	Four	Footings	5.64%	England/Wales	01455 894083
Loughborough Building Society	75% (OPP)	75%	Six	Foundations	4.99%	England/Wales	01509 631950
Newbury Building Society	66% (DPP)	75%	Flexible	Foundations	4.95%	Postcode restricted	Contact local branch
Norwich & Peterborough BS	80% (DPP)	80%	Seven	Foundations	4.89%	England/Wales	0845 300 2522
Progressive Building Society	No	75%	Four	Wall plate	Depends on scheme	Northern Ireland	Contact local branch
Scottish Building Society	80% (DPP)	80%	Flexible	Foundations	5.99%	Scotland	0131 313 7700
Vernon	75% (DPP)	80%	Four	Wall plate	4.95%	England/Wales	0161 429 6262
ARREAR STAGE PAYMENT MORTGAGES (exclusives available from www.buildstore.co.uk)							
Chorley Building Society	85% (OPP)	80%	Six	Foundations	5.49	England/Wales	0345 223 4647
Darlington Building Society	80% (OPP)	80%	Six	Foundations	4.99%	England/Wales	0345 223 4647
Furness Building Society	75% (OPP)	80%	Six	Wind & watertight	4.99%	England/Wales	0345 223 4647
Furness Building Society	75% (OPP)	75%	Six	Foundations	5.20%	Mainland Scotland only	0345 223 4647
Holmesdale Building Society	85% (OPP)	80%	Six	Foundations	5.29%	England/Wales	0345 223 4647
Ipswich Building Society	75% (OPP)	75%	Six	Foundations	4.89%	England/Wales	0345 223 4647
Loughborough Building Society	75% (OPP)	75%	Six	Foundations	4.99%	Central England	0345 223 4647
Mansfield Building Society	80% (OPP)	80%	Six	Foundations	4.99%	England/Wales	0345 223 4647
Newcastle Building Society	80% (OPP)	80%	Six	Foundations	4.99%	Eng/Wales/ Mainland Scot	0345 223 4647

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PLOT WATCH:

Mike Dade *investigates*

Solid prospects

The signs look favourable for one Oxfordshire couple to be able to build a new home on a plot that's currently part of their garden – but uncertainty lies in the lack of defined development boundaries in the Local Plan. **Mike Dade** advises them on a strategy

WHO Ted and Jenny Thompson

WHAT The Thompsons' garden, which sits to one side of their existing house. The couple would like to build something in keeping with the street scene, but the only hurdle appears to be the local council's rural housing policy, which is anything but clear-cut.

WHERE Oxfordshire

For more planning advice visit www.speerdade.co.uk



Ted and Jenny Thompson have a long-held ambition to build their own home. Busy careers have thwarted their aspirations up to now, but with Ted eyeing partial retirement, the couple are starting to think seriously about the sort of house and location where they'd like to settle. As they currently have a large house and garden, downsizing is the order of the day, and staying in their local community is a high priority. But with very few plots available in the immediate vicinity, they're wondering if a portion of their existing property might have potential.

The plot

Ted and Jenny's garden is about 0.2 hectares (one acre) in size and includes an informal lawn area, located to the side of the house and some distance away from it. The lawn runs down to a paddock at the rear, and access could be created to the lane through some dense rhododendron bushes, which currently screen the garden from the road. The plot is roughly rectangular, with a large red oak tree in one corner, and the land slopes gently away from the lane.

The plan

Ted and Jenny would like to build a three-bedroom house with a good-sized detached double garage. They're keen on the idea of an oak-frame building, with brick and tile-hung walls under a clay tile roof. The rear roof slope

would face south west, and they're keen to include solar panels in combination with a ground source heat pump and high levels of insulation to create a home that requires very little in the way of external sources of energy.

The scheme could be built while they're still living in their existing home, which would enable Ted to take a hands-on role project managing the build. Their current house would be devalued slightly, but not by anything like the value of the plot they would create, so the scheme should be financially viable. It's a great plan, but the big question is, can they get planning permission?

Planning basics

The plot is on the periphery of the village but forms part of the settlement core, rather than



YOUR TURN

If you'd like Mike Dade to cast his expert eye over a plot you're considering for your build, and flag up any potential problems, send your details and those of your potential site to bulldit@castlemedia.co.uk



Minimising impact on mature trees will be important

being detached

from it. Local planning policy is unusual, but not unique, in not drawing settlement boundaries to distinguish between where you can and cannot build. Here, there is a rural settlement policy that allows housing on the edges of villages, provided it doesn't extend the built form of the area out into open countryside and the plot is reasonably well enclosed by existing housing.

While the policy lacks the greater certainty that development boundaries bring, it does offer a degree of flexibility, as its key criteria are open to interpretation. A new house on this plot would technically be classified as an infill, albeit of a fairly wide gap between houses. So, with homes opposite across the lane as well, the new dwelling would be contained by buildings on three sides and wouldn't intrude out into the paddocks and woodland to the rear. It's also close to the village centre, with a pub, primary school and bus route. It certainly looks like building here should be acceptable in principle.

Planning details

All new houses must comply with what we might call normal development control

policies. These ensure any new dwelling fits into its surroundings in terms of design and materials; accords with the general character and pattern of housing; and will therefore sit comfortably in the street scene. In addition, any neighbours' light, privacy and outlook must be preserved, as must notable trees and any natural or historic features on the plot or in the near vicinity. There must be safe access to the new property from the road, adequate parking and turning space, and suitable drainage for foul and surface water.

This potential plot is not in a conservation area or near any listed buildings, and the modest scale of the intended house and its traditional appearance would blend in comfortably with its surroundings. The neighbouring homes are screened by trees and vegetation, so privacy, light and outlook would not be a problem. As the plot is mostly mown lawn, there aren't likely to be any issues with protected species. The house will need to be sited well clear of the large oak tree, but as this would be at the bottom of the garden, there's no issue here. Access from the lane can be achieved with good visibility in both directions and there's a mains sewer in the road as well. So there really shouldn't be any difficulties with the design or layout.

First steps

As the key question here is one of principle, it would be sensible for Ted and Jenny to seek pre-application advice from the council before

committing too much in the way of resources to the project. They could seek a pre-application opinion on whether, in principle, the plot meets the criteria of the council's rural settlement policy. As their plans are both modest and in keeping, it would be worth getting some sketches prepared showing what they have in mind. If the planning officer was in two minds about the idea of development on this site, an attractive and modest design could well sway him or her in the right direction.

Pre-app is a useful exercise in flushing out what information will be required when the formal application is submitted. It's also a good time to check whether there are likely to be any financial contributions sought towards affordable housing. As self-builders the couple can claim exemption from Community Infrastructure Levy (CIL), but they still need to submit CIL forms with their application.

Moving forward

Assuming the pre-app comes back positive, more detailed plans need to be drawn up of the house and plot layout. As there's a bit of a slope on the site, a couple of section plans would be a good idea, so a level survey will be needed. This will also allow them to determine the exact location of the new boundary that will split this plot off from the main house. Ted and Jenny should mark this out on the ground and ensure they're happy with it, as it's not something to tinker with at a later date. They should check they can connect to the main sewer, too, and think about surface water disposal. They believe their existing house has soakaways; if so, these should also be suitable for the new dwelling.

As well as addressing the practicalities, it would be sensible for Ted and Jenny to talk to neighbours and the parish council to canvass support. An absence of objection can be helpful if the decision is finely balanced and with strong local connections they should be able to drum up their fair share of goodwill.

Conclusions

This plot looks a very strong bet for meeting Ted and Jenny's self-build aspirations. There's just a little doubt over whether the council will favour development in this location, due to its somewhat flexible rural housing policy. But with governmental pressure on local authorities to deliver more new housing, now is as good a time as any to have a go.



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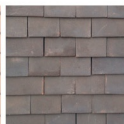
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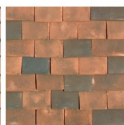
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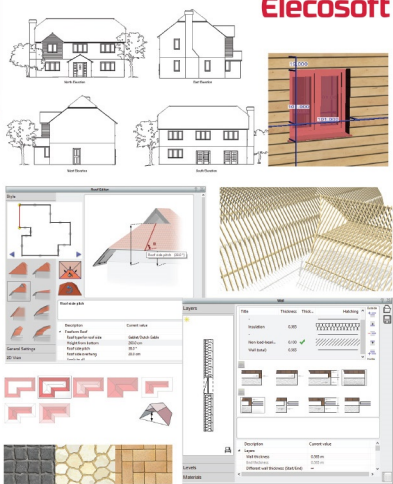
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Description

Outline planning permission has been granted for the construction of a three-bedroom detached

house and garage on this parcel of land near Brighouse. Local amenities including schools and shops are within walking distance of the site, which is also conveniently situated for access to the M62 motorway. The plot provides an ideal base to reach the nearby towns of Elland and Huddersfield.



Agent

Whitegates

Location

Inverness

Price

£175,000

Plot number

127926

Description

This plot measures approximately five acres and comes with detailed planning permission for a one- and-a-half storey unit comprising five bedrooms.

The land occupies an elevated position overlooking Loch Ness and benefits from mountain views. Under four miles from the centre of Drumnadrochit, the site is also conveniently positioned for access to the local shops, schools and a medical centre.



Agent

Strutt & Parker

Location

Norfolk

Price

£175,000

Plot number

128329

Description

This patch of land comprises three separate plots, each of which comes

with outline planning permission for the construction of a single detached property. The vendors will be retaining the first plot to build a home for themselves. Located at the edge of East Harling, the site benefits from picturesque views of the surrounding countryside.



Agent

Brown & Co

Location

Powys

Price

£110,000

Plot number

127937

Description

This plot comes with detailed planning permission to build a four-bedroom detached house with an attached double garage. This is a generous (44m x 36m) and level piece of land in a highly desirable setting, offering superb views of the Severn Valley and located just 1.5 miles away from Newtown. The site is close to water, electricity and drainage services.



Agent

Morris Marshall & Poole

Location

Gloucestershire

Price

£135,000

Plot number

128337

Description

Detailed planning permission has been granted for the construction of a three-bedroom

detached dwelling on this plot. The site amounts to around 0.2 acres and is accessed via a shared driveway. There will be a further area of garden with an open aspect to the front of the driveway. Posts have already been set out to mark these parts of the site.



Agent

Perry Bishop & Chambers

Location

Cheshire

Price

£250,000

Plot number

128650

Description

Located in a semi-rural setting within the village of Shavington, this plot comes with outline planning permission for the construction of a detached dwelling. The site is conveniently situated for local amenities, and further facilities are available in the nearby market town of Nantwich. Crewe railway station is just 2.3 miles away for journeys to London (90 minutes) and Manchester (40 minutes).



Agent

Baker Wynne & Wilson

Specify



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guide to sourcing
products and
information



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The handcrafted Waterside 800 from Shaws is a large single bowl fireclay sink with a classic curved bow front which looks stunning in any style of kitchen. The sink has a central 3 1/2" waste outlet for use with a basket strainer or waste disposer and is available in white or biscuit finishes. This sink is 40mm deeper than the smaller 600mm model. Each sink is proudly stamped with the signature of its maker and bears the Shaws logo which equates to a traditional quality built sink to 'world-class' manufacturing standards. To view the complete range of sinks, taps and accessories go to www.shawsofdanwen.com

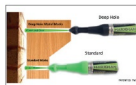
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Kingspan Insulation has reached another milestone in its journey of continuous improvement after its manufacturing facility in Pimbridge, Herefordshire was awarded World Class Operation Management (WCOM) Gold. This latest award reflects the hard work of Kingspan Insulation staff at all levels within the firm.



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Fluidity of design lines is the very essence of the Fluid mixertap from Abode. The clean, smooth shapes of this elegant tap matched with revolutionary new quarter turn valve technology, creates a stunning architectural tail, sweeping away neck tap which can take pride of place in any kitchen interior.

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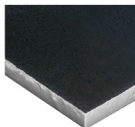
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Kloeber's bifold doors are also available in aluminium and their full product range includes sliding doors, French doors, fixed and gable panels, shaped glazed screens, roof lights, contemporary entrance doors and a wide range of windows including casement, sash and tilt and turn options.

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A Complete Wet Floor from On The Level is a made-to-measure interlocking flooring system incorporating a bespoke showering area with a choice of waste position. The complete flooring system is designed and constructed in the factory and delivered ready for a quick and easy installation, saving labour time on site, plus it can be designed to function as a template to take internal walls. 24mm thick at the perimeter edge, the complete floor can be cut and trimmed easily on site if any minor adjustments need to be made.

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Web: www.onthelevel.co.uk



TOOLSTATION REVEALS LATEST CATALOGUE COMPLETE WITH DISCOUNTS, LOW PRICES AND NEW ADDITIONS FOR AUTUMN

The new catalogue from Toolstation includes 170 new products, expanding its range of low priced products for tradespeople, home improvers and self-builders. Product additions include metal insulated consumer units, in response to new regulations in force early next year for domestic and commercial properties.

Research has revealed that there has been a steep increase in house fires as a result of the heat produced from plastic insulator consumer units. Regulation (421.1.201) (IET, 2015) calls for the installation of metal consumer units in properties, replacing the plastic design. These metal units are featured in the latest catalogue.

The catalogue also features some great offers such as 10L tubs of Leyland trade paint featured at only £14.88 and Griffill - 12 packs at the equivalent of £2.15 per tube. Other product highlights include safety shoes and boots now available in sizes 3-7. Also on offer are the JUBA Smart Tip builders' gloves retailing at only £3.98 a pair, which have been designed to be used on site, and are made with nitrile technology enabling the wearer to manage a touch-screen on a smart phone without removing them.

There are now 200+ Toolstation branches nationwide open seven days a week, offering a Click & Collect service for orders which will be available to collect in store after 1 hour. Free delivery is available on orders over £10 and orders placed before 7pm Monday to Saturday, will be delivered to UK addresses next business day.

Web: www.toolstation.com



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Build It

Products of the month, 11 April 2013

For more information on the products featured in this newsletter, please visit www.self-build.co.uk

Product of the month: 11 April 2013

Product 1: The Self-Build Guide
This is a comprehensive guide to self-build, covering everything from the initial stages of the project to the final stages of completion. It is a must-have for anyone considering self-build.

Product 2: The Self-Build Handbook
This is a comprehensive guide to self-build, covering everything from the initial stages of the project to the final stages of completion. It is a must-have for anyone considering self-build.

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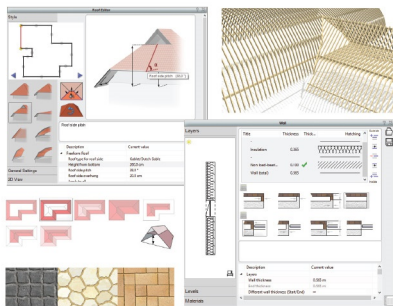
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Have you seen the *Build It* website?

The online home of your favourite self build and renovation magazine, self-build.co.uk has undergone a big revamp. We've taken on board your feedback to deliver a knowledge-packed hub for self builders and renovators, plus a host of new ways to interact with the *Build It* magazine editorial team, our experts and your fellow readers. Here's just a taste of what you'll find online at self-build.co.uk to help kick-start your home building project today!

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The screenshot shows the homepage of self-build.co.uk. At the top is the 'Build It' logo with the tagline 'Making your dream home happen'. Below the logo is a navigation bar with links: 'to self build', 'Plots & planning', 'Homes & design', 'Building routes', 'Products & materials', 'Costs & finance', and 'News & events'. A search bar is also present. The main content area features a large article titled 'Georgian-style self build home' with a photo of a house. To the right, there's a sidebar with 'Subscribe now or buy latest issue', 'Get Build It on your iPad', and 'About Build It magazine'. Below the main article, there's a 'News & comment' section with links to 'Controversial Eco Home', 'CIL Survey by NaSBA', and 'A typical self builder'. A 'Sign up for our free email newsletter' button is also visible. The 'Self build explained' section includes articles like 'Why self build?' and 'What is LED lighting?'. The 'Latest Features' section highlights 'What is custom build?' and 'Handmade brick'. The 'Interactive Tools' section lists 'Price the job with our online project cost calculator' and 'Share your views & experience with comments and Q&As'. The bottom of the page features a 'Product directory' and a 'Mortgage for garden self build' article.

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December issue on sale 28th October

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IMAGES: DOUGLAS GIBB, INDIGENOUS, NIGEL RIGDEN

focus on:

This month we speak to **Jan Chadwick**, one of the directors of the K1 collective self build initiative in Cambridgeshire



What inspired the concept for this innovative scheme?

We've seen that cohousing developments are commonplace in Scandinavia and the US, and there are even similar projects underway in this

country. However, this is the first collaboration between a council, a cohousing group and a developer on these shores. This means that K1 could really lead the way when it comes to creating affordable custom builds for the average family looking to lead a sustainable lifestyle as part of a wider neighbourhood group.

What are your main aims for the project?

Our goal is to achieve an environment where neighbours will get to know each other and people's lives will be filled with social opportunities. Our members really differ in age and we have young families, couples and single people, both working and retired. Because community is at the core of what we're doing here, it's also important that the entire layout is child-friendly.

How is that focus reflected in the configuration of the development?

A car free area is integral to the design, along with collective gardens, a common house and workshops. We also want to encourage our members to share resources, by car pooling for instance. However, while community is at the heart of the scheme, each household will also have its own private space.

We're also incorporating the Lifetime Homes standard so that properties can adapt to suit their occupants. We want to be mindful of mobility issues for older members of the community, so some properties will feature a downstairs bathroom with a shower, whereas this space might serve as a utility room in other homes. There will also be the opportunity to extend upwards into the loft area to create additional rooms for growing families.

Is sustainability an important consideration for the K1 houses?

We want to create highly efficient homes with low energy bills, so the scheme has been developed around passive thermal design principles, using the sun's energy as a natural heat source. Houses will be manufactured using Trivselhus's high performance timber panel system, which will be prefabricated in Sweden and assembled on site in Cambridge.

To what extent will participating members of the K1 scheme be able to personalise their own properties?

Our developer, Townhus, is creating a website so people can choose from a range of design configurations from type A through to E. It's an innovative way to achieve a bespoke build for a large group of people. Of course, there has to be a balance between a personalised design and affordability – it can't be so unique that it's out of most people's budget range. However, there are still plenty of customisation options. For example, you can opt for the standard kitchen or an upgrade version, while you can have two bedrooms in the loft or one master suite with an adjoining bathroom. The modular construction system we're using is extremely flexible, which is a huge advantage when it comes to creating individual homes.

What are your hopes for the future of this kind of collective custom build in the UK?

It would be great if more councils supported cohousing groups like K1, as they have the land that makes this kind of project feasible. Cambridge City Council has been extremely supportive as our project has evolved. While schemes like ours take a lot of work and are by no means going to solve the UK housing crisis on their own, I think we do bring a bit of soul into the area – something you just don't get from the sizable buy-to-let estates constructed by large developers.

For more information visit www.cambridge-k1.co.uk

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