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YOUR DREAM HOME

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A-BUSTING

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 - the perfect kitchen diner
 A charming Cotswold

build with modern interiors

- Passivhaus guide
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Homebuilding & Renovating

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So What Exactly is an Eco Home?

Claire Lloyd is the Editor of Homebuilding & Renovating

co home' — it's a term that is bounded around in the media (in this title too, admittedly), but what does it actually mean? 2016 was meant to be a landmark year for the 'eco home': the

year which heralded the introduction of the zero carbon homes policy. New homes would be built to be carbon neutral. (It didn't address our

bon neutral. (It didn't address our huge existing housing stock, but that's another story.) This policy was scrapped last year before coming into fruition.

With this policy swept aside, and the likes of Passivhaus and now Active House gaining in popularity, you may ask: what are the key ingredients of an eco home in 2016? We asked eco (that word again) expert Tim Pullen to investigate. The

answer is multifaceted (is it an energy-efficient property; a home with a healthy indoor environment; a building which makes use of recyclable and reclaimed materials; one which generates its own energy; or all of the above?), sometimes paradoxical, and makes for an interesting read on page 48. Tim also offers solu-

tions which could help you green up a new or existing home, without it costing the earth.

This issue, we're also celebrating a special anniversary, as Plotfinder.net – HB&R's national database of land and renovation opportunities – turns 20. With this in mind, we've teamed up to create a special plotfinding report. NaCSBA (National

Custom & Self Build Association) chair Michael

Holmes looks at serviced plots, a solution which could enable many more people to build their own home in the UK. Plus, we've also rounded up 20 of our best tips for finding the right plot for your project (and a few pitfalls to avoid, too).

And finally, VAT. So, you're right at the end of building a new home (unfortunately renovators ordinarily can't claim), you've just been issued your completion certificate and the race is on to gather together invoices and submit your VAT reclaim before the three months is up. Another big task, just when the finishing line was in sight! But a task worth doing — after all, it's typically worth thousands. Self-build accountant Andrew McDonald provides a guide to the rules and regs, and explains why giving thought to VAT right at the start of a project could (quite literally) pay off. •

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AUGUST 2016

Contributors



PETE TONKS Pete Tonks is HB&R's design expert and has been designing homes for over 20 years. His small homes design guide is on page 64



ANDREW MACDONALD Andrew is a qualified accountant who prepares and submits VAT claims for clients all over the UK, and assists clients who require VAT advice throughout their project. He explains VAT rules for self-builders on page 57



ANNETTE FORSTER Annette is the director of marketing at Wienerberger and a lead on the Brick **Development Association and** Construction Products Association. Her column can be found on page 32





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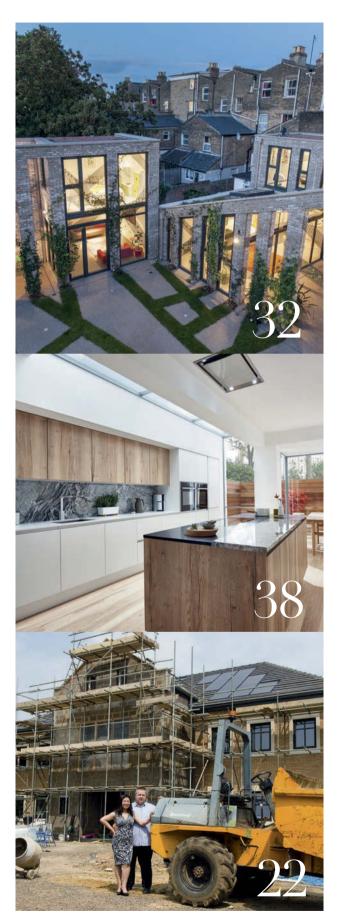




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DIARY OF A SELF-BUILD

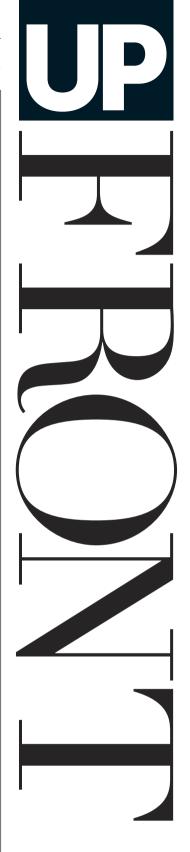
David Snell shares his wisdom as he embarks on his fourteenth self-build. This month, the digging commences on site P.29

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Home Worth £800,000 Collapses During Basement Extension

A house in Penarth, Vale of Glamorgan, which was worth over £800,000, has collapsed during a basement extension.

After purchasing the house a couple of years ago, the homeowner was in the process of building a basement extension to create extra living accommodation and storage in the property when the rear walls caved in, leading to the roof collapsing. The front of the house remains.

Firefighters and sniffer dogs were alerted after the collapsed building was discovered by a workman who had visited the site to collect tools. Fortunately, no one was injured.

"Ultimately it's a groundwork issue and we're in the process of getting new guys in because the contractors haven't delivered," the homeowner told local newspaper *Penarth Times*.

DATE FOR THE DIARY: The ultimate day out for anyone undertaking a project, the London Homebuilding & Renovating Show will be at ExCel from 23-25 September, where you'll be able to attend seminars and masterclasses, book 15-minute free consultations with experts and discover the latest products from the 220+ exhibitors. To book your tickets visit london. homebuildingshow.co.uk

Community Self-Build Scheme in Lewisham Gets the Green Light

In a bid to beat London's housing crisis, a community self-build group in Lewisham has secured a plot of land to build over 30 affordable homes.

The Rural Urban Synthesis Society (RUSS) has signed a deal with Lewisham Council for an ambitious project that will turn the Church Grove site, Ladywell – currently home to a disused primary school – into a sustainable community self-build development.

The project will provide 33 affordable homes for people who have joined its organisation, with the future residents picked in a lottery-style process.

RUSS, a community land trust, has been planning the project for six years, gaining over 150 members in the process. The development will see each house designed and built by its future owners – which comprise young families as well as

older residents looking to downsize – and there will be a mix of tenures from social rentals to shared equity.

As well as the individual houses, there will also be a shared communal room and break-out areas for residents to gather.

Following an initial grant and help from investors, a total of £9million was raised for the project. If planning is approved, work could start in 2017, with the homes ready by 2019.

RUSS is headed by Kareem Dayes, whose father Dave self-built his own house at Walter Segal's famous community self-build development Walters Way (which *Homebuilding* featured back in November 2013) — both Kareem and Dave are pictured below.

For more information on the site and other developments from RUSS, visit **theruss.org**.









OUT AND ABOUT

DESIGNING THE HOUSE OF TOMORROW



We look at how the cottage, terraced house and flat will look and function in the future"

HB&R sits down with Anna Holsgrove, RIBA's curatorial exhibitions manager, to discuss its latest exhibition 'At Home in Britain: Designing the House of Tomorrow'

ith a view to re-examining the way we live in the architecture around us, RIBA's latest free exhibition, which runs until 29 August 2016 at The Architecture Gallery, London, showcases thought-provoking ideas about what the future of housing could look like.

"We chose six practices – Jamie Fobert Architects, Mae, Maison Edouard François, Mecanoo, Studio Weave and vPPR – and asked them to reimagine the cottage, terraced house or flat and look at how these typologies will sit within architecture in the future and what housing might become," says Anna Holsgrove, RIBA's curatorial exhibitions manager.

"The cottage was typically a rural self-build, built using locally sourced materials and was a humble way of building. Over time, however, the cottage has developed into the suburban semi, all of which look identical to one another, with the cottage ideology itself romanticised and removed from what it was initially built for.





"Architect Edouard François looks at how the suburban sprawl of developers could be avoided by reinventing the cottage. He showcases four models in the exhibition which reveal the stages of how the cottage could eventually look. Meanwhile, Jamie Fobert Architects have also taken the idea of the cottage and looked at a rural site in Yorkshire to see how new housing can be integrated into an existing village."

The terrace theme then centres around the Victorian terrace in particular, and the sense of camaraderie around the time of the Industrial Revolution. "At that time, people went to work in the factories nearby and then lived in the terraces next to their fellow workers," explains Anna. "The layout of terraces hasn't really changed since, even though the needs of family life are different now. The architects

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OUT AND ABOUT



at vPPR wanted to re-adapt the terrace form by expanding on the party wall that divides the two dwellings — the idea being that instead of the party wall being at the side, it's towards the front, with a communal space in between. One member of the vPPR team currently works from home on maternity leave in a terraced house and happens to share a good friendship with her neighbour. This idea of having communal as well as private spaces in the terraced house was inspired by the way she

lives herself," explains RIBA's Anna.

"Mae also look at the terraced house, particularly focusing on the 1774 Building Act which saw first, second, third and fourth-rate housing," she continues. "The rating almost became a pattern book which defined whether a house was of high-quality (first rate) or of poor quality and small (fourth rate). This rating system is clear in cities such as Liverpool where the fourth-rate housing can still be seen today by the docks, then as you get into the city the streets become wider and the houses increasingly larger, with the more generous first-rate housing nearer the park.

"Mae look at the idea of a 21st-century pattern book from a custom build perspective — allowing homeowners to select from a series of choices to suit their budget and desired specification. This model would allow a terrace to include individual houses, instead of being a row of identical homes. The potential owner could specify everything from the number of storeys to the level of insulation, floorplans and anything in between.

Reimagining the Terraced House

Looking at the future of Britain's housing stock, the concept of terraced housing has been explored by practices vPPR and Mae who showcase their proposals in the exhibition through models and drawings

"The third element of the exhibition takes on the concept of the flat, and practice Mecanoo have looked at the use of the communal spaces within these buildings. The practice has looked at two groups — students and the elderly, as these tend to live outside of the typical family set-up, and explored the idea of a new communal living situation. The practice came up with the idea of the mansion flat for the 21st century, with the idea of two blocks with spaces for laundry services, restaurants, swimming pool, etc - the kind of facilities you would find in elite high-rise apartments in London, but with the inclusion of good housing design and the idea that this could be adopted in any setting. The design would be made up of one part for the elderly, one part for younger generations, and one part for families, with communal spaces in between," says Anna.

"Through talks, models and research the exhibition covers some of the key residential buildings which many Britons live in today, and opens up people's minds to where these buildings could progress to in the future."

For more information on the exhibition and what's on, visit <u>architecture.com/Explore/ExhibitionsandEvents/AtHomeInBritain</u>

NEW PROJECT

"IT'S BEEN SMOOTH SAILING SINCE WE WENT ON SITE"

Vincent Haines and Jacqueline Jiang-Haines are busy working on their new Georgian-style self-build...

A year into their 560m² neo-Georgian-style self-build, Vincent Haines and his wife Jacqueline Jiang-Haines are nearing completion. However, their project didn't get off to the smoothest of starts.

"We felt quite lucky that the house we moved to sat on a plot of around 2.4 acres, but when we decided to self-build at the back of the existing house and consulted with the neighbours they expressed their concerns and all turned up to the Parish Council meeting to object," says Vincent.

"On top of this, our planning application was refused, but we managed to win on appeal.

"We thought carefully about what we wanted for the design and what would be favourable with the planners," continues Vincent. "The house opposite is similar in style to what we've gone with and so we thought submitting plans for something in a neo-Georgian style would have less resistance, but we then realised the neighbours didn't like that house either! The village has a number of original Georgian properties and so we wanted something that was in keeping and more traditional on the outside, but with modern interiors."

Fortunately, Jacqueline is an architect at Digio Design

and Construction and was able to design the house. After achieving planning, work began clearing the site in March 2015, with the foundations poured in June of that year.

"It's been pretty smooth sailing since the building work began," says Vincent. "The only problem we had was when the roof trusses were being delivered and the crane we had wasn't big enough. This slowed things down a little but we quickly caught up.

"We're doing the project management between us and luckily with the new house in our own garden we can just pop over and see it when we need to. We've been fortunate enough to continue living in our existing house during the build."

With the final stages underway, the render will be going on in the next few weeks and the couple hope to move in this autumn — putting the final touches to the house once they have moved in.

So what words of wisdom would Vincent pass on to other self-builders?

"Don't underestimate how time consuming and tiring this process can be, but do keep the end goal in mind," he says. "Think about what you are building and why, and that makes it all worthwhile."



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BLOGS

We catch up with founder of Castle Ring Oak Frame, Rob Dawson, who's midway through building an oak frame home for a client, Peter, in Wales.

With the weatherboard cladding of Peter's home finished, attention turned to the stone plinth the new house will sit on. Some builders like to install the stone plinth first and then work vertically upwards to the eaves with the weatherboarding. Les Morgan, Peter's main contractor, on the other hand prefers to weatherboard first and then to build the stonework up to the lead flashing. This way, he maintains, water can't pour into the cavity between the stonework and the blockwork. Another reason is that stonework traditionally takes longer than most trades and can slow down other parts of the job. There's a logic in there born from experience.

This particular stone base (shown above) is spaced off the blockwork by means of a 50mm cavity using a product called SureCav 50. It's a space-saving, moulded and recycled polypropylene panel that enables a stone outer skin to be built without the need for an additional block leaf. It's quick and easy to install.

The stone is sourced from the best available quarry less than 10 miles away and has been cropped to 150mm for laying with minimal waste. The finishing detail is an angled sandstone paving slab with the lead flashing dressed down to shed rainwater — the project is in Wales and it's been known to rain in these parts!

For more updates on Rob's project, visit homebuilding.co.uk/blogs

LETTERS

DEAR EDITOR,

I read with interest David Snell's article on why projects need a warranty in your June 2016 issue and wish I'd read it earlier.

I'm mid-way through my first self-build project and because my finances meant I wasn't required to get a structural warranty, and as it's my plan to live in the house for well beyond 10 years, I made the 'saving' of not buying one. However, I've had a disaster as the structural engineer, subcontracted by the design and build firm I have a JCT contract with, created several problems.

When the problems manifested themselves we were starting first fix. The site insurance providers said it wasn't something they covered, as there was an apparently clear contractual failure of supplier(s) that I should pursue. It seems local Building Control check few, if any, sets of structural details sent their way. If I had taken out a structural warranty at an early stage of the project, from what David Snell wrote, there is a good chance that the technical audit they would have provided, along with their site inspections, could have captured the problems far earlier. I would not be paying to rent alternative accommodation on top of expert fees to resolve the problem, which is likely to add two years to my project. Mr Robertson, Surrey

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TOP TWEETS



"This year's competition is Starter Home on a Shoestring...can you design one for under £50k?"

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"Self build exemption from 106 payments CONFIRMED. £10,000s of savings for people wanting to self build" **@JasonPOrme**



"70% new Scottish housing up to 7 storeys built with timber frame. England needs to catch up. @timberinitiativ" @PTArchitecture















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BEFORE & AFTER

A home in a Bedfordshire Conservation Area is the subject of a radical remodel



his existing two-storey red brick house in Henlow's Conservation Area in Bedfordshire suffered from a dated external material palette, and the internal layout didn't promote the use of the external areas to the rear.

Due to the limited space either side, the house was extended to the front and rear. The creation of a central entrance under an overhanging front gable has also created a visual hierarchy.

Internally, the stairs were moved to the centre of the floorplan, with a void over the entrance hall, created to allow light to penetrate the centre of the home and to provide opportunity for a galleried landing. A new steep-pitched roof, meanwhile,

provides space for a large master bedroom with dressing room, large en suite and a small separate room that can be used as a nursery or study. (Four double bedrooms have been created in total.) The master bedroom also sits under a dramatic vaulted ceiling with glazed gable.

To the exterior, the material palette has been updated with splashes of contemporary brickwork, acrylic render and aluminium cladding, while natural timber cladding offers a warm welcoming feeling to the refreshed property, offering a positive contribution to the streetscape.

This new design has helped to preserve and rejuvenate the Conservation Area by remodelling a building that had no architectural merit.

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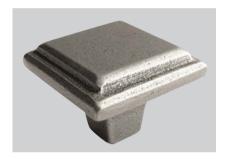
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DIARY OF A SELF-BUILD



Digging Commence!

WE FOLLOW SERIAL SELF-BUILDER DAVID SNELL AS HE EMBARKS ON HIS FOURTEENTH PROJECT — SHARING HIS TIPS ALONG THE WAY



ast month, I explained how my wife Linda and I had exchanged contracts on not one but two adjacent plots of land in Berry Hill in the Forest of Dean, Gloucestershire. As luck would have it, Bruce Bendall, my builder friend from the area, had approached me with a view to buying the second plot to build a home for himself and wife Kathy. We agreed to sell the plot to them for £115,000 and, in return, Bruce agreed to sign a contract to build our new home, contiguously with his own.

MAKING CHANGES TO THE EXISTING PLANS

After tweaking the original design of the houses slightly to include a gable end on the front elevation to our house – with the help of Kevin Cooper, who had drawn up the original plans for the houses on the two plots – we made a full planning application to the Forest of Dean District Council. When it was validated, we were advised that a determination should be with us within two months.

Of the two plots, we chose the one on the left-hand side, as we felt this had unobstructed views to the front. It is also next door to Les and Pat's cottage, the vendors from whose

Above: Work Begins on Site

With planning permission approved, work starts on David's site. Diggers arrive to move the topsoil to be stored off site, to be used at a later date or sold

garden the plots had been carved. An additional factor influencing our choice was the continuing opposition to the development from the occupants of the bungalow on the other side.

Our revised planning application, therefore, showed the new design with the gable end to the road-facing elevation, which reduces the visual mass of house. The application also changed the garages for both houses to cart barns with low-pitched pent roofs, which opened up the space between the two dwellings.

Crucially, the application made no alterations to the right-hand property, on the premise that if that house remained the same as that which had already been granted, there would be less scope for any valid local objection. Unfortunately, that proved to be a false hope.

I stayed quiet for the first three weeks but kept an eye on the council's website. Then a couple of weeks later, the Parish Council posted a comment stating that they would be making representations. A week later, I was flabbergasted to read of their objections, which basically re-ran

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DIARY OF A SELF-BUILD

"I get just as excited now as I did when we built our first house"

all of their previous objections to the site being developed — paying no heed to the fact that a planning consent already existed.

They maintained that the site was outside the settlement boundary and represented an unwelcome intrusion into the Wye Valley Area of Outstanding Natural Beauty.

Was this true? I rang designer Kevin Cooper and he explained that technically the site was outside the settlement boundary but that the previous consent had been granted on the basis of the land being within the District Council's 'emerging allocation'. "In any event," he stated, "it's got consent already — you could start work tomorrow afternoon on the basis of the existing consent."

That objection was swiftly followed by one from the occupants of the bungalow next door, citing the fact that the two houses would spoil their view across the plot.

Worryingly, they also disputed the traffic survey, which we'd copied from the previous application, stating that the traffic on this narrow lane was much heavier than we were suggesting.

I spoke to the planning officer, and he didn't seem fazed. I explained that we'd not altered the plans for the house on the second plot in order to invalidate these types of objections. I also informed him that once we'd got planning we intended to make a change to the plans to reflect Bruce's wish for plain clay rosemary tiles on the roof instead of interlocking concrete, and stone and render instead of brick.

"Change it now," the planning officer advised. "Let's get it all settled in the one application." Shortly afterwards I submitted the revised plans, and all we could do was sit back and wait.

STARTING ON SITE

Meanwhile, Bruce and Kathy sold their house within 24 hours — at a higher price than they'd hoped for. Linda and I also decided that we, too, would sell up and move to the Forest of Dean to be on hand for the build. Our house in Kent also sold within 24 hours, and for £10,000 more than we'd expected.

We had further good news when, on the date they'd originally set, the Forest of Dean District Council issued the planning approval — and we were free to start on site.

As the low loader let down its ramps and the digger rolled backwards off it and onto the plot, Bruce turned to me and said: "You're grinning



like a Cheshire cat."

"That's because, even at 70 years of age and with this being our fourteenth self-build, I get just as excited now as I did in my early twenties when we built our first home," I replied.

The hedge to the front of the plot had to be taken out to facilitate the new driveway and the plan is that a new one will be planted at an angle to create the visibility splays. Bruce had the idea to dig a trench behind the existing hedge and then pull it into a new position. But it quickly became apparent that this wasn't going to work — the old hedge was only held together by a mass of ivy.

A huge pile of topsoil soon accrued too, and we sent for a dumper, which arrived within half an hour. This enabled us to move the pile of topsoil through the back gate and store it, off site, on the forest land at the rear, from where we can bring it back, when required, or possibly sell it. The pile looked huge but we knew it would likely shrink quite rapidly as it weathers.

We quickly got down to a level of subsoil, which proved to be hoggin (a mix of clay and sand which binds together) mixed with shale stone. That wasn't going to be sent away either. It was perfect for the driveway and it would be perfect for the oversites of the two houses. By the end of the first day, the site looked completely different.

The rest of that first week we carved out the driveway and created the level plinths of the two houses and the associated cart barns. Les and Pat, from whom we bought the plot, had watched proceedings and were concerned at just how deep we'd appeared to have gone. But we explained that things are deceiving at this point as the floor levels will be higher.

 Next month: David begins excavating and pouring the concrete foundations

>

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BEST BRICK HOMES FROM AROUND THE GLOBE



PROOF THAT BRICK CAN BE Architecturally Outstanding

INDUSTRY INSIDER ANNETTE FORSTER SHARES THE RESULTS OF THE INTERNATIONAL BRICK AWARDS

he building industry is evolving. As we embrace new technologies like BIM (building information modelling) and continue the drive towards sustainable construction, naturally there's an increasing level of scrutiny placed on our buildings and the components we use. Through these fundamental changes to the core dynamics of our sector, one building material remains timeless — we're talking about brick.

Clay brick has been at the heart of Wienerberger for over 200 years. It's a material that naturally delivers thermal insulation, durability and long-term value, but what people can often overlook is the potential brick offers from an aesthetic perspective.

At Wienerberger, we believe in this potential, particularly in the context of residential designs. It's why every two years we host the Wienerberger Brick Awards, an international event recognising outstanding achievements in brick architecture, which received a total of 600 entries from 55 countries this year. One of our Grand Prize winners, House 1014, located in the historic city of Granollers, Spain, sets an example of how to use leftover space in urban areas. In response to the client's desire to divide the home into two independent zones, architectural office Harquitectes created a sequence of alternating interior and exterior spaces. Crucially, the use of natural brick in House 1014 conveys both tradition and contemporary character, substantially contributing to the overall appearance of the property.

The winning project in our Residential Use Category was Termitary House, an innovative build in Vietnam. Located in a tropical monsoon climate zone, the house is built entirely of brick so it responds to the extreme climatic conditions and relates to historic examples in Central Vietnam.

It has an extremely economical layout with bathrooms, living and sleeping areas, an office, a small library and a prayer room all incorporated into the limited space.

Other special features of the house are the openings in the roof and the perforated brick walls, which provide lighting and ventilation in all areas.

These award-winning projects provide emphatic examples of how brickwork – as both a practical building material and a medium for forward-thinking aesthetic design – continues to deliver innovation, versatility and economy at the forefront of our industry.











Top: Forest Mews

Built using sand-coloured facing brick with a series of columns and pillars, the façade of this London home by Robert and Jessica Barker surrounds an inner courtyard. The project was shortlisted in the Urban Infill category

Top Left: House 1014

This Grand Prize winner in Spain from practice Harquitectes uses facing bricks, clay blocks and clay pavers to great effect throughout the property, showcasing how a brick building can demonstrate skilled craftmanship

Left: Termitary House

"In its mix of materials and design innovation, Termitary House manages to both nod to the past and look to the future. Brick is one of the most historic building elements but used in this context it is tactile and central to the fabric of the building. Beautifully, it provides the character and heart of this award-winning home," says Jason Orme, HB&R's Editorial Director, who attended the Wienerberger Brick Awards in May 2016

• Annette is the director of marketing at Wienerberger (wienerberger.co.uk; 0845 303 2524) and a lead on the Brick Development Association and Construction Products Association

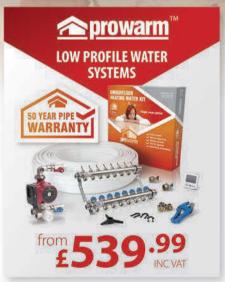


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A Quick Guide to SUNROOMS

HB&R: What makes a sunroom different from a conservatory or orangery?

Arboreta: The structure of a conservatory consists of mainly glass with minimal brickwork with a glazed roof. An orangery usually features a large glazed roof lantern, which lets in a lot of natural sunlight and can consist of a mansard roof structure, which ties in well with the first floor windows of the host structure, or a flat roof. A garden room/sunroom, on the other hand, is a more solid structure and feels like a room in the home — making a great living space that can be used all year round.

What should you consider before you begin?

David Salisbury: When planning a garden room/sunroom, decide what it is going to be used for and how much space you will require; you may want it to accommodate a large table and chairs or a particular sofa, so do not underestimate the size. They provide a space where the inside blends with the outside and you need to plan the position to give the best views of the garden. With regard to the sun, obviously a south-facing room will definitely require heat and glare reduction. However, whichever way the room faces you want to ensure that it is cosy in the winter and comfortably cool in summer by choosing roof and window glass with heat and UV-reflecting properties and heat loss reduction technology for cooler periods.

Do they require planning permission, or does the work fall under Permitted Development?

Merry Albright of Border Oak: Some houses and some locations may not need planning if the new addition is under a certain size. However it does depend where the sunroom is being added. A listed building or projects in Conservation Areas and Areas of Outstanding Natural Beauty will always need planning approval and so it is best practice to check and secure, in writing, an agreement or understanding before going ahead.

What do you need to consider in relation to Building Regulations?

Arboreta: Building Regulations generally apply if you want to build an extension to your home. However, a porch or conservatory if built at ground level and with a floor area of no more than 30/m² is normally exempt, provided that any glazing and any fixed electrical installation complies with the applicable Building Regulations in England and Wales.

So why specify a sunroom?

Merry Albright of Border Oak: Our clients usually choose a garden room/sunroom because they need additional living space. Others may wish to add value to a home or to provide some architectural interest/character. Sunrooms are often added as part of a larger rethinking of the space and how it is used — for example, part of an open plan kitchen revamp and also as a way of getting a lot of light in to an older house.

How can sunrooms be beneficial as a thermal buffer between the exterior and the house?

Arboreta: Sunrooms employ a combination of direct solar gain and indirect gain features. Sunlight entering the sunroom is retained in the thermal mass and air of the room. Sunlight is brought into the house by means of conduction through a shared mass wall in the rear of the sunroom, door, or by vents that permit the air between the sunroom and living space to be exchanged by convection.

How much can they typically cost, and are they a cheaper alternative to traditional extensions?

Merry Berry of Border Oak: Sunrooms/garden rooms typically start at around £10,000 for a frame-only option or may cost up to £80,000 for a larger complete build commission. Comparatively, they may seem like more per m² than an extension because they are single room additions but as they are just one room, there is a level of certainty and they are easy to manage.

Adding Light-filled Space

Sunrooms need not take the form of stereotypical boxes or the classic conservatory style as these beautiful examples go to show, which make the most of garden views and create a natural transition from the house to the outdoors













Useful Sunroom Contacts:

Border Oak	borderoak.com
Arboreta	arboreta-oak.com
Vale Garden Houses	valegardenhouses.co.uk
Trade Conservatories 2 U	
tra	adeconservatories2u.co.uk
David Salisbury	davidsalisbury.com
Everest	everest.co.uk
Charles Christianson	charleschristianson.co.uk
Anglian Home Improvements	
	anglianhome.co.uk
CR Smith	crsmith.co.uk
Four Seasons Sunroon	nsRoomOutside.com

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MATERIALS





SUNROOMS

BORDER OAK'S HANDMADE KIT GARDEN & SUNROOMS

Border Oak has a new range of handmade 'kit' garden/sunrooms which are oak framed and self-supporting — specifically designed to be erected and finished by self-builders or their own builders. Currently there are two main models available, with varia-

tions for customisation; prices start around £9,800. Larger or more bespoke garden room extensions can also be designed and built by Border Oak, with complete build packages starting at £35,000. (borderoak.com)



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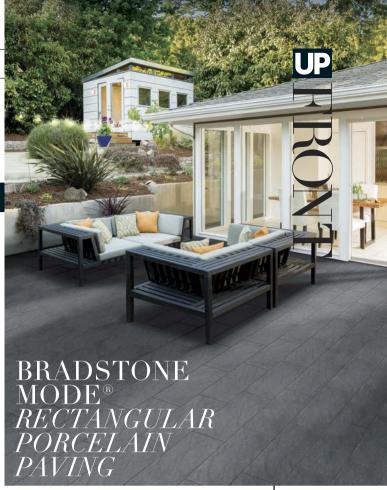
BRETT LANDSCAPING'S CREATIVE SANDSTONE

Available in six colourways (shown in Fossil Mint), the Creative Sandstone range from Brett Landscaping comes in single and mixed-size (small and large) packs, as well as a circle kit including corners. The stone is accurately sawn to an even thickness to allow quick installation. POA. (brettpaving.co.uk)



TOBERMORE'S TEGULA BLOCK PAVING

Tobermore's Tegula block paving has been tumbled to give an aged appearance, similar to weathered stone. Available in eight colourways (shown in Heather) the paving is perfect for adding character to new build landscaping schemes, as well as remaining in keeping with period properties. POA. (tobermore.co.uk)



The Mode range of porcelain paving from Bradstone is available in two stylish finishes, each with two shades: Textured in Shell and Graphite, or Profiled in Beige and Graphite. Priced at £60-£70/m², the 600x300mm Mode pavers offer a virtually maintenance-free finish. (bradstone.com)



BRETT LANDSCAPING'S AURA BLOCK PAVING

The Aura range of block paving from Brett Landscaping (shown in Silver Fleck above) features a tumbled riven surface and gives a cobbled feel, while a gentle sparkle makes it a great alternative to granite setts. The paving also comes in a circle kit. POA. (brettpaving.co.uk)

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New from Reed Harris, the Roma tiles combine the look of marble with the practicality of porcelain. Available in four colourways that highlight the veining, Roma provides a timeless, contemporary look that is enhanced by the tiles' matt finish. Two pale, neutral shades of Statuario (shown) and Calacatta are joined by the darker Grafite and Imperiale colours. The tiles come in five sizes (the smallest in the range measures 300x75mm and the largest is 600x600mm). Prices start from £54.95/m². (reedharris.co.uk)





CROWN IMPERIAL'S *MIDSOMER KITCHEN*

Crown Imperial's new modern oak Shaker-style kitchen range Midsomer is hand-painted and available in 21 colours, as well as a primed finish to decorate in your own paint colour, with stainless steel bar handles for a sleek finish. Designed with open plan living in mind, the Midsomer kitchen also features ample storage, open shelving and mid-height units to create a seamless feel. The kitchen costs from £10,000. (crown-imperial.co.uk)



JELD-WEN'S *EASY FIT DOOR HANGING KITS*

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"Do Your Homework When Choosing Builders"

Builders share their words of wisdom for a successful building project



The key to the success of a building project is experience, planning, communication and decision making, as well as having excellent tradespeople and skills on site. Transparency of costs makes client liaison and management much easier, too.

Planning and communication are two of the most important aspects of building projects. Time spent planning is never wasted. Our door is always open and we welcome clients communicating with us during the decision-making process; it's important if the build is to be kept on schedule and budget.

A common problem is that potential clients have not allowed enough time for planning and expect a builder to be available at short notice. Good builders can be booked up several months in advance.

Choose your architect carefully before choosing your builder. Make sure they offer a full planning service including Building Regulations detail and structural calculations. We often come across clients who have had initial planning drawings done by an architect who doesn't provide full Building Regs detail and approvals. Clients sometimes end up having to start the drawing process all over again with a new architect at an additional cost.

Do your homework when choosing builders and look for hard evidence of reputation, experience and track record. Ask to see previous jobs at various stages of the build, and speak to their former clients. Think about whether you could have a sensible conversation with them if unforeseen issues crop up. Do you trust them? If time allows, sleep on a decision. **①**

- Peter Maton is director at Cox Format Developments (020 8449 9697; coxformat.co.uk)
- The Federation of Master Builders (FMB) operates the Find a Builder service to help you source quality contractors near you at fmb.org.uk

Making Sense of your ECO HOME Options

Most of us believe that eco houses are a 'good thing' — but what do we actually mean by this broad term and what measures are best suited to your project? Eco expert Tim Pullen explains all



TIM PULLEN
Tim is an expert in sustainable
building and energy efficiency. He runs

the green home consultancy Weather Works, advising clients on renewables and energy efficiency in the home hat do we mean by the term 'eco house'? It seems there is no single definition: the nearest we get is:

'a dwelling that uses materials and (perhaps) technology to reduce its energy needs and its impact on the environment'.

But then some definitions include phrases like 'environmentally friendly', 'sustainable materials', 'healthy living' and the idea broadens out to include everything from a couple of solar panels to a house built entirely of reused tyres.

Similarly, there are a plethora of eco house design types: fabric first (e.g. Passivhaus), carbon neutral, healthy homes, biophilic (linking the house to nature), cradle-to-cradle (which looks at the lifecycle of materials), holistic design (which looks at the impact of the house on the people living in it and the local environment) and Earthship Biotecture (building entirely with natural and recycled materials).

What this tells us is that an eco house can be anything we want it to be, given that it offers some difference (improvement, perhaps) on the accepted norms. An eco house could include some or all of the following:

- Higher than normal levels of insulation
- Better than normal airtightness
- Good levels of daylight
- Good double or triple-glazed windows
- Passive solar orientation glazing oriented south for light and heat
- Thermal mass to absorb that solar heat
- Minimum north-facing glazing to reduce heat loss
- Mechanical ventilation with heat recovery (MVHR) system
- Heating from a renewable source (such as solar, heat pump or biomass)
- PV (photovoltaic) panels, small wind turbine or electricity from a 'green' supplier
- Natural materials avoidance of PVCu and other plastics
- Rainwater harvesting
- Greywater collection
- Composting toilet

The list could go on, but can be treated more as a menu than a shopping list. It is a matter of picking those items best suited to the project and the people building it. If we accept that it is not possible to reduce our impact on the environment to zero, then what constitutes an eco house is a matter of degree: a completely standard brick-and-block house with a solar panel on the roof is at least more eco than the house next door.



THE DIFFERENCE BETWEEN **ECO, GREEN AND SUSTAINABLE**

Green has no real meaning, but other than that the terms seem interchangeable. 'Eco' may be an abbreviation of 'ecologically sensitive', and 'sustainable' may mean using natural materials from well-managed sources but ultimately they lead to the same thing: a house that, by design, minimises its environmental impact.

Many eco housebuilders start and end with the idea of energy efficiency, which is another way of saying lower running costs. Strathclyde University published a paper in 2013 showing that the embodied energy in a house can be equivalent to up to 25 per cent of the total lifetime energy demands of the house. To be considered 'eco', then, the house design needs to give some consideration to materials and embodied energy.

KEY ELEMENTS OF AN ECO HOUSE

Energy efficiency

Any house with eco pretensions must be energy efficient — it is the starting point. Often this is limited to space heating only and simply achieved with more insulation, as if that is the only energy consumption that can be addressed. An eco house needs to address energy consumption wherever it occurs. Space heating is important, but so too is hot water and electricity consumption.

Materials

A walk around any builders' merchant will show that there has been a shift towards more sustainable materials. This may have been driven by the (now defunct) Code for Sustainable Homes, where using sustainably sourced materials was a good way of gaining points without impacting on the design or convenience of the house.

Now Forestry Stewardship Council (FSC) certified timber seems to be stocked as standard, rather than being subject to special request; there is less PVCu around and timber windows and doors are making a comeback; and the availability of natural materials - hemp, lime, sheep wool, cellulose – has increased as prices have fallen. But for the eco builder, reused and recycled are also holy grails.

And that is not just a matter of what the material is recycled from, but what it could eventually be recycled to. One Passivhaus built in the middle of Cardiff is entirely demountable, for instance. It is a timber frame house that uses no nails or glue, only screws and bolts, so that at the end of the house's life everything can be taken apart and the salvaged materials reused.

THE HEALTHY HOME

Helen and Burnett Lunan built this eco home for their retirement using natural and sustainable materials. Helen, a retired GP in Bishopbriggs just outside Glasgow, became aware through her work of the harmful effects of housebuilding chemicals. As a result, the couple decided that their home, designed by LDN Architects, would be built using natural materials wherever possible, as well as being energy efficient. The low-pitched roof is covered by aluminium, specified because the material can be easily recycled, while most of the stone in the house came from a ruined cottage on the one acre site.

• Natural materials = healthy house?

People who live in houses built mainly with natural materials say that the house has a better 'feel' to it. And it is true that there are no known examples of this type of house having 'sick house syndrome' - which tend to be associated with buildings using a lot



IS MY HOUSE AN ECO HOUSE?

"My house was built in July 1817," says the author of this piece, Tim Pullen. "The stone for the walls came from the fields that surround the house; the lime for the mortar was made in a lime kiln about two miles away; the timber would have originally come from forests perhaps five miles away; the roof is covered in local slate. Heat is (as it was originally) provided by wood and most of the electricity is today provided by a wind turbine.

"When I bought the house there was no intent to buy an eco house and there has been no conscious effort since to make it 'eco'. Two hundred years ago there was no option but to use local, sustainable materials. Today, for me at least, using renewable energy is commercially and practically sensible. By most definitions, ours is an eco house but it might be said we have arrived there by accident."

steel and plastic, and where the occupants feel uncomfortable or even physically ill.

There is a good deal of controversy over whether non-natural materials – mainly plastics and non-natural insulation – contain chemicals that can gas-off to the detriment of occupants. There is no controversy that natural materials do not contain those chemicals. The fact that people living in houses using predominantly natural materials feel good may be entirely psychosomatic, but does that really matter? Any doctor will confirm that a psychosomatic pain hurts just as much as a real one and if people feel good then that is a 'real' feeling.

• Green roof, green walls

One of the maxims of the purist eco builder is to replace the ecology that the house stands on. A green roof will replace it with an ecology, but usually it is a different, and sometimes more diverse and interesting, ecology. A green roof will usually not support the same plant and animal life that the ground did and will not usually be maintained in the same way that a garden is. It therefore needs specialist planting, which in turn is likely to bring in different insects and other animal life.

A green wall is essentially the same as a green roof, but vertical and with different plants and is, perhaps, an even clearer statement of eco credentials. They are typically not installed to all the walls of the house, maybe just one wall or even a part of a wall, but even so they will have a dramatic effect on the fauna using the garden. Green Wall Systems is a good place for more information (green-walls.co.uk).

• Fabric first concept

Passivhaus is probably the best known fabric first standard, where the envelope of the

house is designed to minimise the heat loss of the house, and consequently its energy demands. To some extent, at least, it also addresses the total energy demands of the house and its occupants, but does little to address materials, their energy content, sustainability or recycling.

Energy efficiency is a prerequisite for the eco accolade, and Passivhaus qualifies in that respect. However, there is a danger that this approach reinforces the idea that energy efficiency is the only target for the eco builder. The fabric first concept actually takes the builder much further than that. It deals with insulation, airtightness, thermal bridging, etc, but it also deals with thermal mass, glazing and orientation. It considers how the house can be used to heat itself using the fabric of the house as part of the heating system. If reducing running costs is the only criterion, then fabric first is the way to go. But if the builder is also concerned about CO₂ emissions, water consumption, resource depletion and the impact on the local ecology, then Active House may be an option — it is similar to Passivhaus but goes two steps further, by generating at least as much energy as the house consumes and considering the health and comfort of the people living in it.

Renewable energy

To an extent, this can be considered as a substitute for fabric first — the builder either achieves an energy-efficient envelope

WHAT NEXT FOR ECO HOMES IN 2016 AND BEYOND?



RACHEL HAYNES, DIRECTOR OF THREAD ARCHITECTS Removing VAT from renovations and improvements would aid in improving the existing housing stock

"Our view is that every existing dwelling is an eco home, as it has already invested most of its embodied energy in its construction. The fact that VAT is applicable to most domestic building work including renovations, but not to new build dwellings, reinforces a throwaway culture that in 2016 cannot be seen as sustainable or eco. The ability to adapt what we have should be at the forefront

of an ecological approach to future homes. Removing the VAT from significant improvements and adaptations would help lock the carbon in our existing housing stock and promote work towards increasing energy efficiency. It would also create work for local builders and craftspeople and allow homeowners to stay in their existing homes, taking the strain off the need for new housing.

"As well as allowing easier adaptations to our existing building stock, new build homes should also be assessed for their ability to adapt to long-term developments in our needs, technologies and use of our homes for the future."

or provides low-cost, low-carbon energy from renewable sources. Obviously the two are not mutually exclusive and an energyefficient house, by definition, needs less investment in renewable energy.

ROAD MAP TO ECO HOMES

The eco builder has always gone his/her own way. Largely this was a matter of necessity, as there was no recognised standard and few points of reference. It could be argued that the demise of the Code for Sustainable Homes and the policy for zero carbon homes had little impact, as the eco builder knew they had never been the right approach.

The Association for Environment Conscious Building (aecb.net) provides good advice and guidance to the eco builder — but ultimately it is your home, and it has to be a comfortable, welcoming space for you and your family. The decisions the eco builder makes will be based on three tenets:

• Energy efficiency – the fabric first approach to insulation and airtightness,

but also how to reduce the total energy consumption of the building.

- Materials using as many natural, sustainable and recycled materials as possible.
- **Greening** avoiding lawns and hard external surfaces and instead having ponds, wild flowers and meadow gardens.

HOW TO MAKE YOURS AN ECO HOUSE

The key issue is deciding what you actually want to achieve. The budget may dictate that popping a solar thermal panel on the roof is all that can be done. And that, at least, makes the house more eco than the one next door. But there are cheaper and more effective things to do.

- Airtightness or draught-proofing. For energy efficiency, it offers the best \mathcal{L} for \mathcal{L} return, and in older houses is likely to have the biggest impact on reducing energy consumption. This is likely to cost £300 or less.
- Insulation Thermal efficiency is a core element of any eco home and insulation is a key component of that. Focus on getting →



LOCALLY SOURCED

Neil and Mary Gourlay's eco house in Dumfries and Galloway draws on the four Rs of sustainability (reduce, reuse, recycle and recover). It incorporates reclaimed railway sleepers (sawn, treated and polished by local craftspeople) for the wooden floors and functional furniture. A Kachelöfen biomass stove, shown below, heats up the dry-stone wall - made from stones stacked in the corners in a neighbouring field - that runs through the house. The homeowners, a retired farming couple, have also used local sheep fleece to insulate the property -150mm of sheep's wool insula-













the insulation as consistent as possible on the whole envelope.

- Recycled materials The local salvage yard is likely to be a repository of useful (and cheap) materials. Try to break the cycle of buying everything new.
- Green the plot Getting rid of hard surfaces (tarmac, brick drives, concrete paths) helps the local ecology, but a lawn is a green desert. A single plant species (grass) is of little interest to insects, and adds nothing to the ecology. A mixed species, grassed area (with plantain, daisy, chamomile, yellow rattle, maybe some wild flowers) is much more interesting to look at and useful to the fauna in the area.
- Solar panels In eco terms, installing solar panels for hot water is the first and least that can be done.
- **LED lighting** LED lamps are now affordable and have a big impact on electricity consumption.
- Glazing Often the starting point in a refurbishment or renovation is to replace single-glazed windows with double-glazed. And, yes, double glazing will have a big impact. Secondary double glazing will cost much less and have almost the same impact on energy consumption.

THE ECO HOUSE BUDGET

Increasing the thermal efficiency with more insulation is a good thing, but sustainable

insulation is more expensive. So rather than installing lots of cheap insulation or less sustainable insulation, it might be worth offsetting the extra expense by using cheaper, reclaimed materials from the salvage yard.

The holistic approach (also called Active House) looks at thermal efficiency, just as Passivhaus does, but also considers sustainable materials and the health of the occupants and the local environment. There are cost implications to this approach, but if health and the wider environment are important considerations, then the extra cost may be offset by having a slightly smaller house that

THE LOW-COST NEW BUILD lan and Simone Pritchett self-built an energy-efficient home of hemp/lime construction, at a build cost of just £788/m². The home's thermally efficient structure and use of eco technologies, such as a mechanical ventilation heat recovery system, means the home has a heat demand of around 2.5kW — around the same as a powerful hair dryer.

WHAT NEXT FOR ECO HOMES IN 2016 AND BEYOND?

KIERAN HAWKINS, ARCHITECTURAL DIRECTOR, MAILENDESIGN



Consider a building's lifespan "Flexibility over time, quality of workmanship in construction and the specification of materials that will improve with age are areas that we think a lot about at MailenDesign. If a building is robust, if it can be adapted to different uses throughout its lifespan and can be occupied in a wide variety of ways, then we can avoid a lot of potential future processes that are very expensive (in both economic and ecological terms). As an example, London's Georgian terrace houses are wonderfully adaptable, allowing a huge variety of

extensions, modifications and sub-divisions, or conversions to shops and offices, while largely maintaining the desirable qualities of natural light and craftsman-ship and without the waste and cost of demolition and new construction."

≫+



THE LOW-TOXIN ECO HOME Liz and Mike Hauck wanted a sustainable and healthy home for their retirement - at the time, Liz had multiple chemical sensitivity, which made it important that the new house wasn't a source of toxins. The thick breathable walls of this Baufritz timber frame house, prefabricated and imported from Germany, are packed with the company's patented wood shaving insulation, which is highly thermally efficient. The 400mm walls also mean any condensation is removed from the atmosphere faster than it is generated, making the internal space comfortable and clean.

is also better for the environment.

All projects have a budget and that implies compromise. An eco house is no different. Bear in mind that any move away from standard housebuilding methods and towards eco living is a good move. If you are trying to create an eco house, remember that there is no right and wrong approach, only good or better.

WHAT NEXT FOR ECO HOMES IN 2016 AND BEYOND?



PAUL TESTA, PAUL TESTA ARCHITECTURE

Consider energy performance, climate change and internal air quality "What we want from eco homes in 2016 is a comfortable and healthy living environment with the lowest possible energy use. There are three prominent threads running through eco housing: fabric first, micro (renewable) energy and low impact construction using natural and recycled building materials. Some of the things we're grappling with now include:

• The performance gap: Most new buildings should be achieving a high level of performance. However, the lack of rigorous thermal design methods and good control on site mean these aspirations are rarely met. It's not uncommon for new buildings to use between 50 and 100 per cent more energy than predicted. The Passivhaus standard has been demonstrated to avoid this performance gap and is the one standard where it's likely the ultimate performance will be as designed.

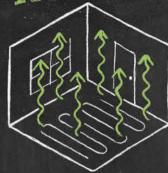
- Future climate adaption: Eco homes can overheat and in many instances, the design isn't resilient to sustained high temperatures. This is an industry-wide problem rather than one that is restricted to sustainable buildings. Passivhaus has some basic overheating risk modelling built in, but future climate adaption will become increasingly important with all new homes as our climate gets warmer.
- Internal air quality: The phrase 'build tight, ventilate right' is crucial. We occasionally see articles in the press about poor air quality in new eco homes. This is because the 'build tight' airtightness element of the building envelope has been considered to avoid heat loss but without the 'ventilate right' whole building ventilation strategy to maintain good internal air quality. Again, Passivhaus has this embedded in its parameters, and the issue is becoming more understood by low-energy building practitioners. Elsewhere, there is still heavy reliance on natural ventilation and building air leakage to provide fresh air — which has been proven to not provide the air quality we need for comfortable and healthy living."

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VAT SELF-BUILD

How to Save Serious Money with VAT RECLAIMS

First, the good news — VAT can be claimed back on many elements of self-build and conversion projects. But failing to keep to the rules could mean you waste an eye-watering 20 per cent (at current VAT rates) of your budget on unnecessary indirect taxes. Accountant Andrew McDonald explains how to make every VAT-reclaimable penny count



ANDREW MCDONALD (MAAT FCCA)

Andrew is a qualified accountant who has built his own house. He prepares and submits VAT claims for domestic clients and assists clients who require VAT advice throughout their project. He also deals with HMRC reviews and appeals, and tribunal cases following rejected VAT claims



Get the VAT
paperwork right
and you can look
forward to a
sizeable chunk of
funds at the end
of your project.
This paperwork
enabled selfbuilder George
Davies to claim
back £13,000 in
VAT (see page 63)

ver the years, I have seen large amounts of VAT lost on projects because the opportunity to reclaim the tax is overlooked or given low priority during the build. It is also difficult to rectify errors or mistakes down the line. Ensuring that you incur the minimum amount of VAT overall on your project is key to its financial success, and hopefully this article will highlight its importance and help you avoid the pitfalls. Get it right and your budget can be managed, adding to the satisfaction when completed.

If you are building a new house, converting a building into a new dwelling or bringing an existing dwelling that has not been lived in for 10 years back in to use,

the DIY Housebuilders Scheme (Notice VAT431NB and VAT431NC) allows you to reclaim from HMRC some of the VAT that you have paid out for your project.

To claim, your project must be eligible and lawful, for personal occupation by you or a family member and evidence of completion must be provided. The VAT reclaimed must be correctly incurred, all relevant VAT invoices must be included and only one claim can be made — and it must be submitted within three months of completion. You will usually get the refund within 30 working days of sending in the claim.

TOP TIP

Consider the VAT implications before starting your self-build or conversion project.

ELIGIBLE

New builds — creating a new dwelling built from scratch, providing it is to be used by you or your relatives as a family home for residential or holiday purposes. Any existing building must be demolished to ground level. Where required by planning consent, an existing façade can be retained

Garages for use with the new dwelling, and covered by planning permission at the same time

Conversions that create a new dwelling converting a non-residential building, for example, a barn, old church, business premises, into a new dwelling

Renovations that bring a dwelling that has not been lived in for 10 years back into use as a dwelling

If the new build or conversion is a holiday home for you and your family's personal use

Landscaping and outside works covered by your planning permission. This may include paving, fencing, turf and shrubs, etc

NON-ELIGIBLE

Extensions and selfcontained accommodation (e.g. a granny annexe) that do not create an independent dwelling in their own right, unless built at the same time as part of a new dwelling

Separate buildings that are part of your planning permission, apart from a garage – for example, a garden store or a detached swimming pool building

Refurbishments of existing dwellings (unless empty for 10 years)

A new dwelling constructed for any business use, such as a holiday rental or buy to let



Above: Build costs for extensions are normally not eligible for **VAT refunds**

TOP TIP

If your project changes in nature during the course of works, e.g. from a remodel to a demolition and new build, then you must obtain the appropriate paperwork to prove this.

Correct VAT Treatment

Many self-builders regularly overlook this area. You should ensure that you are charged the correct rate(s) of VAT on all costs associated with your project. Getting this right is very important, as HMRC will not refund any VAT that has been incorrectly charged.

New builds, conversions, and renovations that bring a dwelling that has not been lived in for 10 years back into use as a dwelling:

- For these projects, the supply of materials only is always at the standard rate of VAT, which is currently 20% (5% on some energy items). You can recover all of the VAT incurred on eligible materials via the scheme.
- The supply of labour only or the joint supply of labour and materials should be at the zero rate (0%) for new builds and at the reduced rate, currently 5%, for conversions and renovations that bring a dwelling that has not been lived in for 10 years back into use as a dwelling. At the end of the project, the owner can reclaim the 5% VAT on eligible joint supply of labour and materials.

I often see large amounts of VAT lost on projects where the correct VAT treatment has not been carefully managed. Many tradespeople/contractors are not experienced in dealing with the VAT rules on new builds and eligible conversions and sometimes say 'it doesn't matter now, as you will get the VAT back at the end anyway'. However, this is not true. Don't leave it to the contractor. If you are unsure of any aspect of VAT on your project, engage the services of a professional to help you get it right.

Special Circumstances

- Renovations to dwellings empty for two years or more are eligible for the reduced rate of VAT of 5% via a VAT-registered contractor.
- Works involving a net change in the number of dwelling units are also eligible for the reduced rate of VAT of 5%, i.e. converting two cottages into one house, or reversion of







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MATERIALS: EXAMPLES OF WHAT YOU CAN AND CAN'T CLAIM UNDER THE DIY HOUSEBUILDERS SCHEME

ELIGIBLE

All materials normally incorporated in a new dwelling — all construction materials, e.g. concrete, blocks, bricks, insulation, sand, cement, plaster, timber, roofing, stairs, windows, guttering, doors, paint, etc



Electrical and plumbing materials



Fitted furniture such as kitchen units and worktops



Extractor fans

Light fittings, wooden floor systems, linoleum, floor tiles, door furniture, fireplaces and fires, fixed towel rails, mirrors, solar panels, boilers, sewage treatment plants, TV aerials, curtain poles





Delivery charge included on an invoice for materials

NON-ELIGIBLE

Equipment hire, e.g. scaffolding, JCB hire (machine only), WC hire, etc



Consumables, e.g. paint brushes, hand tools, etc.

Professional fees, e.g. architects' fees, **Standard Assessment Procedure** (SAP) Calculations, project manager, etc

Kitchen appliances, including those integrated, e.g. hob, oven, dishwasher, etc





Carpets



Delivery costs, when separately invoiced by a courier

This list is not exhaustive, but includes the usual items.

Many self-builders are often unaware of the noneligible items, and so knowing what is and isn't allowed can save you money — for example, buying wooden floor systems or floor tiles instead of carpets will allow you to reclaim VAT for flooring.

three flats back into a house.

• Some adaptations work to alter a house for someone who is disabled is zero rated for VAT.

These reduced VAT rates are only available via VAT-registered contractors and not under the DIY Housebuilders Scheme.

TOP TIP

Obtain and keep all relevant invoices to ensure that you can recover all eligible VAT. Remember, you can recover the eligible VAT on invoices that include both eligible and non-eligible items.

Valid VAT Invoices

Ensure you retain all valid VAT invoices, as the originals must be submitted to HMRC with your claim. Electronic payment receipts and emails confirming orders are not valid VAT invoices and so any VAT paid is potentially lost.

Invoices should include the supplier name, their VAT number, the invoice date, a description of the goods supplied (and services if applicable) and the value of the invoice. If one of your tradespeople/contractors uses their trade account to source your materials and so is in their name, ensure that you pay the supplier direct and keep the evidence, as it will be required.

The VAT incurred on invoices from VAT-registered suppliers in the EU can be claimed too, as long as the invoice includes the relevant information (including their VAT number).

TOP TIP

Many purchases are made online these days, so ensure that you obtain a valid VAT invoice when buying, as this may prove difficult to obtain at a later date.

Key Points:

- Ensure your project is eligible
- Ensure that you are charged the correct rates of VAT throughout your project
- Don't ask a non-VAT registered contractor to supply materials, as you won't be able to reclaim VAT on those materials
- Obtain a valid invoice for all of the eligible materials that you purchase
- Keep all of your relevant invoices together
- Ensure your claim is made within three months of completion
- Engage the services of a professional to ensure you recover the maximum VAT



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Two self-builders give their advice, based on claiming back thousands of pounds worth of VAT on their building projects



Leicestershire-based self-builder Keith Sprintall – who built his own home for just over £80,000 – had a 99% success rate on his VAT refund submission, but ran into problems with an invoice for fitted kitchen units from a large national supplier that was rejected by HMRC. "In the letter explaining this, the VAT office also issued the following statement: 'All claims submitted for a DIY VAT refund which contain errors are considered for penalties for inaccuracies under schedule 24 Finance Act 2007'."

The query was finally only sorted after several attempts to resolve the problem. The moral of the story is: don't assume that the supplier fully understands all the inner workings of VAT returns, and don't expect HMRC to provide a refund if there are any errors, even if the fault lies with your supplier and not you.

Keith concludes: "On the whole, we think our claim ran very smoothly, though the VAT office do use intimidating terminology which is not always sympathetic to the individual self-builder."



"The VAT refund is a very big deal for self-builders, as it is a useful sum of money heading back to you at the end of the build — often a time when self-builders are very short of funds," says George Davies, who has built two homes over the past three decades. On his second self-build in 2013, he and his wife waited until the build was

nearly complete before submitting their VAT paperwork, meaning that they could reclaim the VAT on as many items as possible.

"It creates a dilemma because you can only make one claim and there are always more things to do that might qualify for the VAT refund but you need the money back at the time, not weeks or months later," he says.

"For self-builders, I would suggest you make the VAT people your best friend early on — do get in touch with them if you are in any doubt about how to handle any transaction. If a supplier is hesitant about playing ball with your 'do not charge me VAT request', phone up the VAT office and get clarification."

George also suggests storing receipts in a secure and orderly fashion. "My advice is: keep a file from day one. The VAT office will only accept originals and in the chaos of a self-build project, paperwork can be given a low priority, until you try and assemble everything to send to the VAT reclaim office in Glasgow.

"Sending the paperwork off was a bit nerve racking: the bundle of original invoices is often worth tens of thousands of pounds. We all are familiar with the box on the form that says 'what is the value of your parcel?"—it is not often you put down £13,000," says George, who safeguarded by sending his invoices by recorded delivery.

SELF-BUILDER CLAIMS VAT BACK AFTER DECADES-LONG PROJECT

A self-builder who took nearly 30 years to complete his project to build a house and garage has won his appeal in the tax courts.

HMRC had previously denied the self-builder, Mr Bowley from Gloucestershire, a VAT refund on the grounds that the two buildings had not been completed at the same time.

Mr Bowley argued that building the house and garage had been a single project and that it had taken so long because it was a solo project that he had undertaken in his retirement. The tribunal agreed, stating that a house and garage are "constructed ... at the same time" if they are both built as part of a single continuous project.

The tribunal noted: "HMRC accept that it is possible to make a claim under the DIY scheme within three months after completion of a building, no matter how long the construction of the dwelling may take. Thus, a claimant might take 30 years to complete a DIY building project, and then make a claim within three months of completion

which would include invoices up to 30 years old."

Permission for Mr Bowley's project (building, garage and driveway) had been granted in 1982. His case was strengthened by the fact that preliminary groundwork for the garage had been undertaken before the house was finished in 1994 and a reinforced floor slab for the garage floor had been laid in the same year, some three months after the work on the house was finished. The case was heard in the First-Tier Tribunal of the Tax Chamber on 1 October 2015.

The Art of Creating SMALL HOMES: ADESIGN MASTERCLASS

By applying some clever design principles, you can create your dream home with even the smallest of spaces, says design expert Pete Tonks



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

aving the opportunity to design and build your own home is of course one of the most wonderful things you can do, although it is often perceived as being reserved for those with large acreage plots and bottomless pockets. This is absolutely not the case. Building your own home should be an opportunity for anyone, regardless of plot size or budget.

With land at a premium in many parts of the country, houses are reducing in size. This brings its own set of design rules and processes to be aware of when contemplating your own spaces.

A little bit of history, first of all. Did you know that house sizes have, in general terms, reduced by half since the 1920s? The average house back then was around 148-156m² with three to four good bedrooms — today,

it is more like 84-88m² with around three bedrooms. These figures are of course based more on developer-built projects rather than private self-build, but it's an interesting statistic nonetheless.

Recent RIBA research has labelled these mass-produced properties as 'shoe box' homes and cites them as being unfit for day-to-day family living. Today the UK is ranked as building some of the smallest homes in Europe.

The private self-build client does, however, generally ignore market trends and often has the drive and enthusiasm to make a project work, regardless of constraints, whether they are architectural, spatial or financial. In other words, if it has to be made to work, you will make it work. If your project parameters are such that you have to design a house that is smaller than you originally perceived, do not let this put you off. It is my own experience that clients often have a misconception about what space they actually need anyway.

Here, we focus on how best to design your new home if it has to be a small home: somewhere in the region of under 100m² and up to around 150m².

Let's look first at why your project might be restricted to a certain size:

- Physical plot restrictions
- narrow plot/shallow plot.
- Budget.
- A limit on overall size for replacement dwellings if the plot is in a constrained location such as a Conservation Area or an

Area of Outstanding Natural Beauty. Often in such locations, local planning authorities will have specific percentage increases they would be prepared to approve; it may be a little more complex than this if their policy guidelines are that any replacement dwelling should not be 'materially larger' than the one it replaces.

- You want to downsize from your existing large family home now that the children have grown up and left home.
- You may be building within the new custom build sector, where multiple plots for self-builders are being made more widely available in a major way in the UK. While it is intended that there will be a mix of plot sizes on these planned developments, a large number of them will be aimed directly at this size sector.

None of the above, or indeed any reason that you might have for building a small home, should be seen as a negative scenario or a compromise. Designing smaller homes can be hugely rewarding as you are immediately challenged to squeeze every last possible drop of space out of the design while still ticking all of the necessary accommodation boxes.

I design many smaller houses and spend just as much time with the client during our lifestyle meeting. They take just as long to design as the larger homes too, because ultimately they do the same job. They meet the needs of the occupants through a considered design that is appropriate to the brief. So let's get into some design specifics...





Above: This 67m² home in Dublin makes good use of cantilevered spaces, including a light-filled office space above the kitchen. The office is part of an open plan mezzanine that also houses sleeping quarters, built-in storage and access to a striking cantilevered bathroom (top)

THINK IN 3D

Learn to think in three dimensions (3D) rather than two. When you are knee-deep in floorplans and your architect/designer is feeding you with ideas left, right and centre, it is often difficult to comprehend how the spaces within the design will actually function and connect to one another. The increased use of 3D modelling and more recently, virtual walk-through modelling, allows us as designers to explore potential spaces in ways we have never been able to do fully before. Beyond your floorplans therefore, think about the spaces and environment below your feet and above your head.

Perceived space can be visually expanded by a subtle change in floor levels such as a sunken lounge or family snug zone, or you could incorporate cantilevered floor decks at first floor level which in effect project the floor zones out above the ground floor in a 'floating' fashion. You only need to cantilever a floor out by a small amount to create a much bigger feeling of space. Do be aware that engineering principles for cantilevers generally work on ½ versus ¾ rule before support is required below. In other words, if you want a 1m projecting cantilever, you would need at least 2m connected back into the floor zone structurally.



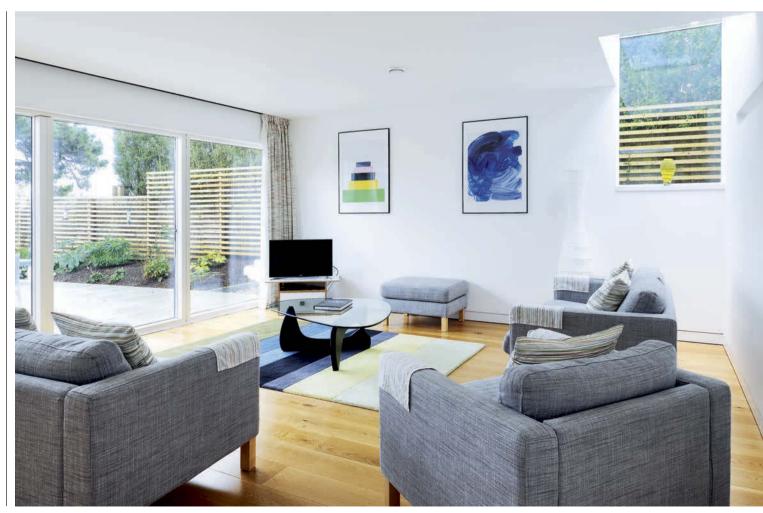
DESIGN SMALL HOMES MASTERCLASS



Far Left: A large rooflight brings natural light into the heart of this self-build on a tight plot in London, without compromising privacy

Left: As well as providing a strong visual feature, spiral staircases (this staircase is from Bisca) are a good option for small spaces, with diameters as little as 1,200mm

Below: The interiors of this 98m² contemporarystyle self-build have been designed to bring in maximum light. In addition to the wall of floor-toceiling glazing from Velfac, a glazed corner window from **Timbertec brings** natural light deep into the open plan living area of the L-shaped building



ENTRANCE HALLWAYS When designing entrance hallways for smaller homes, there is no right or wrong. You could choose a spacious oversized hallway, perhaps at the expense of having a study; more often than not we use our tablets for daily admin tasks and this can be done anywhere. This would immediately give the impression of space and the effect can be amplified further in design terms by creating height above by way of vaulted ceilings. The flip side of this, and equally successful, is to design a modest hallway in a confined environment but when leaving this space, you enter a largely open plan ground floor. This is a subconscious play based on the principles of spatial compression and expansion. Entering compressed space makes us feel secure and controlled whereas entering expanded space lifts the spirit and the soul. The two experiences can be intertwined a number of times within a single layout if you are using a skilled designer. If open plan is not for you and the design is likely to have corridors and hallways, do not be afraid to make these marginally wider than you have been used to. They are the day-to-day transition spaces within our homes and should be pleasant to use and appropriate to your whole scheme rather than just being practical.

INTRODUCING NATURAL LIGHT

Natural light is absolute 'king' when it comes to smaller spaces. However, this brings its own challenges because you are likely to be using wall space for important furniture placement, TV mounting, kitchen units, etc. This means that windows are often considered as a secondary consideration and by default are either positioned in entirely the wrong place or are the wrong size.

I would suggest that you think about window placement early on in the design process and position them according to the sun path so that natural light enters the building and spaces within at the right time for the right location. Be adventurous with getting natural light into your smaller home by considering high-level ridge glazing, clerestory windows which can sit above kitchen cabinets or one of my favourites, 'super-skinny' slit windows at the ends of walls in corner locations. These give shafts of great natural light into otherwise dark zones and not only do they provide light but also a striking and unique flavour to the home.

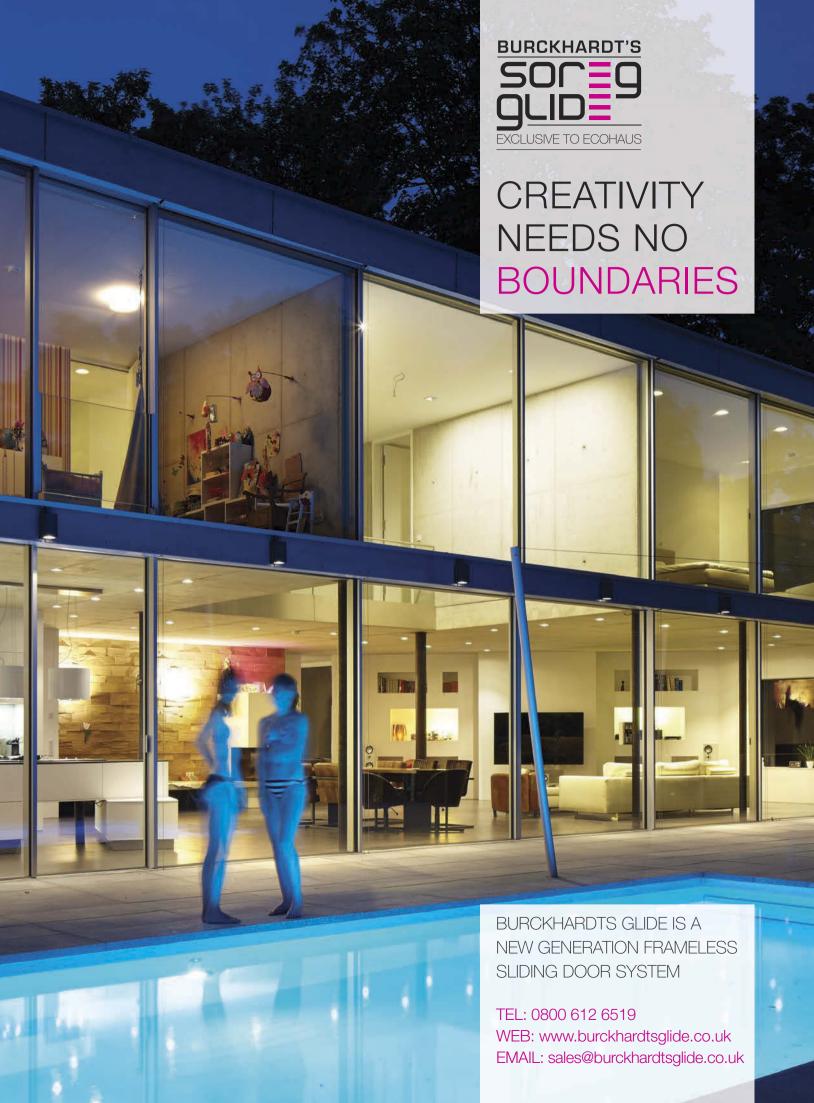


STAIRCASE AND LANDING

A conventional staircase and landing can sometimes be bulky and appear incongruous. Things have moved on significantly in recent years so that these elements can be made far more transparent, which in turn gives the impression of space. You could consider glass balustrades instead of timber, or a single spine stair design instead of a stringer either side that immediately removes some of the bulk. You can get glass treads on top of a spine stringer, making the structure even less obvious, or go one step further and opt for a cantilevered tread staircase which creates an even greater sense of space. Beyond the staircase, I am a big fan of glass floors. These seem to be a 'marmite' feature but they do make spaces far more exciting and provide views through a building that would otherwise be blocked.

We recently designed and constructed a property for clients in Hertfordshire that was a footprint of around 11m wide by

11m deep, with only two bedrooms and two bathrooms at first floor level. Originally our clients wanted something much larger. However, Conservation Area and local listing constraints forced us into designing a house of a certain restricted size and while I always knew that we could make it work, the client was cautious. Through the design and build process, we talked with our clients about how we could make the spaces connect with one another to visually amplify the environment within. We ended up using not only a single spine staircase but also glass balustrades, glass floors, glazed internal walls, glazed internal apexes, wide sliding doors rather than bifolds and one of my particular favourites — a 'line of sight' to the rear garden as soon you enter the front door. This immediately draws the eye through the whole house and gets you thinking about how exciting the building could be, even though your original perception may have been the opposite.









INDOOR/OUTDOOR SPACE

Another consideration is indoor to outdoor space. Yes, I know that the UK climate is not as good as perhaps we would like but we do have the occasional hot spell, so think about your external spaces as an extension of your internal spaces and how to create a blended transition between the two.

The veranda has made a huge comeback in recent years and is a particular favourite with my clients. This can be a simple continuation of a sloping roof, often referred to as a 'cat-slide', and you only need a projection of around 1.5m-2m that is covered above to really make this a successful 'outdoor room'. Other terms for outdoor spaces/rooms are 'loggia' and 'pergola'. These external zones can be used in any weather and if you/your designer are clever, they can be integrated at ground floor and first floor level and often can be excluded from area/volume restrictions, which can be particularly useful if your planning parameters are limiting.

I hope this advice has opened up your thinking if you are faced with designing a smaller home than you had originally thought you needed. Never look upon this as a compromise because the opportunity of designing and building any home, large, medium or small, is such a wonderful prospect — so embrace it, and make it the very best you possibly can.

Top left: Part of the roof of this 115m² former youth club in Devon was removed to create a south-facing courtyard that fills the new interiors with light and provides valuable outdoor living space

Top right: This veranda offers a sheltered 'room outdoors' in this oak frame and SIPs built home by Roderick James Architects

Centre: This home, designed by Designcubed, makes the most of views over the internal courtyard garden

Bottom: This 120m² home in North London is split into two halves (separated by a courtyard) — a covered walkway provides connection between the two. A cantilevered balcony, supported by steelwork and sheltered by planting, also provides a private spot to sit







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SMART METERS A Smart Idea?

Smart meters are coming our way — but can we really expect them to make a real difference to our household bills? Energy expert Tim Pullen looks at the evidence



TIM PULLEN

Tim is Homebuilding and Renovating's expert in sustainable building and energy efficiency. He runs the green home consultancy Weather Works, advising clients on renewables and energy efficiency in the home

he Government has instructed energy companies to install smart meters in every household in England, Scotland and Wales by 2020. This means that energy suppliers will need to replace 53 million meters (30 million electricity and 23 million gas) at an estimated cost of £11 billion. As every homebuilder knows, the only thing we can rely on is that the estimated cost will not be the final cost.

What exactly is a smart meter and what does it do?

A smart meter is one that sends meter readings of electricity and gas to your energy supplier and to an in-house display (IHD). That is it — that is all it does. Essentially, it puts a display in the owner's hand that shows how much energy (electricity and gas) has been used in the past hour and day and eliminates the need for someone to read the meter.

The Government suggests that smart meters will give consumers:

- Near real-time information on energy use, expressed in pounds and pence;
- The ability to manage their energy use, save money and reduce emissions;
- An end to estimated billing people will only be billed for the energy they actually use, helping them to budget better;
- Easier switching it will be smoother >>>

ADVICE SMART METERS

and faster to switch energy suppliers to get the best deals.

The Government's stated motivation is that a smart meter will enable consumers to reduce the energy bills and the consequent CO₂ emissions. But as the smart meter does not tell the consumer where the energy is being consumed, it is difficult to see how that will work. It also seems to ignore human nature. The IHD is a gadget that might be interesting for a week or two, then its interest will diminish and it will be switched off, put in a drawer and forgotten.

Benefits for energy suppliers

But for energy suppliers, smart meters have two big benefits: they remove the need to employ an army of meter readers and allow for Time of Use tariffs, where people pay more (or less?) for electricity used at different times of day. The national electricity grid is under huge pressure — in some areas (south Wales, for instance) it is at capacity. Time of Use tariffs encourage consumers to use electricity at times of day when there is surplus electricity supply, typically midday and overnight.

The question is: will the supply companies reduce the price at those times or just increase it for consumption at peak times?

What does a smart meter cost?

There is no upfront cost to the consumer, but the cost of a smart meter will be added



The savings from a combined gas and electric smart meter is likely to be £26 a year, less than the cost of the meter. (A technician calibrates a meter here.)

to the energy bill. There is also a degree of uncertainty over the actual cost as the final specification of the smart meter is yet to be determined. The Public Accounts Committee has calculated that the cost should be £215 and that the consumer will pay £43 per year for five years (and obviously, energy companies being the upright organisations we know them to be, the bill will fall by £43 at the end of that period. This might be difficult to check, as there is currently no requirement for an explicit

entry on an energy bill to itemise the cost of the smart meter).

Will it save money?

There has been some research that shows that people who monitor their energy consumption tend to use less of it. Smart meters make it easier to monitor consumption but people who want to do that can do it with a standard meter. The Public Accounts Committee estimates that the savings from a combined gas and electric smart meter is likely to be £26 per year, which is less than the cost of the meter.

Problems with smart meters

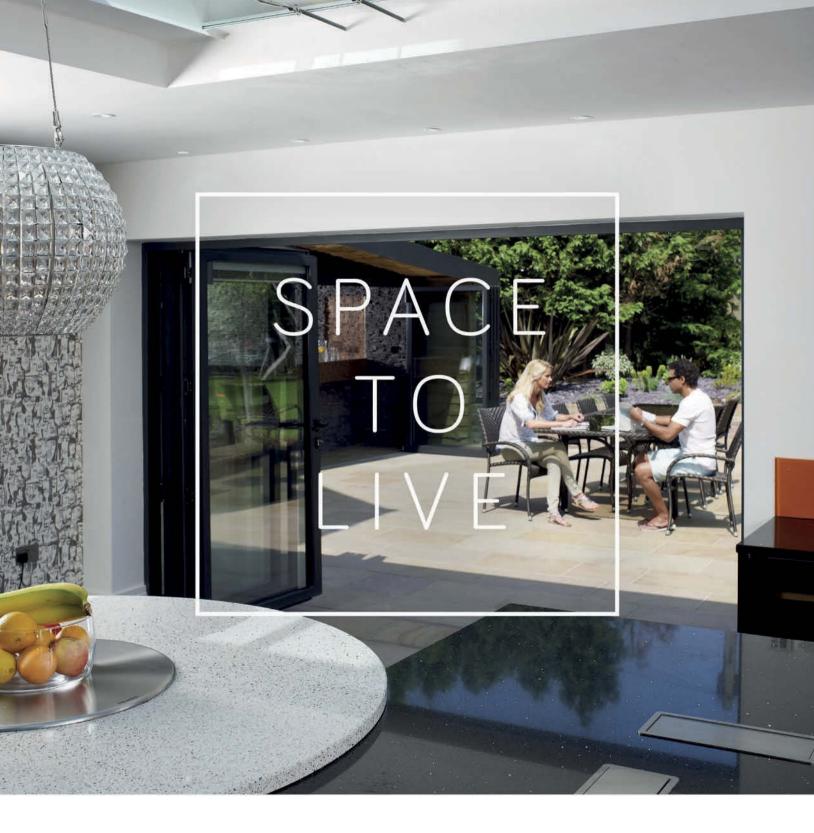
As yet, there is no single specification for smart meters, so each energy supplier can install its own device. This means that if the consumer wants to switch supplier, they may also need to switch the smart meter — and presumably pay for that new one. It is also likely that before the official roll out is completed, the functionality of the smart meter will be improved and the consumer will be urged to buy a new one (perhaps before the old one is paid off). And there may well be an app for your smartphone that does exactly the same thing, making the IHD redundant. Some critics, including Scottish Power and Which?, have suggested that smart meters are a waste of money and that at a cost of £11billion (to be paid by the consumer) the whole plan needs rethinking.



OTHER WAYS OF SAVING MONEY

There have been many articles in this magazine on how to reduce heating bills. Simple draught proofing will probably cost less than a smart meter and have a far bigger impact. Spend the £215 that the smart meter costs on LED lighting and reduce the electricity bill by at least 5%, rather than the 1% predicted for smart meters.





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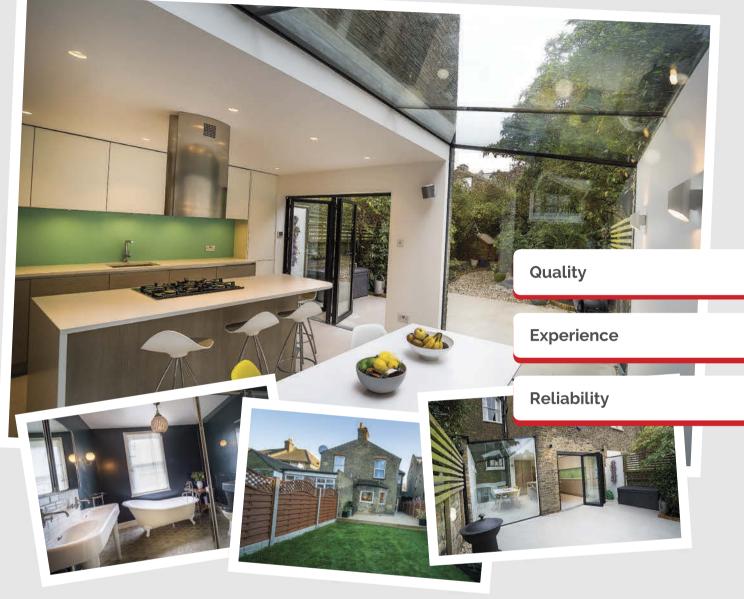
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TOUGHER SENTENCING Already in for Unsafe Sites

New sentencing guidelines have put health and safety on building sites firmly in the spotlight. Solicitor Chris Reeves explains how these changes could potentially affect self-builders and renovators



CHRIS REEVES

A construction solicitor and chartered building consultant (and former builder), Chris also acts as a specialist mediator in construction disputes



everal things about health and safety have caught my eye recently, ranging from the bizarre media reports that a university plans to ban its students from throwing mortar boards in the air on graduation day for health and safety reasons (really?), to the death of a 32-year-old subbie, killed when the trench he was working in collapsed on him in Lancashire. One of the consequences of his death was a £2.6million fine slapped on Balfour Beatty Utility Solutions Limited. The Health and Safety Executive (HSE) brought a successful prosecution against the company and stated that: "Balfour Beatty failed to adequately assess, plan and supervise the work being undertaken. Trench collapses are easy to prevent..."

Students will be pleased to hear that the HSE have confirmed that it's over the top to impose an outright ban on mortar boards. Its view on building site accidents is another matter. Good safety on site is about properly "assessing, planning and supervising" work — the consequences of cutting corners can be catastrophic.

The young man at the centre of the Balfour Beatty prosecution was James Sim from Barry in South Wales. James had been working at the site of an offshore wind farm in Lancashire when the tragedy occurred in April 2010. He had been working at the site for a week and was laying ducting for new cable when the 2.4m-deep unsupported trench gave way. He was on life support for 10 days; his family left the decision to turn it off to the hospital.

Balfour Beatty Utility Solutions Limited pleaded guilty to breaching Section 3(1) of the Health and Safety at Work etc. Act 1974, Regulation 31(1) of the Construction (Design and Management) Regulations 2007 and Regulation 3(1)(a) of the Management of Health and Safety at Work Regulations 1999. As well as the fine of £2.6million, they had to pay £54,000 costs.

James's mum said no amount of money could bring her son back...

The Implications for Building Sites

Accidents on building sites are not normally headline-grabbing news — but that could be about to change as we start to see much larger fines imposed by the courts.

When the HSE brings a prosecution against those that fall foul of health and

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ADVICE HEALTH & SAFETY ON BUILDING SITES

safety law, if the case has legs it will end up in court. Since 1 February 2016, the courts can impose unlimited fines on those that fall foul of the law. The sting in the tail is that the fines can be imposed even if the offence was committed before 1 February.

You might be thinking that a "guideline" may or may not be something the magistrate or judge reaches for when sentencing. Not so — the law makes it clear that every court **must** follow the guideline. The guideline specifies the range of sentences appropriate for the type of offence and the level of seriousness.

In the case of offences under the Health and Safety at Work etc. Act 1974, for individuals the sentence can range from a fine of 25 per cent of weekly income to two years in prison depending on a number of factors, including the "culpability" (for example, where there has been a "wilful blindness" but risks were nevertheless taken that will amount to high culpability) and the seriousness of the harm caused.

But what does this have to do with selfbuilders? Health and safety is all to do with the contractors — isn't it?

The law surrounding health and safety is complex and this update is no substitute for good advice on your obligations. Every project is different — not only in terms of the work that is being done but also the way it is organised. It is one thing to pay a builder to complete the whole job, and something completely different for you to take on and pay the individual trades separately, to act as a project manager on your own project. If you do not have a builder who is organising the site and sorting out the subbies but instead you fancy running the site yourself and juggling the trades then you need to be aware that you are "in control" of the site and inevitably have more influence on how safe the site is.

It is also fair to say that having work done or building a home as a one-off is miles away from the position you could find yourself in if you are building to make a profit.

What if you are building a property in your back garden and then selling it on? How about the serial self-builder? What if you are buying up properties to do up and let out? The HSE will in all likelihood treat you in the same way as a building contractor and be much more interested in you if there is an accident. The reason

for this is because the Health and Safety at Work etc. Act 1974 is concerned with the duty of "employers" to its "employees" as well as others not employed by them. So, as an example, Section 3(1) says: "It shall be the duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not thereby exposed to risks to their health or safety."

How about the Construction (Design and Management) regulations?

Under CDM 2015 – Construction (Design and Management) – regulations, organisations or individuals can be one or more dutyholders for a project. The "dutyholders" include commercial clients, designers, contractors, workers and also domestic clients.

Following an accident, the HSE will want to get to the bottom of who is ultimately in control of the site before prosecuting. Your position will partly come down to whether you are a "domestic client" who has construction work carried out on their home or the home of a family member, that is not done as part of any business, or a "commercial client" who has construction work done as part of their business. So, while the idea of being an "employer" or "commercial client" may not be that appealing in the context of the law on health and safety, the point to make is that one needs to think carefully about and then take steps to address health and safety on building sites.

If you are a domestic client your duties will usually pass to the contractor or designer. But does it really end there? CDM 2015 also requires that any domestic client who "controls the way in which any construction work is carried out" to comply

with certain requirements of CDM so far as they relate to matters within the client's "control". This is the problem with exercising any "control" over the work even if you are a domestic client.

Remember the option of acting as project manager and using subbies rather than a main contractor? Is that enough control for you to be caught by the CDM requirements to, for example:

- Ensure the site is made and kept safe for, and without risks to, the health of a person at work there.
- Ensure the site has sufficient working space and be arranged so that it is suitable for any person who is working there, taking account of any necessary working equipment likely to be used.
- Have the site perimeter identified by suitable signs and be arranged so that its extent is readily identifiable.

Remember, it does not take an accident to draw attention from the HSE, which is on a drive to spot-check smaller sites. Its inspectors will drop by at any time and close an unsafe site down in an instance. I remember on one occasion when I was working on site, the local HSE inspector made me jump out of my skin when he crept up on me when I was fixing some skirting board — he was pleased that I was using the correct voltage extension leads (110V) but I still felt I was about to receive a telling off!

Going back to those sentencing guidelines: if the HSE believes you are acting as an employer and have intentionally breached or shown a flagrant disregard for the law your culpability will be "very high". Coupled with any serious harm caused following an accident on your site, the risk of a spell in prison is real. The advice is to speak to your professionals that are taking on the design and the work. I class the builders and subbies as professionals by the way.

If you want to take on the role of project manager, then read up on the responsibility you are taking on. A good starting point is the HSE website itself, as well as The Self Build Portal.

Health and safety is easier to comply with than you may think, as common sense plays a big part. After all, would you be happy to work in an unsupported trench 2.4m deep? That's the height of a sheet of plasterboard.

Be careful of those graduation ceremonies by the way. Hard hats instead of mortar boards? Now there's a thought... •

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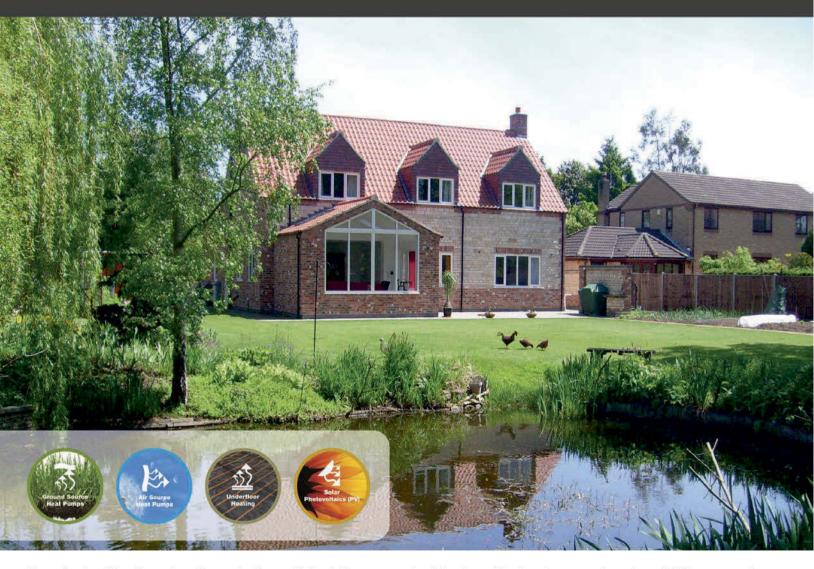
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20 YEARS OF PLOTS, PLOTS & MORE PLOTS...



Back in 1996, a new online tool to help self-builders find land and renovation projects burst on to the scene — Plotfinder.net. In this 10-page special, we look at how the plotfinding service has helped hundreds of people start their own build, beginning with the reflections of seasoned self-builder David Snell and his own role in helping Plotfinder subscribers find a spot to call home. We also explore what the future holds for plots, and share top plotfinding tips



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



t's been two decades since Plotfinder.net was launched, and you might think that much has changed in the plotfinding world. In fact, although the advent of Plotfinder.net was itself a game changer, nothing has really changed. The ability to find land is still one that seems to come easily to some while being, seemingly, impossible for others. I have lost count of the number of times that I have stood in front of a couple who are lamenting the 'fact' that, in their area, no plots ever come up.

Yet, in practically every case, I can pinpoint others who have identified and purchased a plot in their area and

started building while said other couple lamented their apparently fruitless task.

Land and plots are always available. Their source changes. Their designation - greenfield, infill, brownfield, backland, replacement, virgin or serviced - is open to change. But, for those who know where to look, how to look and how to recognise opportunity, their availability is constant. The number of plots and renovation opportunities on the database is currently around 14,000. But the emphasis has changed with the political landscape.

The first and perhaps the most constant of the garden plots has always been the infill plot, where a gap in the

street scene is capable of being filled. In the 1960s the concept was abused to the point where ribbon development occurred, but by the advent of Plotfinder. net, most people understood the principle that any extension of the settlement boundary was undesirable and to this day, most single plots are carved from larger gardens.

In the 1990s, the idea of building in a large garden behind an existing dwelling was a complete anathema to many planners. It was dubbed 'backland development' and severely frowned upon. Then, shortly after the start of Plotfinder. net, we had a Labour Government and one John Prescott became Secretary of State for the Environment. He felt that all garden land should be considered and designated as 'brownfield land', which meant that it was in the same category as land that had been used previously and that there was, therefore, a presumption in favour of development. This was manna from heaven for the building industry and the self-build world moved fast to exploit this new opportunity — until, a few years in, it clashed with Prescott's other contention that his preferred density was 30 dwellings to the hectare. Suddenly those who had been hoping to build their own home in their back garden were faced with the almost ludicrous situation of being told that they couldn't build one but that they were perfectly at liberty to build seven!

Replacement Dwellings — a Fruitful Source of Plots

Replacement dwellings were, and always have been, a super source of plots, especially in the south east, where there has often been a reluctance on the part of planners and councillors to expand the housing numbers. Even this source became open to challenge when a few authorities, followed by others, sought to limit the size of any replacement based on the size of the existing dwelling. In many cases, that resulted in a limit on

usable floor space amounting to no more than 50 per cent greater than the original, and in some cases, that increase was considerably lower or non-existent.

Those, of course, who understood the planning laws (particularly those relating to Permitted Development rights) were able to win more space by utilising the rights accrued to the existing dwelling, even if a new consent sought to remove those same rights from the replacement.

The density preference indicated by Prescott led to many gardens being developed as flats and, quite apart from the fact that this then removed the opportunity from self-builders, it began to alter the nature and character of many areas. Backland development then began to be called 'garden grabbing' and replacement dwellings began to be referred to as 'bungalow gobbling'.

There was much dismay when the Coalition Government came to power in 2010 and reversed the designation of garden land as brownfield. Many self-





Plotfinder Challenge in HB&R's September 2010 issue. They bought one half of a derelict granite cattle barn in Cornwall while another couple purchased the other half. The Moores wanted to retain the original granite façade on the gable end, while their neighbours preferred timber cladding. The couples found a solution by using both granite and timber on their properties



builders felt that the rug of plot availability had been pulled from beneath their feet and, indeed, for a time it did look that way. But alongside this new policy there was a scrapping of the highdensity targets and the upshot of that was (and remains to this day) that the development of side and back gardens in the form of single dwellings once more came into the realms of individual consideration on a merit basis. And that has put garden land of all types, infill or backland, back into the self-build ambit.

So what goes around comes around. The political cycle changes but the overall scene remains the same.

In the decades preceding Plotfinder.net, many local authorities made a habit of selling off serviced plots to self-builders, with large numbers being made available in areas such as Yorkshire, Wales, the Midlands and the south-west. As the land supply of these various authorities dwindled, the Commission for New Towns (CNT), later to become English Partnerships, took up the reins and its periodic plot releases were eagerly awaited and taken up. By the time Plotfinder.net came into being, these releases had all but finished.

Many put their faith in the National

Planning Policy Framework introduced by the Coalition Government and expanded on by the following Conservative administration. It put self-building on the map as an option but it did very little to increase the numbers and availability of single plots.

However, the Self-build and Custom Housebuilding Act, which came into force on 1 April 2016, is already having an impact — you can now register your interest in building a home with your local authority. Those of us who live in the self-build world are hoping that it will lead to a dramatic increase in the offering of serviced plots (more on page 91).

But the truth of the matter is that it will have to go some way before it eclipses the number and availability of plots offered by local authorities in the 1970s and 1980s. Most used up their land banks at that time and any new offerings may depend on partnership with others or Compulsory Purchase.

In the meantime, the supply of plots remains steady. It's not a deluge. It never will be on our small island. But it's a reqular trickle and the evidence for that is in the magazine, every month, with the case histories and stories of those who are building.

Plotfinder Challenge

A year after Plotfinder.net was launched, I was asked to write a new monthly series - Plotfinder Challenge. I would attach myself to a subscriber to Plotfinder.net and I would, with the help of the team, identify plots in their area that fitted their criteria. We would then spend an enjoyable weekend or couple of days viewing and analysing those plots and, hopefully, they would buy the plot of their dreams and I would write the story.

I appeared in this magazine for more than 15 years and, in that time, I saw an awful lot of plots. Sixty per cent of the time the challenge was successful and I am still in touch with many of those who have subsequently built their new home and quite a few who have gone on to do it several times over. Each one was a success in its own way. But, inevitably, some stick in the mind.

Mayur Odedra was an airline pilot who wanted to build his own home. We hit it off immediately and became firm friends - to the extent that I was best man at his wedding. Mayur built a large four bedroom house as his first venture on land we found together in Wiltshire and then went on to build two more very much larger properties next door to each >>>







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Alaris Aberdeen, 38 St Andrews Street, Aberdeen AB25 1JA Tel: 01224 502828 other in another Wiltshire village. To this day, he retains one of them but is now looking for a plot in Surrey, to be closer to Gatwick and Heathrow airports.

Paul and Larissa Killoran lived in a three bedroom semi in Rochdale. Paul is an electrician and Larissa a teacher. When we first met they didn't have children but they were definitely on the cards. We found them a plot in Heywood and they built a super three storey family house, where they have subsequently had two children. Paul rings me, keeps in touch regularly and comes to see me every year at the Harrogate Homebuilding and Renovating Show. He wants to do it again (although Larissa doesn't want to move).

"The lady saw me, screamed and came rushing out of the front door in high dudgeon... it took me half an hour to calm things down"

Peter and Carol Mathews wanted to retire to Suffolk and we found them a lovely plot down a tiny lane overlooking open countryside. They built their ideal retirement bungalow, and my wife and I went to visit them.

There are dozens of funny stories, which I don't have space to include here; at close on 200 'challengers', it would be an extremely long article and I have to beg their forgiveness.

Perhaps the funniest concerned Hugh and Avril, a couple from London, who are still building. They wanted to move to the country to build a new life and an eco house. They settled on Devon and we set out to look at the plots I'd identified.

Around mid-morning we arrived at the gate to what amounted to a small valley on the outskirts of a country town. The gate was locked. We'd all come an awfully long way and we didn't want it to be a wasted trip, especially as, right from the first sighting, we all knew that this was the one.

So I climbed the gate and they followed me up the drive to a small cottage nestled on the hill. I knocked at the door but there was no reply and I went around

PLOTFINDER.NET FROM QUIRKY TO AMAZING

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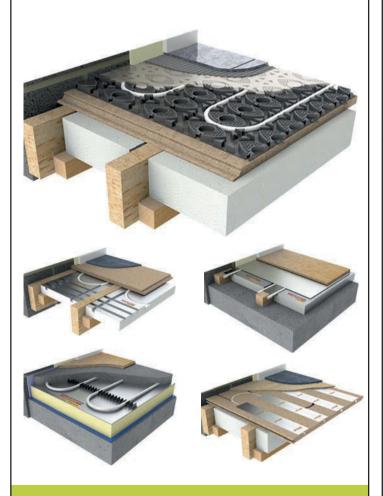


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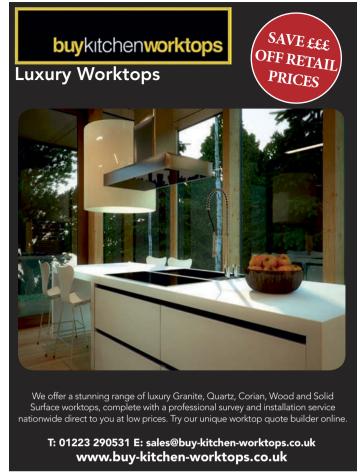
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the side to see if anybody was there. They were. They were in the bedroom in flagrante delicto. The lady saw me, screamed and came rushing out of the front door in high dudgeon and a state of undress. It took me half an hour to calm things down, during which time, the husband came to the door, buttoning up his clothes, and agreed to show us the property, which was everything we'd hoped for. It had several acres, which have now been added to. It had a river frontage and it was and is a little piece of heaven upon which Hugh and Avril are building an eco house.

If I am asked about the most innovative then that title must go to young couple Rosemary and Giles Jerrit. They wanted to build in London. We spent most of the time looking at quite depressing blocks of garages until we happened upon the most bizarre of plots. It measured just 8.5x11m and, as I remarked at the time, it was smaller than my kitchen. It was the end section of a garden of a semidetached house in Richmond, fronting a side road.

They built a basement home — with living spaces at ground floor level, and three bedrooms at basement. An internal courtyard helped to bring light flooding in. It cost a fortune but was worth an awful lot on completion and their vision and hard work has set them up for life.

But that's what self-building is about: a life-changing and life-affirming choice for all those lovely people that I am proud to have been a small part of.

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TRIED AND TRUSTED



We talk to Michael Holmes, chair of the National Custom & Self Build Association (NaCSBA), to find out how the UK is catching up with the rest of the world by taking the hassle out of not only finding land, but making it buildable

HB&R: What is a serviced plot?

Michael Holmes: It's exactly what it sounds like — a plot that's ready to build on. That means it already has the utility connections — water, gas, electricity and mains sewage, high-speed broadband and telephone — as well as access from the highway. So all the infrastructure you need to start building your home is already in place.

I've heard about custom build sites — are they the same?

Self-build means either DIY or selfprocurement, where you organise the build yourself. But with a custom build, you work with a developer who creates the house for you. That can vary from a company that will design and build the shell, with you then fitting it out yourself, or it could be the complete turnkey package, where you're handed the keys at the end. However, that's more about the building solution as opposed to the site itself; a serviced plot could be built on using either route.

Who are serviced plots aimed at?

They're ideal for anyone who wants to be able to build their own individually designed home. In any one year, there's around a million people who would like to do that if they could only find the plot, and that's the main obstacle. There are only so many infill plots; there are only so many existing old houses that need replacing. To meet anything like the demand we expect there to be for custom self-build perhaps 30-50,000 houses each year - there wouldn't be enough traditional building plots, so the only way to do it is to subdivide larger sites into individual plots, and make them buildable.

Who offers serviced plots?

Currently there are between 1,500 and 2,000 serviced plot opportunities

across Britain, but I think that will grow significantly. They are usually listed through local estate agents, but some might be available from major house-builders, or increasingly through local authorities. The biggest example is Graven Hill in Cherwell District Council's area, where they're trialling nearly 300 serviced plots with a view to creating about 1,900 plots overall — a self-build village.

Where are serviced plots?

Typically they'll be in areas where land is available. So there won't be many in the middle of urban centres, but in

Above: The vision for Graven Hill in Oxfordshire, set to become the UK's largest self-build village. Plans for the 190-hectare site include extensive open space, woodland, allotments, cycle paths, a primary school, community centre, local shops and a pub

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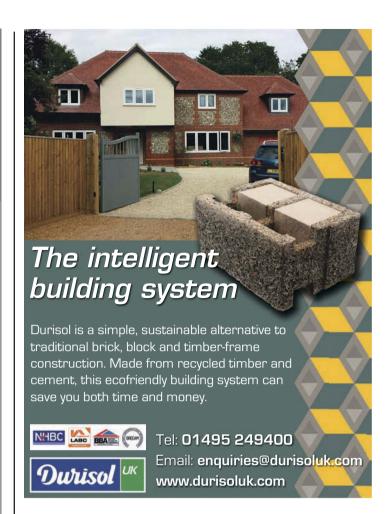




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towns and villages, and their outskirts, there will be larger sites that might not have been accessible to the lone self-builder but could be subdivided into individual plots.

Do the sites come with full planning permission?

They will already have at least outline planning and most likely detailed planning permission. Probably a condition of buying a plot will be that there are some parameters that you will have to work within, so you won't have complete freedom. You have to make sure that the conditions attached to the design on that site allow you the level of freedom that you would like. Quite often there'll be an imaginary box within

many people. In addition, some serviced plots will also come with the house built to at least foundations stage; for the landowner to recover VAT, they often need to have started the house. That won't limit your design choices, but it's another area of uncertainty that has been resolved for you.

Is it more or less expensive to build this way?

The ultimate in terms of cost saving is to be a DIY developer, but that involves risk. You're buying a plot; you don't at that stage necessarily know how much it's going to cost to build the foundations and bring in the utilities, or how much the final house is going to cost. But if you run the project efficiently,

"Larger sites that might not have been accessible to the lone self-builder could be subdivided into individual plots"

which you can create anything you want, subject to using an approved palette of building materials.

Do serviced plots cost more?

It can be difficult and costly to bring in utilities and access to a one-off plot — sometimes as much as the land again. So serviced plots will usually cost slightly more than conventional plots because you're also paying for the infrastructure. However, that will be spread across a larger site, so those costs can be mitigated.

Can I manage the build myself or do I have to use a particular company?

That varies according to the land ownership. You'll get some landowners creating serviced plots who will just want to sell them on and let you move from there within the planning system. There will be others where they're looking for a particularly strict design code, and they'll want to control the quality of the houses that are being built. So you might find that you have to work with a designer and builders that are attached to the site.

Do serviced plots make self-building easier?

A lot of people like the idea of self-building but think it's too complicated. So buying a serviced plot where you've got the certainty of knowing that everything you need to build the house is already in place is going to appeal to

any difference between what it's cost you to build and what it's worth is entirely your gain.

With a custom build opportunity, you are working with a developer, so they're going to be taking out a lot of the risk, but you're going to be passing on some of the saving as well. That said, it should still be significantly less expensive than buying that house as a finished property.

Will there be any impact on what the house is worth?

In terms of end value, a house on a serviced plot is no different to one on any other plot. Insurers and lenders won't distinguish between them. The design and the estate itself will have more of an effect, as there's likely to be a premium attached to an estate where there's a coherent design code, the owners have been driven to a particularly high build quality and all the houses work harmoniously together.

However, on an estate of serviced plots where all the houses are quite different, it might detract from the final end value, depending on what other people build.

Can anyone set one up?

Any landowner could potentially get involved in the serviced plot market — it's a real opportunity. Local authorities in England now have to observe the Right to Build, which is Government legislation that requires them to main-

tain a register of people who would like to build their own home, and then meet that demand for serviced plots with consented sites. So a landowner with vision could get permission on their land, put in the infrastructure themselves, perhaps in partnership with an enabling development company, and then sell those plots individually to people who want to build their own home, commanding a premium for them.

There are other cost benefits, too — not only is self-build zero rated for VAT, but serviced plots are also free of the Community Infrastructure Levy and Section 106 agreements, as long as the site will have 10 homes or less. Each of those savings is individually worth anywhere between £15,000-£30,000.

Are there any disadvantages?

A serviced plot is likely to be part of a small estate of two or three houses, but it could be on an estate of several hundred, so that means you're going to have neighbours, and for the first few years, unless you're the last in, there will be other people building.

Are other countries building like this?

The serviced plot market is tried and tested in many other countries. In Germany, for example, 40 per cent of new housing is custom self-built and most of that is on serviced plots.

In Australia, New Zealand, America and France, typically it's anywhere from 30 to 60 per cent of new housing, while in Belgium and Japan, it's as much as 90 per cent. The UK is the exception where the market has been dominated almost totally by the major housebuilders.

Do you think that serviced plots are the future of self-build?

The best person to decide how a house should be designed, how it should be specified and how much it's going to cost to run and maintain is the person who's going to live in it. So this is a really healthy way to create a diverse and affordable housing market, with supply of new housing meeting the demand.

How can I find out more?

To find out more about the Right to Build and to register your interest in self-building, visit <u>righttobuildportal.org</u>, which lists all the registers across the UK. If you're looking for a plot now, visit Plotfinder.net, which is a national database of land opportunities. **①**





20 TIPS FOR PLOTFINDING SUCCESS

Buying the right plot is the first vital step on your self-build journey.

HB&R's panel of experts have put their heads together to offer the ultimate collection of advice to start you off on the right path

OPEN YOUR EYES UP TO OPPORTUNITIES

If you drive around your favourite towns or villages, you'll see plenty of potential plots. They'll be old buildings that have fallen into disrepair or disuse. They'll be large side gardens that in the street scene have become incongruous due to the fact that many of their neighbours have developed similar plots. They could be large back gardens where a plot could be formed with its access either running through from the road at the front or, better still, from an existing side access. They could just be vacant parcels of land hidden away behind walls or hedges. Plots are everywhere. Why are they still there? Because either those who own them don't realise their potential, or they've decided they don't want to cash in on that potential just yet. David Snell, plotfinding and self-build expert

APPROACH POTENTIAL PLOT VENDORS
If you find a good opportunity that isn't on the market, you must obtain the courage to knock on the owner's door and ask if they'd like to sell. They may tell you that they're fed up with being bombarded with requests to sell their land. But they may be willing to entertain your ideas. The thing to impress upon them is that you're not a developer — you're a self-builder who wants to create their own home and anything you build will preserve the value and amenity of their home. David Snell

LOOK AT LOCAL PLANNING
APPLICATIONS ONLINE
Identify building plots before they
come on to the market by scouring weekly lists of planning applications and decisions — usually published
on local authority websites. You can also
use Google Maps to identify potential infill
plots as gaps in the streetscene that might
have potential. Sally Tagg, planning consultant and MD of Foxley Tagg Planning

KNOCK IT DOWN
AND START AGAIN
The easiest way to find a building plot is to buy a dilapidated house on a good site. This means, critically, that the principle of a house is already established, and you won't be battling with planners for change of use. You could potentially live in the house for a couple of years while you are thinking about what to do.

Piers Taylor, architect and founder of Invisible Studio Architects

GET ON ESTATE

AGENTS' LISTS

There's no harm in registering with local estate agents as well as online sites such as rightmove.co.uk, but it shouldn't be the only thing you do. In most areas there are only one or two agents who are likely to deal with land — identify them and pester them to keep you informed. David Snell

ENLIST THE HELP OF PROFESSIONALS Whether you call upon local architects, builders, package suppliers or planners, speaking with those in the know can unlock plenty of opportunities that others hunting for a plot might miss — some architects and package suppliers even accumulate lists of available plots to encourage development in their areas. The first step is make contact with local builders and architects. Chances are, if you drive around the area you will notice builders' boards with their contact details on. Speak with them to see whether they know of any land for sale in the area that the bigger developers aren't interested in — they have plenty of insight which you can benefit from. Daisy Jeffery, HB&R's **Features Editor**

EATURE: MELANIE GRIFFITHS

A large number of good opportunities go through auctions — either specialist auction houses or the auction arms of local estate agents. They're not always hugely well advertised unless you register first, so establish the key agents in your area who sell through auctions and get on their list for catalogues. The majority of disposals from major companies, former national utilities and repossessed properties go through this route.

Plotfinder.net has comprehensive relevant auction listings (subscriptions start at £5 per month, see page 99). If you see something you like and have satisfied yourself of its viability, make an offer before the auction date. Jason Orme, HB&R's Editorial Director

DO MORE THAN ONE VIEWING
A first look will really concentrate on whether the plot is in the right location and price range. Only then can you begin to assess where the boundaries are and how wide and deep the plot is. It's always a good idea to drive on past the plot and approach from a different direction to gain a different perspective.

Always make a second visit be-

fore you take matters further; you'll notice things you didn't see before. You'll notice where the neighbour has encroached on the land and may be seeking to gain permanent possession of part of the plot. You'll look out vegetation that might either impede the development or give an indication of conditions below ground. Back home you'll be able to make some checks on property values and you'll be able to make a clearer assessment of value. David Snell

11

DON'T ASSUME YOU CAN CUT DOWN TREES ON SITE

Check whether any trees on site are subject to a Tree Preservation Order (TPO). If a plot features a tree – or trees – with a TPO, then any design scheme must take into account the preservation and protection of that tree. **David Snell**

CHALLENGING PLOTS CAN YIELD THE BEST DESIGNS
The most interesting sites for new builds are the funny leftover parcels of land that are typically overlooked but can be found in many places in our cities and towns, such as easements owned by statutory authorities and rail networks, or brownfield industrial sites or old garages — all with constraints that, for the resourceful, can be overcome.

For me, the quirkier and more unusual the site, the better. I love

strange slots and wedges of land, and steeply sloping sites. Even many ordinary housing estates have these pieces of land left over — the housebuilder can't lazily plonk down their standard product on them, so leaves them vacant. Friends of mine have bought a triangle of land suitable for building on directly from a housebuilder for £30,000. Usually, approaching the owner of the site direct can work well, and statutory authorities can be relatively straightforward to deal with. **Piers Taylor**

CONSIDER CUSTOM BUILD AND SERVICED PLOTS If you can get in touch with like-minded self-builders in your area and act together to raise funds, you could buy a plot that perhaps would be out of the reach of an individual self-builder. There may also be custom build enablers and/or serviced plots available in your local area (see page 91 for more details). Hundreds of plots are beginning to come to market through these routes, thanks to developers and local authorities releasing land for large-scale individual homebuilding. Daisy Jeffery

DO CHECK PLANNING IS IN PLACE Make sure your chosen plot has a current planning permission and that it has not expired or is about to expire. There is no guarantee that you will be able to successfully reapply.

MAKE PROPER LEGAL CHECKS
You'll need a good solicitor experienced in conveyancing for the particular issues that a building plot throws up (as opposed to a house). These include checking for covenants, easements, access, rights of way, and so on. You should be clear with them about what you want to do — it is then their responsibility to make sure it can happen.

Jason Orme

Bear in mind, too, that the permission the site actually comes with is unlikely to match your dreams entirely. There is nothing to stop you continually applying for your chosen design, but the existing design (and approvals process in particular) should give you a good clue as to the possibility of, say, increasing the approval from a bungalow to a two-storey home. If you do happen to find a plot that already comes with outline or detailed planning permission, then assess this consent carefully and be sure that if the plot has outline planning permission, that again this hasn't yet run out. Look at the Design & Access Statement that accompanied the original application to see what the potential of the plot is. **David Snell**

BEWARE COVENANTS
AND RANSOM STRIPS
If a small strip of land –
it may only be 150mm
wide – between the
plot and the highway isn't included in
the plot, it may be a ransom strip.

A ransom strip may exist to prevent the land being developed. Maybe that is its sole purpose, but more often than not its purpose is to extract payment for its release. It comes about most often when a party agrees to sell land with little or no immediate prospect of it being built upon but they want to have some benefit or clawback if it ever does get planning permission in the future. The normal or recognised value of such a ransom strip is one third of the uplift in the value of the land with planning permission over and above its value without it.

Another way of obtaining a clawback is for the land to be sold with a covenant requiring payment of a specified amount or percentage, in the event of it being developed or developed further than originally envisaged. Your solicitor will want to make you aware of such a covenant in their report on title, prior to formal contracts being exchanged. However, your solicitor may not be aware of, or may not notice, any discrepancy in the measurements of the land leading to ransom strip. Which is why a careful survey is always to be recommended. **David Snell**

BUY SUBJECT TO CONSENT

If you find a suitable plot but it does not have planning permission, you will need to enter into a contract with the landowner. This should be conditional on achieving consent — never agree an unconditional contract, which effectively means that you will buy the site regardless. Sally Tagg

WATCH OUT FOR JAPANESE KNOTWEED Japanese knotweed is number one on the list of the UK's most invasive plant species. It can break through cracks in mortar, expansion joints in concrete, splits in drains and joints in paving. The most common form of damage, however, is caused by laying a hard surface, such as asphalt, concrete, patio slabs and the like, over Japanese knotweed-infested ground. Covering over the plant might hide it temporarily, but it won't solve the problem in the long term.

There are a few different methods for eradicating it, and getting a reputable professional in is advisable. **Nic Seal, MD of Environet**

CHECK IT STACKS UP FINANCIALLY

Work out your rough build costs using HB&R's free calculator (homebuilding.co.uk/calculator), add them to the plot price and you should end up with a figure that is at least 20 per cent below the estimated value of the finished house (get the selling agent to estimate one for you). If the end value will be less than the land and reasonable build costs (plus a small profit margin), you will be in a good position to negotiate the plot price down. Jason Orme

CHECK GROUND CONDITIONS
It's a good idea to commission a soil survey as soon as possible to determine the ground conditions and subsoil type before carrying out work. It is often just as well to also talk to the building inspectors

at the local authority — they will have seen everything that has been built in the area and their profound knowledge could end up saving you a fortune in the long run. Even in worst-case scenarios, it is unlikely that any extra foundation costs will endanger the viability of the plot. They may, however, restrict what you can build. **David Snell**

INVEST IN GOOD DESIGN Gaining planning permission is a much misunderstood process. Often, planners are seen as the enemy, or as wanting the most banal of house designs, but in my experience, they are far more intelligent than people give them credit for. Fitting appropriately into a context does not mean the banal pastiche conformity of superficially copying what is around, but instead, building a richer and more sophisticated picture. If the principle accords with policy, planners will usually be delighted to see a well-designed alternative to a dumb, 'fitting-in' box. Aim high for the best possible building, with the best possible architect. Good design has real currency here, and will, above all else, help you gain consent. Piers Taylor

CHECK THE **ACCESS AND SERVICES** A 'plot' is not a plot without proper access. If it's got planning permission, then the original application will have included details of the access arrangements. Never forget that planning says that you may build; it does not say that you can build. If there is a legal or physical impediment to you building then that impediment is not overruled by the granting of planning permission. So if there is a need to bring in or pay off third parties in order to obtain an access or visibility splay, this needs to be dealt with before you purchase the plot and any costs should be either paid by the vendors or reflected in the price you pay.

In a similar vein, principal services such as sewerage will also have been referred to in the application. But just because it says 'connection to mains drainage' does not necessarily confer a right to do so. If a third party agreement has to be made, then this needs sorting out in your favour before you make the purchase. David Snell •

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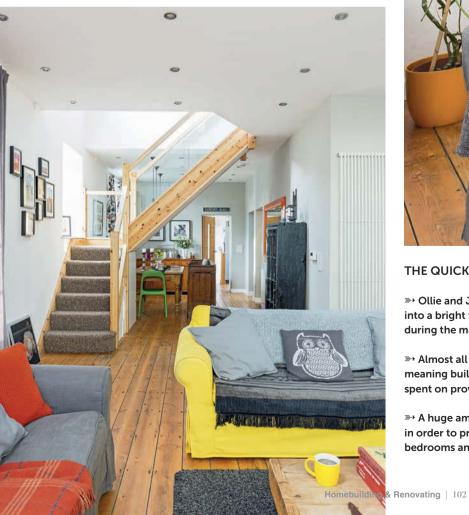












Open Plan Spaces The large open plan living/dining space has been separated into zones, with the timber and glass staircase visually dividing the space. The living area can be viewed from the newly created first floor (which hosts three bedrooms), while



THE QUICK READ

- >> Ollie and Jessica have converted a disused Methodist church into a bright family home. They lived in a static caravan on site during the majority of the build
- >> Almost all the work has been carried out on a DIY basis, meaning build costs of just £175,000 — including a hefty £18,000 spent on providing a sustainable water source for the property
- >> A huge amount of steelwork has been built into the property in order to provide a first floor, which now provides three bedrooms and a family bathroom



henever you hear of people who have not only designed a project themselves, but who have also undertaken pretty much all of the work on a DIY basis while living in a caravan on site, you can't help but feel huge amounts of admiration for the commitment and sheer determination it has clearly taken for them to achieve their dream home.

This is exactly the route that Ollie and Jessica Allen have taken to arrive living in their stunning church conversion, packed full of original features and quirky new additions.

"We bought the property from the Methodist Church," explains Ollie, a property developer and trained product and furniture designer who has, more recently, diversified into focusing more on the interiors side of things. "The Church had already obtained planning permission based on the designs of a local practice, but when we bought it we tweaked it a little and therefore had to resubmit."

Being situated in the Peak District National Park, there were stipulations regarding what could and couldn't be done. New windows had to be timber and of a traditional design and the huge stained glass windows had to be left well alone — something Ollie and Jessica were only too happy to adhere to.

The Project

The couple bought the church for £146,000 in January 2013 and initially lived in another property that they had recently developed

HOMES CHURCH CONVERSION







Kitchen

The kitchen was purchased from B&Q and is separate from the rest of the open plan spaces. At one end the kitchen leads into a breakfast room and out into the garden through French doors



Dining Area

Despite being open to the living space, the dining area feels separate thanks to the positioning of the new staircase which visually divides the space

nearby, before moving into a static caravan on site in July, along with Moss the dog and Silver the cat — all while planning their wedding. "The caravan was functional, but not comfortable," admits Ollie, who also project managed the conversion. "It was great to live on site and to be able to dip in and out, but there was no escape either which was very stressful — we'd rent somewhere if we did it again."

A Blank Canvas

Despite its history as a religious building, the church, built in 1876, was actually little more than a bare hall when Ollie and Jessica bought it. "It was in a state of disrepair," explains Ollie. "There hadn't been a congregation in it for about four years and all that was inside was an old village hall really — it was just a draughty shell waiting to be loved."

In order to create spaces more suited to a family than a congregation, existing ceilings were ripped out and the crumbling plaster stripped from the walls, before work began on carving out liveable spaces from what was essentially just one large open space.

HOMES CHURCH CONVERSION







On the ground floor the kitchen space has been opened up to a breakfast area, both separated by a thick masonry wall from the open plan living and dining spaces beyond. A newly built wall forms a studio for Jessica's jewellery business, where she can meet clients. This room was originally designed as a guest room with en suite, but after the birth of their daughter Carmen, now six months old, the couple decided it made more sense for Jessica to be able to work from home more regularly.

In order to create a first floor, a structural engineer was brought in to design steelwork that now spans the majority of the roof-space. Before this work could be carried out, the old roof had to be stripped, rotten timbers replaced, and a new roof, consisting of reclaimed slates, installed.

Three bedrooms and a family bathroom are now housed on the first floor, with the two smaller bedrooms featuring glazed internal windows that overlook the ground floor living space below and, in particular, the beautiful original stained glass windows. The master bedroom is no less characterful, with its circular stained glass window, original timber beams and cosy woodburning stove.

On the ground floor, the original 140-year-old timber floor has been sanded and oiled, while the other original features such as the impressive windows and huge front door have been brought to life



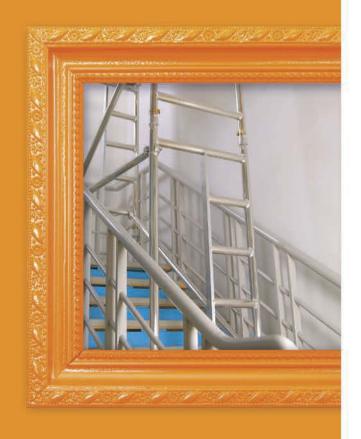
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HOMES CHURCH CONVERSION

with a combination of traditional pieces and more contemporary additions, such as the woodburning stove with its stainless steel flue rising majestically between the two arched stained glass windows, and the bespoke glass and timber staircase that allows light from either end of the space to flow throughout the layout.

Overcoming Obstacles

Ollie and Jessica were keen to pull as much natural light into their new home as possible, so five large rooflights have been inserted into the rear of the property, where windows have also been lowered in order to allow for larger openings.

The church is not on the water mains, so a borehole water extraction system was required — in fact, planning stipulated that no work could start on the building until a sustainable water supply had been put into place. A well digging company was employed to install a borehole 30m below ground level which is fed by a natural water stream.

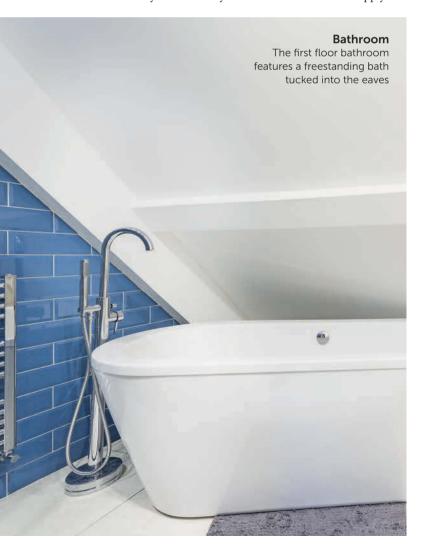
An electrical pump is triggered when a tap is turned on, providing the house with water all year round. It was also discovered that there was a high level of iron content in the water which had to be remedied by a filtration system to ensure the water supply was drinkable. This added hugely to the overall build cost, totalling around £18,000 in all. Additionally, Ollie and Jessica were required to install a sewage treatment plant which added another £10,000 to their costs before work on the church itself had even begun.

Elsewhere, however, a lid was kept on costs by carrying out almost all the work, bar the plumbing and electrics, on a DIY basis and making sensible choices when it came to the fixtures and fittings. The kitchen is from B&Q and despite admitting that they could, in retrospect, have opted for a higher spec kitchen, Ollie concedes that the money had to be spent elsewhere.

Low Running Costs

According to Ollie, the house enjoys very low running costs, thanks to plenty of roof insulation and insulated plasterboard on all the internal walls, along with the very effective woodburning stoves. This is something which might come as something of a surprise for a period building such as this.

"For us, this house is brilliant," sums up Ollie. "We enjoy having a separate kitchen, the large open plan areas allow us plenty of space for parties and friends and the separate studio makes it easy to use the space for both living and working."





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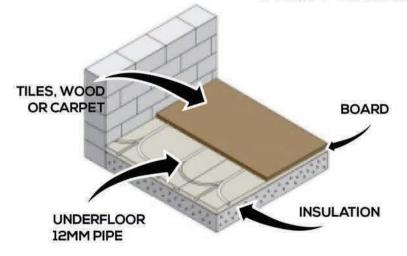
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HOMES CHURCH CONVERSION

The Project



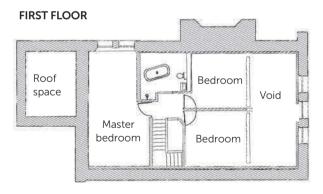
Ollie and Jessica Allen Owners/Designers

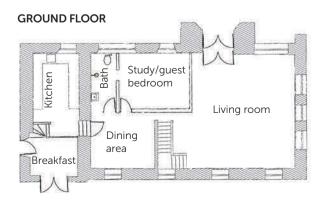
THE HOMEOWNERS'/DESIGNERS' VIEW

The open plan living we have here is great — we have plenty of space and large rooms which are ideal for working from home, family life and entertaining lots of family and friends. We need more storage, as every family does, and I suppose our floorplan could have included a store room or airing cupboard as we miss out on this. Other than that, it is brilliant — the space evolves and our interiors have developed.

My advice to others would be to ensure you have a good contingency fund as jobs will evolve and finishes will change. The more time you spend walking around your build and working in it, the more you will understand the space and how you will use it. You may want to alter the design during the build process which can increase costs slightly, so do take time to plan your finishes and the interiors — and allow yourself a good budget for interior finishes.

I am not sure we've finished yet, either. We have plans to develop the cellar, which follows the footprint of the church and would allow two more bedrooms and a second lounge area and office.







SELECTED COSTS

Water borehole	£18,000
installation	
Sewage treatment	£10,000
plant	
Plumbing, bathrooms	£15,000
and sanitaryware,	
including tiling	
Kitchen and	£4,500
installation	

SUPPLIERS

Architectural drawings, layout and main contractor Ollie and Jessica Allen	
Structural engineer Martin Evans	
Associates 0114 267 6520	
Materials supplier MKM Building Supplies.	
mkmbs.co.uk	
Window manufacturer	
The Online Window Shop	
theonlinewindowshop.com	
Dinak stainless steel twin wall flue and	
stove Stove World UK	
stoveworlduk.co.uk	
Kitchen Cooke & Lewis at B&Q	
diy.com	
Sanitaryware Plumbase	
plumbase.co.uk	
Roof windows ROTO Conservation	
Windows http://uk.dst.roto-frank.com	

HOMES CONTEMPORARY SELF-BUILD

Power of Three

Lisa and Nigel Dunnington's ambitious new build combines three distinctive elements into a showstopping ICF (insulating concrete formwork) home

Words: Debbie Jeffery Photography: Jeremy Phillips

uilding our own home had been a lifelong ambition, and when a derelict farm with nine acres of land came on to the market it offered the ideal opportunity to finally make it happen," begins Lisa Dunnington. "The old farm cottage came with a range of run-down outbuildings, and detailed planning permission had already been granted to demolish what was there and replace it with a house."

The property occupies an elevated position on the hillside above Garstang in Lancashire, overlooking the Fylde coast, with views north to the Lakeland Fells and as far south as the Welsh hills. Lisa, her husband Nigel and their children Hannah, now 12, and Sam, 10, were excited about the prospect of living in such an amazing location, and purchased the farm in 2012.

A Reflection of the Rural Setting

The existing house plan for the site was far from ideal, and the family decided to appoint local architect Peter Bamber to design a new house which would meet all their needs. "He was really easy to work with and made sure that everyone had a say about what they wanted from the house," explains Lisa. "Then he somehow managed to tie together these random ideas into one unified design with a contemporary feel."

This involved connecting three distinct structures to create a modern take on a farmhouse and barn conversion, which reflects the rural setting and surrounding farmhouses — many of which are built from stone with slate roofs.

"We designed a smaller rendered house block and a larger 'barn' clad in Lakeland slate — connecting the two with a contemporary lightweight structure using frameless glazing," explains Lisa. Detailing was kept simple, with traditional stone heads and sills to the house wing and stone jambs to the barn. The glass link has clean lines and cedar cladding, which echoes the old timber buildings that originally stood on the site.



Front Elevation

The house is made up of three connected elements: a rendered two-storey 'house' wing comprising the master bedroom suite and sitting room; a glass entrance link; and a barn-style structure. (Homeowner Lisa Dunnington is seated in front of the property's garden pod summerhouse from John Lewis)









Staircase/ Entrance Hall

Two angled ICF walls form the wedge-shaped entrance link, clad internally with dark grey slate-effect tiles. Lisa designed the staircase in the barn wing, with walnut treads made by a local carpenter to match the joinery of the adjoining glass link

Each section has its own distinct character, but the entire property was constructed using Beco Wallform ICF (insulating concrete formwork), which the Dunningtons chose for its fast build time and high levels of insulation.

"Most of our accommodation is in the barn, which has a garage, cinema and utility in the basement, and Beco Wallform was ideal for building down into the ground," explains Lisa, who project managed the build, together with main contractor and close family friend Ian Merridew.

Thousands of tons of sandstone needed to be dug out of the side of the hill to create the basement and retaining wall structure, and much of this was used to form external levels and define landscaped areas around the house.

A Serious Setback

"There's so much steel in the foundations I'm pretty sure they could support the Eiffel Tower," says Lisa – an accountant by profession – who was on site daily, overseeing the project and ordering materials. She also helped out when it came to building the ICF walls, although her efforts were brought to a swift end when she lost her footing and fell from the scaffolding, injuring her back.

"I wasn't concentrating and the next thing I knew I'd fallen 15 =>











feet on to my head," she recalls. "I hit a scaffolding pole on the way down, which broke my fall, and was literally seeing stars. To be honest I was lucky to be alive, and after that I developed a healthy fear of heights."

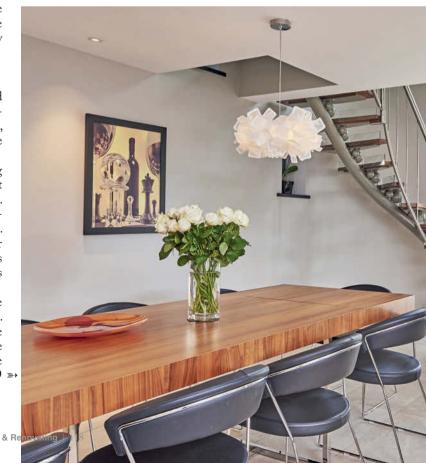
Sustainable Features

The barn element of the structure, which sits on a concealed bed of cement mortar, has been clad externally in Lakeland slate, carefully laid to resemble dry-stone walling. This was a long process, undertaken by specialist stonemasons, and the result helps to give the house its distinctive character.

Internally, natural materials have also been selected, including slate wall tiling in the double-height glazed entrance, where different flooring emphasises the angled walls of this wedge-shaped structure.

The family home has been built with a view to long-term sustainability and has already proved to be extremely energy efficient. A 60m-deep borehole was sunk which supplies water, together with a ground-source heat pump which provides hot water and is connected to the underfloor heating system. Air conditioning has also been installed in the bedrooms.

"Building our own home had been a lifelong dream, and the whole process has been amazing from start to finish," says Lisa. "What makes me really happy is that people visiting for the first time often comment on how homely the house is, which I take as a huge compliment, given its size. We're exceptionally proud of what we've achieved and feel really lucky to live in such a beautiful place." \bullet







Open Plan Family SpacesThe family spend the majority of their time in the open plan kitchen/dining/living room on the ground floor of the barn, where underfloor heating has been laid under ceramic floor tiles. Clever lighting design helps to define the different areas



HOMES CONTEMPORARY SELF-BUILD **Right and below right: Bedrooms**Four bedrooms and a den for the children are located on the first floor of the barn, with the master suite positioned separately in the rendered wing











Bathrooms
The stylish
bathrooms have
been designed
to provide views
while maintaining
privacy; they also
feature sleek
walk-in showers





HOMES CONTEMPORARY SELF-BUILD

ICF: How it Works

Lisa and Nigel's decision to use insulating concrete formwork was based on its insulating properties and fast build time. Debbie Jeffery explains its key benefits



nsulating concrete formwork (ICF) is an insulated concrete building system that is quick to construct yet offers high performance levels. It combines the intrinsic strength of concrete with the exceptional thermal insulation properties of polystyrene to produce cost-effective, durable structures. The most common materials used for the ICF forms are expanded or extruded polystyrene. Externally the walls may be clad in virtually any material, including brick, stone, tiles and timber, which will need to be tied to the shell of the house using either built-in fixings or wall ties. Render may be applied directly to the outer layer of polystyrene.

Speed of Construction

ICF walls can be built directly off any suitable foundations, and water-resistant concrete may be specified for areas where a damp-proof course would be needed. ICF is ideal for basement, retaining wall and swimming pool construction, where reinforcement would be required to cope with potentially significant loadings.

"High performance standards are achieved with fewer building components and without specialist plant and equipment, resulting in more reliable construction using materials which will not deteriorate over time," says Robin Miller of ICF specialists Beco WallForm (becowallform.co.uk). "Whether building to basic Building Regulations or Passivhaus standards, the building process is the same."

ICF panels and blocks are light and easy to handle without mechanical assistance, and the components are delivered to site in packs or bags. The blocks and panels interlock vertically and horizontally to form a continuous void that is then filled with concrete, and the two leaves of formwork are held together by a matrix of polystyrene, plastic or metal connectors.

Blocks and panels are quickly cut to shape on site using a hot wire or a hand saw. Lintels are light, preformed components that are manufactured to suit specific opening sizes and delivered as part of the ICF package to interlink with the other components.

"Using in-situ concrete results in a building structure which easily accommodates features such as solid and cantilevered floors, vaulted roofs and wide bifold doors. Equally, the selection of claddings is not in any way limited," adds Robin Miller.

The basic structure is typically erected by a team of three or four site operatives, and filled by pumping a very workable concrete in storey-high lifts. Although all ICF systems are designed to withstand the hydraulic pressures of wet concrete, it's important that the concrete is specified, placed and compacted correctly to avoid failure of the formwork. There is little need for mechanical handling, plant or equipment, so there is less site noise, too — plus the lightweight materials can be easily carried. The formwork remains after the concrete has cured, and becomes an integral part of the building's insulation.



HOMES CONTEMPORARY SELF-BUILD

The Project



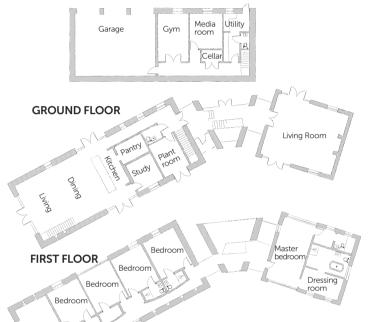
Peter Bamber. **PGB Architectural** Services Architect

THE ARCHITECT'S VIEW

It's important to understand the characteristics of a site – where the sun rises and sets – and in this case, the rocky topography was an issue, with differing levels, vegetation and a neighbouring property to take into account. The balcony on the barn building helps to create a baseline, and from a design point of view it was about how the house sits in the landscape and enjoys the views. The planners had quite an impact on the design, and were nervous of its dominance, so a few features had to go.

The way the rooms flow was vital in terms of day-to-day living, and as it's an exposed site, the entrance was also important - allowing the family to drive into the garage and walk straight into the house. The landscaping is evolving, with a number of trees planted to soften the impact of the building. It is a complex design, and linking the three elements and different materials was a challenge.

LOWER GROUND FLOOR



COSTS

Total

Preliminaries, including	£35,000
Foundations including groundworks and levels	£175,000
Superstructure (ICF, cement, steels and labour)	£125,000
Doors, windows, glazing and balconies	£150,000
Roof	£42,000
Stone and masonry	£95,000
Heating and plumbing	£75,000
Ceramic flooring	£90,000
and tiling	
Electrics	£90,000
Kitchen	£74,000
Staircases	£60,000
Ground-source heat pump	£40,000
Cinema and Control4	£89,000
system	
Lighting design and supply	£35,000
Professional fees	£45,000
Labour, building supplies	£380,000
and interiors	

£1,600,000

PROJECT TIMELINE

Jul 12 Plot purchased Jan 13 Planning application submitted Feb 13 Demolition

May 13 Planning permission approved Aug 13 Foundations completed

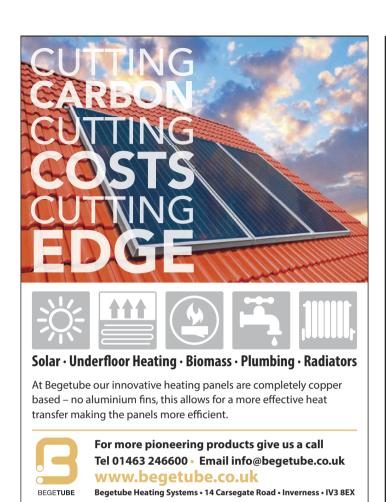
Dec 13 Watertight shell Apr 14 First fix Jul 14 Second fix Oct 14 Date occupied

SUPPLIERS

Architect PGB Architectural Services
01254 820092
Main contractor Merridews
07966 271282
ICF Beco Wallform becowallform.co.uk
Glass link Artisan Glass Structures
artisan-glass.com
Slate-effect interior tiles Vogue Ceramics
vogueceramics.co.uk
Staircases RWH Iron Design
rwhirondesign.co.uk
SieMatic kitchen Stuart Frazer
stuartfrazer.com
Structural engineer Glanville
glanvillegroup.com
Lighting designer The Ultimate Lighting
and Media Coulmc.co.uk

Cinema and Control4 system Nirvana Audio Visual	
nirvanaaudiovisual.co.uk	
Stonework TA Lawmasonry.co.uk	
Roof slates, walling stone, sills, quoins	
etc Burlington Stone	
burlingtonstone.co.uk	
Sanitaryware Duravitduravit.co.uk	
Windows and curtain walling	
Altitude Aluminium	
altitudealuminium.co.uk	
Garden pod summerhouse John Lewis	
johnlewis.com	
Feature lighting, bar stools and dining	
furniture Scossascossa.co.uk	
Turriture 3COSSa SCOSSa.CO.UK	

.....room-makers.co.uk







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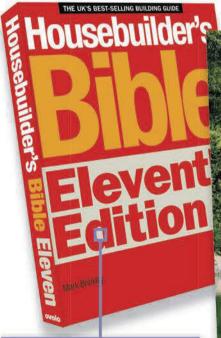
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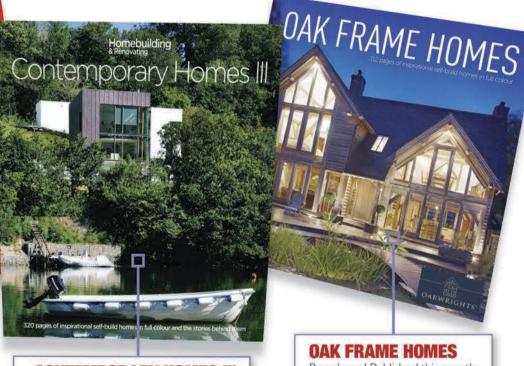


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HOMES TRADITIONAL-STYLE SELF-BUILD



THE QUICK READ

- ⇒ John and Jude Turner have self-built a traditional home in the Gloucestershire countryside, after exploring the plot with Homebuilding & Renovating's self-build expert David Snell
- ⇒ Thanks to its local Cotswold stone façade, the new dwelling looks centuries old blending in perfectly with its surroundings
- ⇒ Despite underestimating what the project would cost, careful planning and material sourcing meant that the couple brought the high-spec 310m² build in at just £1,306/m²

hen you're waking up at 3am because your mind is going over all of the decisions you've got to make and worrying over all the things that need to be done, it certainly makes you question everything — you can't walk away though, you have to see it through. Looking back now, it's definitely been worth it," says John Turner of his journey to create a traditional-style self-build with his wife Jude. The result is so successful you'd certainly be forgiven for thinking the couple's new home is centuries old.

Local to the area, the Turners previously lived in a Grade II-listed Cotswold stone cottage half a mile away. With young children, the couple were after more space.

Hunting for a Plot

John and Jude Turner are no strangers to *Homebuilding & Renovating* — they found their plot of land with the help of long-time contributor and self-build expert David Snell, as part of the magazine's Plotfinder Challenge series.

"We had seen this plot for sale a year before, and one day my wife had an email stating it was back on the market after the sale had fallen through," says John. Their good opinion of the plot was backed up by David Snell during his visit. "David Snell said of the plot: 'If you don't buy it, I will.' It was perfect," remembers John. "The plot was the neighbour's field. We got in touch to say we were local and wanted to build a house for our family, making the point we wanted to create a home for our children to grow up in. I think this approach definitely helped as it also allowed the vendors to choose their neighbours. We bought the plot in November 2011."

The plot already had planning permission for a five-bed house but the Turners spoke to the case officer to explain they'd like something different. "The local council were fine with changes to the design so long as the roof line wasn't any higher and the footprint was the same as the current plans," says John.

"We knew an architectural technician locally who did the drawings and gave us advice. We were open to ideas of how to tackle the internal layout to deal with the sloping nature of the site, and he came up with the concept of a mezzanine entrance at the top of the double-height hallway," says John. The house as a result has an upside-down layout, entering from the top of the site at bedroom level, with an oak staircase – which the couple bought online from Stairbox – leading down into the living accommodation.

≫+

HOMES TRADITIONAL STY

The Build

Planning approval was obtained in April 2012, and work began on site a month later. Fortunately, John's background in construction management (he previously worked for Bovis in London, as well as a business building small-scale extensions with his friend) proved beneficial, with John taking on the role of project manager as well as undertaking a lot of the building work himself.

The construction itself was undertaken in two phases. The majority of the house was built using a traditional cavity wall system, while the large oak frame kitchen space was built later. The whole house is faced in traditional Cotswold stone, insulated with 152mm-thick Celotex insulation, with triple glazing used throughout.

The only difficult aspect was the groundworks. Access to the house is down a narrow lane on a hill, which meant the concrete had to be pumped from up the lane, down to the site. Lorry deliveries also had to be off-loaded at the top of the hill, with materials brought down in the back of John's car.

"I did a lot of the building work myself and was on site the whole time overseeing everything," says John. "I built the garage down the bottom of the site while the groundworkers were in. There were three guys in to build the shell of the house and I did the timber work and all the floor and roof joists. I did the plasterboarding and stud walling, too. One of the proudest moments, however, was building the dry-stone walling in the double-height hallway, which took me a month to build, and also the fireplace which separates formal living and dining areas, which took two days."

Sourcing materials proved to be almost hassle-free, thanks to the internet. "We were building at a time when the internet was really starting to change how you built," says John. "With the staircase, for instance, you just had to go on a website, type in the measurements and it would give a price straightaway. This proved to be a lot cheaper than a similar product from a local joiner. The skirting boards were bought online too — we simply typed in the height, thickness and profile we were after. It was that simple, and you just needed to make absolutely sure you'd got the measurements right."



The Exterior

Clad in Cotswold stone from Veizeys Quarry and topped with replica stone roof tiles (saving on costs) from Marshfield Stone Roof Tiles, the new home is in keeping with the local vernacular. The windows from Ecohaus feature a tilt mechanism and are a Cotswold green powder-coated aluminium on the outside, to complement the stone exterior, and timber on the inside











HOMES TRADITIONAL-STYLE SELF-BUILD





Left and below: Double-Height Hallway

Designed with the sloping site in mind, the house is entered at bedroom level via a mezzanine overlooking a grand double-height hallway. This space features a full-height dry-stone wall, which John built himself. The staircase was bought online from Stairbox

Designing a Home for Family Life

"It's important to give thought to how you want to use the spaces within the house, and we had moodboards for every room," says John. "The process was very much Jude and I with a pad and paper making wishlists, and a lot of time spent in friends' houses pacing out the bedrooms to see what size rooms we were after."

Their home now perfectly suits family life, with formal and informal areas, including the large kitchen complete with high vaulted ceilings that showcase the exposed oak frame. "This is the one room where you walk in and go 'wow' — it's the selling point, not that we're planning on moving!" says John. The kitchen units were handmade in Romania to save on costs, but the couple spent money on the granite worktops from Granite Planet. "It took six guys to carry the worktop for the kitchen island in," says John.

A bespoke pantry to one end of this space was then built to match the cabinetry, giving Jude the walk-in pantry on her wishlist. Bifold doors here also open out to the courtyard and garden beyond for an indoor/outdoor feel.

"Open plan is great for families but you lose the coziness and it can be noisy if you are trying to concentrate," explains John. "We chose to have a playroom linked by double doors off the living area that can be shut to hide away the clutter. It's ultimately a real house that we all live in — not a showhome. You do not want a house so delicate and precious that you can't live in it, and this is definitely a house to be enjoyed."

The house also features underfloor heating and a 3,000 litre rainwater harvesting tank which serves the outside taps. Being off-mains drainage, there's also a septic tank in the garden.

John admits that no amount of planning, however thorough, can prepare you for the stress of the work. "I did an awful lot of waking up in the night, thinking of another five things that needed doing. The most stressful bit was the cost side of things, and there were many sleepless nights agonising over that," he says. "I was naïve thinking we would build it for £200,000. Although, as this was a self-build, we were able to claim the VAT back on all the materials, so at the end we got a cheque for about £25,000 from HMRC, which helped with the overall costs.

"Having to make all of the difficult decisions that come with project management was tough, but at least when it's your own house you can take time getting the details right.

"I can fully understand why people go on time and time again to self-build because of all the things you learn that you want to apply to the next one. I spent three years swearing blind I'd never do it again, but when I had the house valued I was tempted.

"We love the house," he concludes. "Having built it, I feel very aware of all the little imperfections that I know of but no one else probably notices. Sometimes I wonder whether we should have been braver and gone more 'grand designs' in style, but we'd never have got planning and I wouldn't have been able to build it myself, which was the main reason behind doing the project. Maybe next time!"



QUALITY BATHROOMS

WITHOUT SPLASHING OUT







Above and below: Master Bedroom

The generous master bedroom with built-in wardrobe space features a Juliette balcony overlooking the courtyard and garden. The French doors are from Ecohaus Internorm

Left: Master Bathroom

A neutral palette continues into the master bathroom which features crisp white sanitaryware with chrome fittings. The tiles are from Mandarin Stone



≫→



HOMES TRADITIONAL-STYLE SELF-BUILD

The Project



John Turner Homeowner

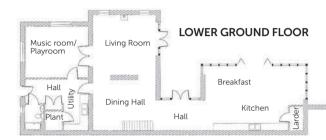
THE HOMEOWNER'S VIEW

The house layout was dictated by the site: sloping and north facing. The porch leads into the first floor. We didn't want it to feel like you were walking straight into the bedrooms, so it leads to a mezzanine with stairs heading down and a double-height space dominated by a high stone feature wall.

The bedrooms are close together in a conventional layout, and the attic floor has two bedrooms and a bathroom, ideal for when we have guests.

Downstairs is mostly open plan but subdivided. We have a playroom linked by double doors that can be shut to hide clutter. The kitchen is our grand oak-framed space where we spend a lot of the time, and the bifold doors open up to the patio. The triple glazing and underfloor heating means it doesn't get cold either.

A back door leads from the parking area into the utility on the ground floor where we have endless hooks and shelves for the practical realities of kids.



UPPER GROUND FLOOR



FIRST FLOOR



SELECTED COSTS

harvesting/drainage

Groundworks/ retaining wall	£60,000
Utilities	£9,000
Garage	£10,000
Oak frame	£28,000
Shell and stone	£60,000
supplies	
General building	£45,000
materials	
Windows and doors	£20,000
Roof tiles	£12,000
Oak joinery	£10,000
Kitchen	£16,000
Bathroom fittings and	£15,000
tiles	
Plumbing/ underfloor	£25,000
heating	
Electrics	£12,000
External drive/walls/	£20,000
patio	
Septic tank/rainwater	£6,000

SUPPLIERS

Architectural designer Daniel Stew	vart
Architectural Services01453	835007
Structural engineer MDHP01453	824551
General building materials Build It	
01452	520946
Windows Ecohaus Internorm	
01453 8	37330
Electrics Geoff Cox Electrical	
01453	822676
Heating DW Dunn01285	771001
Joinery GK Joinery01453	885075
Kitchen frame Oak Frame Carpentry	
01453	828788
Stone Cotswold Stone Supplies	
01666	504689

Roof tiles Marshfield Stone Roof Til	les
01285	810499
Kitchen flagstones Flagstones Dire	ct
01285	656738
Engineered oak floor Timbmet	
01453	826886
Kitchen Sambourne Kitchens	
01285	862333
Granite worktops Granite Planet	
01386	840868
Staircase Stairboxstairb	ox.com
Bathroom tiles Mandarin Stone	
mandarinsto	ne.com
Woodburning stove Chesney's	
chesney	/s.co.uk

PROJECT TIMELINE

Nov 11 Plot purchased Feb 12 Planning application submitted Apr 12 Planning permission approved May 12 Work starts on site Jul 12 Foundations completed Jan 13 Shell of the house made watertight May 13 First fix complete Oct 13 Second fix complete Oct 13 Final decoration Jan 14 Moved in





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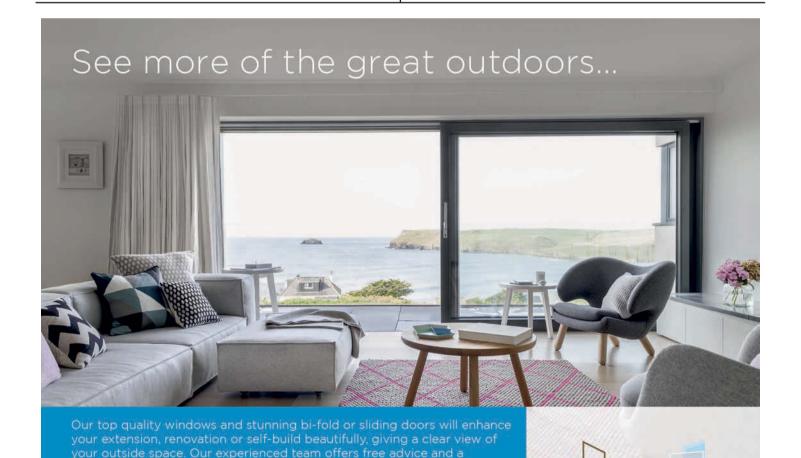
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Breathing Space

Clarisse and Karim Mallem have remodelled and extended their ground floor flat to create a sociable family living space to enjoy for years to come

Words: Sally Smith Photography: Alistair Nicholls Stylist: Jemma Paugh

hen we first moved to London we were renting a flat in the Elephant and Castle," recalls Clarisse Mallem. "Then the landlord put the rent up and we knew it was time to buy. I'd just inherited some money so, luckily, we didn't need a mortgage and it meant we could use all of our savings on doing up a property."

When Clarisse and husband Karim first saw the freehold flat in Wimbledon, they knew it was the property for them. It was also a risk as the previous owners had left the property in a bad state of repair, and the couple weren't sure what they would uncover. It transpired that they had no choice but to knock down a dilapidated rear extension and start again. "We were excited about the prospect of starting afresh with a blank canvas," says Clarisse.

It took three months to agree the sale, with the couple finally moving in during January 2009. "The flat reeked of damp and we could see stains up the walls behind the sofa," says Clarisse. "Karim has asthma so we had to ensure we would have enough money in the pot to do the necessary repairs even before the rebuild."

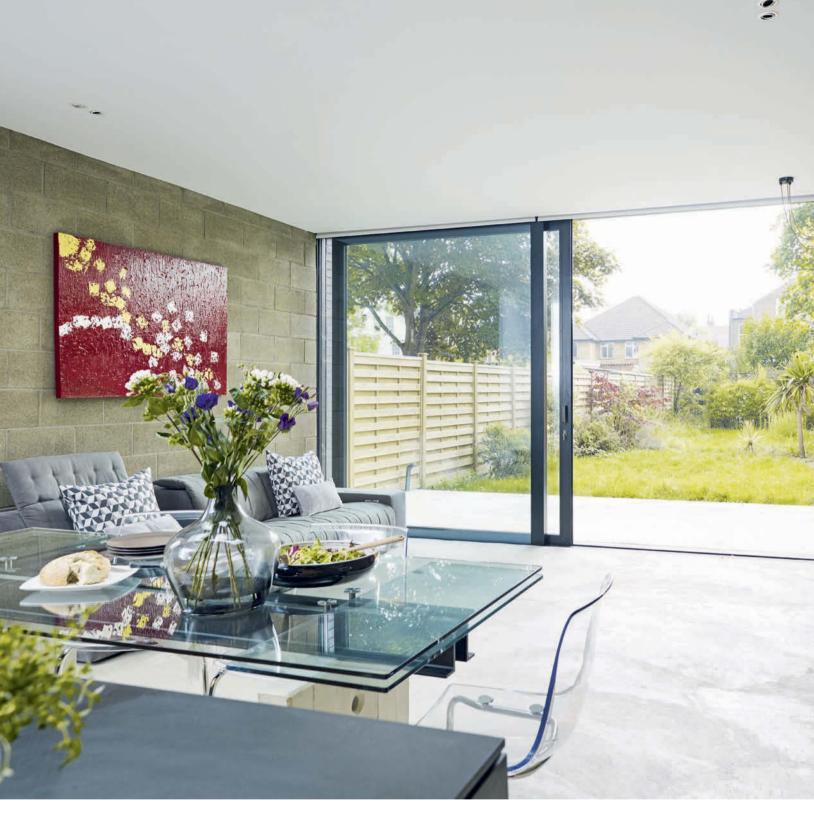
The Remodelling Stage

Initially, they spent around £30,000 renovating the two bedrooms at the front of the property. "We had to make at least part of the flat comfortable while we saved for the new extension," says Clarisse.

The flat had two entrances and there was an oddly shaped corridor from the front door to the living room. "It made sense to block off the front door and just use the side door to make better use of the space. We added about 4m² to the master bedroom," she says.

"We desperately needed more light, too, as it was damp, dark and cold. We wanted the garden to be a focal point but there weren't any windows in the living area and you could only see the garden when you were washing up." In light of this, the decision was made to add a 5m-long extension where the old addition stood. The couple both worked full time and knew they needed an architect





who could act as project manager, too. Step in Joanna Coleman, a partner at Mustard Architects, who came on board in July 2012.

Designing the New Extension

The brief was for a sustainable scheme, with an industrial and minimalist aesthetic. "We also needed to create an illusion of space without the actual space to do it," says architect Joanna. "It was a long narrow layout and we wanted to get light deep into the centre of the building."

"I wanted a dark-coloured kitchen, too, but I didn't think it would look right in the new space," adds Clarisse. "Joanna came up with the perfect plan. A rooflight over the dining table and two floor-to-ceiling glazed windows on the external side wall that would bring in enough natural light to balance the black kitchen units and work surface."

When work started in August 2013, Clarisse and her husband decided to move to a rented flat across the road. Clarisse only had time to visit the site once a week, so working with Joanna was key to the success of the project. "We had update meetings during my lunch hour to decide on finishes and discuss any problems on site," says Clarisse. "Mustard Architects were key to the success of the project, especially when issues arose."

Stripping Back the Existing Extension

The existing flat featured a mish-mash of badly constructed 1980s extensions — a series of mini building disasters waiting to be uncovered. "I'd never seen a building that was so damp," adds Joanna. "We did eventually find out what was causing the problem when we removed the old bath. There was stagnant water between the floor joists, as the pipework from the bath had not been con-



HOMES FLAT RENOVATION & EXTENSION

THE QUICK READ

- ⇒ Clarisse and Karim Mallem initially renovated and remodelled the internal spaces of the existing ground floor flat to provide a comfortable living space before work on the extension began
- ⇒ A dilapidated rear extension had to be demolished to make way for the new contemporary extension, which now contains their new open plan kitchen/dining space
- ⇒ The previous rear extension was seriously lacking in natural light and was suffering from a damp problem the cause of which turned out to be faulty plumbing



Living Space

A large fixed pane triple-glazed rooflight brings natural light deep into the room; so too do the side windows (right). The frame is concealed within the plasterboard ceiling and is exactly the same length as the kitchen island and bench. The mortar in the exposed blockwork was painted to match the rest of the interior





to the drainage system." It turned out to be the cause of the damp problem and fortunately didn't result in any extra costs. The issues didn't stop there, though. Clarisse wasn't surprised when she received a call at work from Joanna to inform her a wall had collapsed when the builders were making an opening for the full-height windows. "It had been badly built — the exterior wall had not been tied together to the internal wall," explains Clarisse. "They ended up pulling down the entire wall and rebuilding it. I was quite relieved it happened when it did and not when the builders had left. It only delayed the project by two weeks."

Getting the Industrial Look

The couple decided to include exposed blockwork walls: "I wanted a raw minimalist look, not a clean finish," says Clarisse. "We'd had a mortar sample that looked like it would blend with the blocks, but when it dried it was too orangey. In the end we had to dye the mortar to match."

Clarisse and Karim also opted for a power-floated concrete floor with underfloor heating. "Joanna warned us we would get surface cracks in the concrete but this didn't put us off," says Clarisse. "I love being able to see some swirl marks from the power-floater



HOMES FLAT RENOVATION & EXTENSION

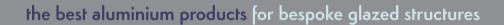
Kitchen/ Dining Area

The MDF black kitchen units, made by McCormack Joinery, are topped by stainless steel and black Corian worktops. Beneath the concrete floor is underfloor heating. A large rooflight (LEFT) above the island brings light deep into the interior





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HOMES FLAT RENOVATION & EXTENSION



machine." The blockwork walls and concrete floor have been paired with black kitchen units. "We had to go for something bespoke as the ceilings are quite high," says Clarisse. The design of the joinery was kept to a minimum, with black used for the carcasses, shelves and cupboard doors and a black Corian worktop and stainless steel worktop to the rear run of units. "We chose MDF for the kitchen carcasses – it's black all the way through – so scratches aren't that visible," she adds.

It was pretty chilly when the couple moved into the flat on Christmas Eve 2013. "Although the concrete floor was dry enough to walk on, we could only turn the underfloor heating to 5°C to stop the floor drying too quickly and cracking. It was freezing but great fun — the dining table hadn't arrived so we used garden furniture," says Clarisse.

The couple couldn't be happier with the new layout and extension. "We spend all our time in the extension now. We have a 10-month-old baby and it's a delight to have such a big space for Axel to explore and play in. We can see the garden when we open the front door — it's very dramatic. It certainly has the wow factor we were hoping for." \bullet

Clever Design Features

The floor was lowered to allow for a full-height triple-glazed fixed pane and sliding door to create a view to the garden. The island was designed to incorporate a bench with a pull-out drawer underneath the oak seat for hidden storage



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HOMES FLAT RENOVATION & EXTENSION

The Project



Clarisse Mallem Homeowner

THE HOMEOWNER'S VIEW

The flat is divided into two distinct spaces. We wanted the private area for the bedrooms to be warm and cosy and have a different ambience to the public living area that needed to be durable and contemporary.

My husband and I are big fans of modern architecture. We were on holiday in Kenya and stayed in a fantastic hotel that was made entirely of concrete, even the furniture. We absolutely loved it and from that moment a concrete floor was a must-have in the new extension.

It's worth taking the time to save that bit of extra money to buy exactly what you want. It is an investment in your home, after all. Always refer to the original wishlist you made when you were planning the project, and even if it seem like a risk at the time, it will be worth it in the end.

It's easy to get stressed about all the decisions you have to make, so try and keep calm and enjoy the whole process. I'm so glad we took on a project manager to deal with all the contractors and unexpected problems that came up during the build. We had no building experience, so it was great to have a professional on board.

ORIGINAL EXTENSION





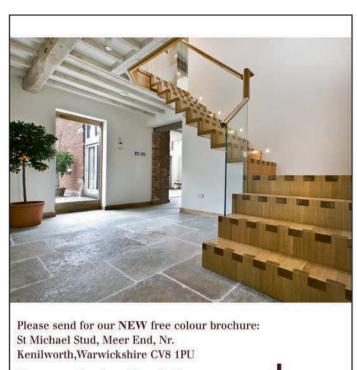
EXTENSION COSTS

Building and	£100,000
construction Kitchen joinery and worktops	£11,500
Appliances	£2,500
Sink and taps	£350
Sliding door and	£12,300
fixed pane	
Electric blinds	£1,900
Side windows	£3,500
Concrete floor and	£4,300
patio	
Underfloor heating	£5,100
Rooflight	£2,800
Lighting and electrics	£11,100
Total	£155,350

SUPPLIERS

Architect
Joanna Coleman of Mustard Architects
020 8533 8162 mustardarchitects.com
Builders Cardonwood01322 311393
Kitchen joinery McCormack Joinery
07720 055187
Glaziers Complete Glazing Solutions
01603 504300
Rooflight Rooflight Architectural
rooflight.co.uk
Kitchen tap
riterieri tap
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HOMES FLAT RENOVATION & EXTENSION

Solving Condensation

Clarisse and Karim Mallem introduced a passive input ventilation unit to manage condensation in this highly insulated extension



entilation is not always a priority for many homeowners when they are planning a project. However, in an age when buildings are often sealed, highly insulated, airtight units, and windows are kept closed to reduce noise and to keep our homes safe and secure, ventilation takes on greater importance.

In this particular case, the Mallems wanted to insulate the floors, walls and roof of the new extension beyond Building Regulation standards, and introduce triple glazing to improve thermal performance and reduce traffic noise. Inevitably, air circulation would be affected.

Damp was also a big issue and it wasn't clear what was causing it at the initial planning stages. The couple also had to consider how this might affect Karim's health, as he suffers from asthma. It therefore made sense to install a passive input ventilation (PIV) unit that would supply filtered air into the flat that may help relieve his symptoms and keep any possible ongoing damp problems at bay.

Architect Joanna Coleman, who designed and project managed the extension, explains: "The PIV unit in effect increases the pressure within a building by continually feeding fresh air into a property — the theory being that the moisture is driven out as the air leaks out of the building."

PIV units are a cost-effective solution to help solve a condensation problem in older properties as well as new builds and extensions. It's not to be confused with a heating system, although the chill is

taken off the air as it enters the building — it is simply a provision to provide filtered air.

Maximum Air Circulation

The EVF-H PIV unit (try Envirovent) used for this project is slimline and fits neatly in the top of the Mallems' hallway cupboard just below ceiling height. It has been positioned in the middle of the flat to allow for maximum air circulation, and located by the entrance to allow for access to an external wall to draw in air for filtering.

The unit runs constantly and was preset to the required levels on installation. It only requires an electrical connection and surprisingly there isn't any background buzzing. The running costs are negligible — the filters need to be changed once a month and replaced every five years.

The Mallems decided very early on in the tender stage that they wanted to use a PIV unit. This made it easy to design all the cupboards and joinery with the necessary vents, allowing dry air to spill out at a high level to ventilate the entire flat. The windows also have trickle vents incorporated, so the air can seep out of the building to keep a constant flow of air.

The couple have seen a definite improvement in Karim's asthma since moving back into the flat. It certainly isn't just due to the PIV unit, but it is reassuring to know that the long-term health of both the building and its owners are benefiting from improved ventilation and air quality. \bullet









Oliver and Holly Smallman, a retired couple from Chiswick, west London, were looking to downsize after their children left home. Their new and quite revolutionary three-bedroom home is a Passivhaus and requires almost no heating. We catch up with architect Richard Dudzicki (rdauk.com) to find out more...

HB&R: What was on the site prior to the new build?

Richard Dudzicki: A derelict garage located at the end of Oliver and Holly's existing house.

What was your brief from the clients?

To provide them with a smaller, contemporary and more manageable energy-efficient home. Once we received the brief we suggested a Passivhaus.

How has the new house been constructed?

Using structural and exposed concrete - the house had to be extremely airtight to achieve Passivhaus certification.

Were there any restrictions on the site?

It took three years to obtain planning permission — there were worries over the effect of construction on the surrounding trees and disruptions during construction. There were also concerns over whether the building would fit in with the surrounding Edwardian houses.

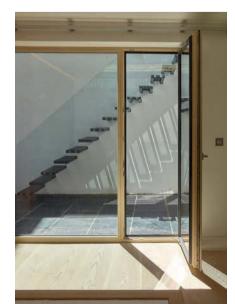
Site Specific Design

The house sits over three levels in order to make the most of the relatively tight site. Despite its contemporary design, the use of London stock brick slips means the property complements its surroundings

IMAGES: TIM SOAR C/O RDA













How was the house designed to suit the site?

A basement level and a courtyard were designed in to add further space and create some much-needed outdoor spaces while also flooding the lower levels with light. Skylights were used on the upper floors to provide the first floor with lots of light and also solve overlooking issues. The use of traditional London stock brick slips externally, along with the living wall – plus the fact that 50 per cent of the building's total volume is hidden – mean it blends with the Edwardian street scene.

What is the layout like inside?

At basement level there are two bedrooms and a utility room, while the ground floor contains the kitchen/dining area, living space and a bathroom. On the first floor there is a third bedroom/study and a wetroom.

How long did it take to complete?

Including the three years it took to get planning permission, the property took a total of seven years from the initial design brief to Passivhaus certification.

How much did the project cost?

It cost £450,000 and it is now worth £900,000.

How has the project been received?

It was commended in the 2015 British Home Awards and is currently a Finalist in the 2016 UK Passivhaus Awards Urban Category — watch this space. •

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Forming a complete step-by-step guide to building a home, we follow leading package company Potton as it constructs a new Passivhaus home. This month, the interiors take shape and first fix work begins

n a UK industry first, self-build specialist Potton is giving aspiring self-builders an opportunity to watch, stage-by-stage, the construction of its fifth and most contemporary showhome.

Self Build Live is a series of events – held at Potton's Self Build Show Centre in St Neots, Cambridgeshire – designed to offer potential self-builders an 'access all areas' insight into the construction of a fully certified Passivhaus and learn first-hand how to build their own home — the highlights of which are showcased over the following pages.

Potton, together with its build partners, is hosting 16 Self Build Live events at key stages of the build — from laying the slab, installing insulation and skimming the walls to fitting the bathrooms, interior design and decoration. Each event will provide essential self-build information and an unprecedented insight into building a Potton home.

For course dates, videos of the build and more information, visit selfbuildlive.com

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BUILDING A PASSIVHAUS: GETTING THE DETAILS RIGHT

As Potton's Passivhaus showhome takes shape, attention turns to laying the screed floors, and to first fix plumbing and electrics. Dr Paul Newman shares lesson learnt



DR PAUL NEWMAN Potton's self-build director Paul Newman has worked in timber-based construction industries for over 18 years

Preparing the Floors for Screed

If you've been following the series – in which Potton constructs its first Passivhaus showhome and shares words of wisdom which may aid on your own self-build project – you'll be aware that the ground floor construction consists of a solid reinforced concrete raft. The raft is 225mm thick and sits on 250mm of Kingspan Styrozone floor insulation. The whole construction is raised up out of the ground by 600mm because we are on the edge of the flood plain. Our building superstructure is constructed on a blockwork upstand, inside of which we have laid additional insulation and an anhydrite (calcium sulphate) cast screed.

We chose to use Optim-R (from our sister company Kingspan Insulation) to insulate under the screed. This is a next-generation product which comprises a microporous core, which is evacuated, encased, and sealed in a thin, gas-tight envelope — giving outstanding thermal conductivity while also providing the thinnest possible solution for any situation where insulation is required. With a design (aged and edge effect) ther-

mal conductivity of 0.007W/m.K, it provides an insulating performance that is up to five times better than commonly used insulation materials.

Unlike other insulation products, the installation layout for Optim-R is predesigned to ensure that the panels delivered to site fit in the intended position. Where necessary, small infill panels are used to complete the insulation jigsaw, and the whole layer is installed on a 3mm layer of rubber crumb sheet. Once complete, the entire insulated area is overlaid with a thin ether foam sheet, and then the screeding can begin. We found that the Optim-R product was surprisingly easy to install and thankfully we managed to complete the jigsaw without mishap.

The Benefits of Anhydrite Screeds

We have used anhydrite screeds previously; indeed, the Wickhambrook barn-style showhome, also at Potton's Self Build Show Centre, features this type of screed. The quality, speed and simplicity of installation was something that we were keen to repeat and demonstrate again on this project.

Traditional sand and cement screeds are slow and labour intensive to install. They are also highly dependent upon the quality of the installer, too. Developed over 20 years ago, anhydrite screed has many obvious benefits compared to traditional sand and cement products. It is substantially quicker to lay, far less labour intensive and ideal for use with underfloor heating.

Our screed was supplied and installed by a two-man team from Screedflo in less than three hours. The process was as follows:

- The mixing lorry turned up and the installation team checked the slab levels and positioned a couple of dozen 'spiders' to ensure the screed was pumped to the correct depth. Our site team had already installed a tanking membrane (500 gauge polyethylene sheet with taped joints) to prevent the liquid screed from escaping.
- The Screedflo team filled up the onboard tank with water – in reality this took up almost half the time the team was on site – and began the repeat batch mix process (this allows a pretty much constant stream of mix to be pumped from the lorry into the building).
- The pumped areas were gently agitated to ensure a level surface and to remove air bubbles from the mix.

The screed was installed on a Friday morning and was 'walkable' by Monday. We began working again inside the building on the Tuesday. At depths of 40mm, the screed can take foot traffic after 48 hours, and will take full working loads after seven days. It dries at a rate of 1.4mm a day, depending on ambient conditions.

Preparing for the External Cladding

A two-man team from our factory (James and Joaquín) were co-opted to install the additional layer of 100mm Kingspan Kooltherm insulation we needed to meet the performance levels given in our Passive House Planning Package (PHPP) analysis.

They also fitted the timber battens to support the external cladding. The timber cladding boards, which will be fixed vertically,

"Anhydrite screed has benefits over traditional sand and cement screed — it's quick to lay, far less labour intensive and ideal for underfloor heating"





have been supplied by Vincent Timber. We have selected pre-finished western red cedar in a lozenge-shaped profile with 7mm face gaps between them. We mocked up several different gap widths to determine which looked best and, after much deliberation, selected 7mm as the most visually appealing option. It's important to note that if you are opting for a 'gapped' cladding effect then you must use a membrane behind it that is capable of withstanding permanent exposure to UV light — most breathable membranes cannot do this. We used Protect 5000 Façade Wall Membrane.

One of the slightly unusual things about our Passivhaus showhome is that it features masonry cladding too, in the form of Terca Megaline Grey Multi bricks from Wienerberger. The long, narrow format brick with 8mm mortar joints provide a contemporary appearance, with a nod to the traditional brickwork elevations of the vernacular. In common with all new builds, one of our planning conditions related to the appearance of external finishes and so before starting work on site we mocked up several brickwork panels with different coloured mortars and mortar finishes (flush,

bucket handle, recessed), and selected the one that appealed most. One thing we do know already is that the very pale cement we have selected is quite tricky to work with and goes sloppy very swiftly if overworked.

Most SIPs (structural insulated panels) and timber frame Passivhaus builds exclusively use lightweight cladding systems, which are carried by or fixed back to the building structure. To use the masonry cladding and not introduce any thermal bridging meant that we needed to construct a separate foundation just to carry the brickwork façade. This was a simple strip foundation; it is completely isolated from the main insulated raft.

The brickwork support channels which provide restraint are screwed back through the external insulation into the 15mm OSB (oriented strand board) face of the Kingspan TEK® Building System of SIPs-based panels. The impact of the repeating screw fixings was added into the U value calculations for the external wall and in this instance had little impact because of the large amount of insulation in the wall — this would not be the case in constructions with lower levels of insulation.



Building a Highly Insulated Structure

Potton's Passivhaus has been built using the Kingspan TEK® Building System – a SIPs (structural insulated panel)-based system – which was pre-fitted with a Wraptite System membrane in the factory prior to erection. A further layer of 100mm Kingspan Kooltherm insulation has been added externally (as shown above) to help meet Passivhaus levels. Timber battens have also been added in preparation for the timber cladding to be installed this summer

-



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POTTON'S SELF-BUILD LIVE



First Fix Work

Clockwise from left: A bulkhead unit has been constructed in the kitchen during first fix in order to support the cooker hood; The ducting is installed for the mechanical ventilation with heat recovery system; The studwork is completed in the bathrooms to hide the plumbing; The first fix electrics and plumbing saw several trades on site at the same time



First Fix Begins Inside

Once they'd completed their work externally, our intrepid team from the factory moved indoors and helped out with the first fix carpentry work, fitting service battens inside the Kingspan TEK® Building System and plasterboard support timbers where required. A separate team have constructed a bulkhead unit in the kitchen to support the cooker extractor and framed up the 'feature' elements in the bathrooms.

They have started fixing plasterboard too. We have used Gyproc Habito from British Gypsum on the walls which will, for the most part, be taped and jointed for direct decoration. Gyproc Habito is a new product which allows you to fix up to 15kg directly to a wall using only a single standard wood screw. Shelves, curtain poles and TVs can be

fixed without the need for drills or specialist fixings; you simply screw directly into the wall surface. It makes DIY easier and gives you more freedom to have your home just the way you want it.

The product is also much more durable and damage resistant compared to standard plasterboard products. The Habito boards are the same size as standard plasterboard and are installed in pretty much the same way — they can often be scored and snapped rather than needing to be cut with a saw.

We have finished a few walls with Thistle Magnetic Plaster and I think we'll have fun seeing how creative we can be using the walls.

In among all of this work we fitted the ductwork elements required for the MVHR (mechanical ventilation with heat recovery)

system and carried out the first fix plumbing and electrics. At some points we have had several trades working alongside each other. It has been a nightmare trying to keep the build clean and tidy; it really is amazing just how much packaging waste and rubbish the construction process of one dwelling generates.

The first fix plumbing and electrics were relatively straightforward; the hardest part was confirming the position of everything in the plant room, which at one stage seemed huge but now seems barely adequate. The most nerve-wracking part of the first fix work was cutting the large 260mm diameter ductwork holes in the TEK® Building System for the MVHR system and micro air-source heat pump.

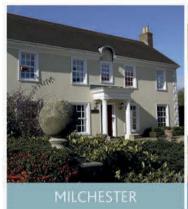




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Visit Our Self Build Show Centre









Our stunning show homes will inspire your imagination.

Four of our stunning self build designs have been brought to life at the Potton Self Build Show Centre in St Neots, Cambridgeshire.



We visited the show centre and were able to walk around the houses and get a real feel for the design. Carol & Andy Whitehouse

After visiting the Potton Self Build Show Centre we loved the look and 'feel' of the Gransden so much, we knew that was the style we wanted to base our new home on.

David Peake



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POTTON'S SELF-BUILD LIVE



SELF BUILD LIVE DIARY DATES

Potton is running a number of Self Build Live events at its HQ in Cambridgeshire — providing a unique opportunity to join the team on site during the build of its Passivhaus showhome, and gain in-depth advice from Potton's experts. Future events include:

- EXTERNAL BRICKWORK (23 JUNE)
- KITCHENS AND BATHROOMS INSTALLATION (AUGUST 2016)
- FINAL FINISHES AND INTERIOR DESIGN (LATE AUGUST 2016)
- THE SHOWHOME OPENS (SEPTEMBER 2016)

Find out more and register your interest in Potton's Self Build Live events at selfbuildlive.com

The Impact of First Fix on Airtightness

If you've been following this series, you'll know by now that the key features of a Passivhaus include:

- Very high levels of insulation;
- Extremely high-performance windows with insulated frames;
- Thermal bridge-free construction;
- An airtight building fabric;
- A mechanical ventilation system with highly efficient heat recovery;
- Accurate design using the Passive House Planning Package (PHPP).

In the previous article of this series we were on the verge of carrying out an airtightness test in public as part of our Self Build Live events (pictured above). The result was 0.50ach@50 Pa — a pleasing figure given the somewhat complex geometry of our new showhome (the more complex the design, the more challenging achieving airtightness is). We were also able to demonstrate the impact that opening a window had on the overall performance. Opening a large downstairs window by about 150mm reduced our airtightness from 0.50ach to

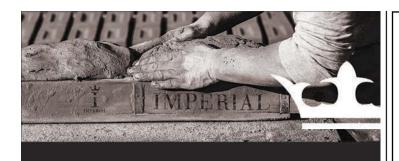
3.00ach@50Pa; a figure still comfortably in excess of most new build properties in the UK.

Since this test was carried out we've done a lot of construction work and made several (12 to be precise) holes in the external envelope — and four of them are very large! To check that we weren't setting ourselves up for failure in the future (in other words, to make sure we were still at the required level of airtightness), at short notice we got our friendly airtightness testers to carry out an extra test. On reflection, this is something we should have planned to do from the start. I'm pleased to report that we are now more airtight than we were — at 0.41ach@50 Pa. It will be interesting to see how this performance level changes as we work towards completing the build.

MORE ADVICE ONLINE

⇒ Read Self Build Live Parts 1, 2 & 3

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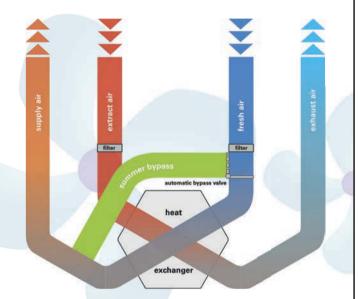


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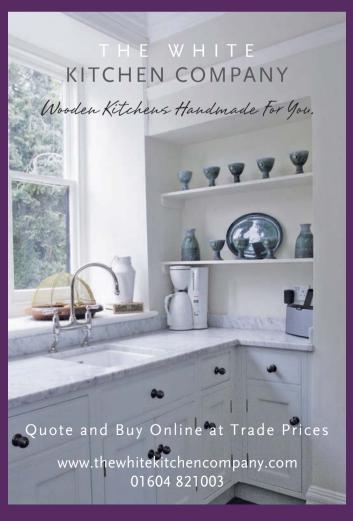
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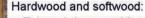
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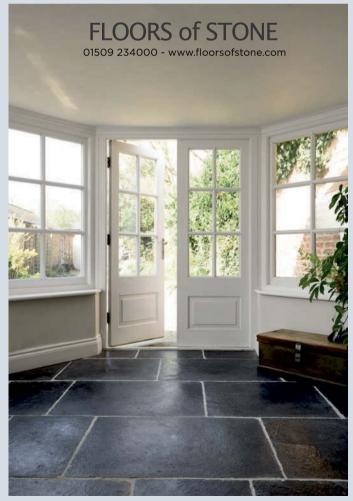
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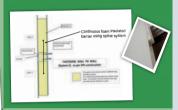
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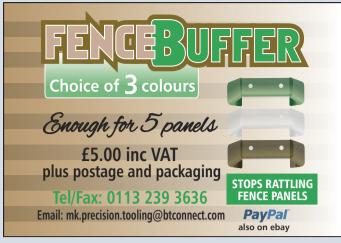
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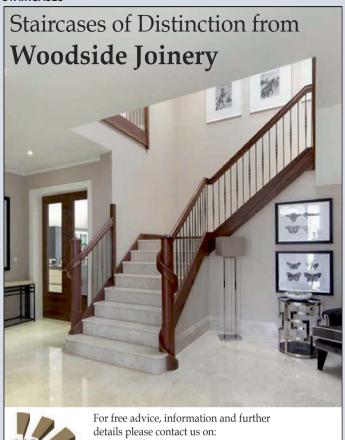


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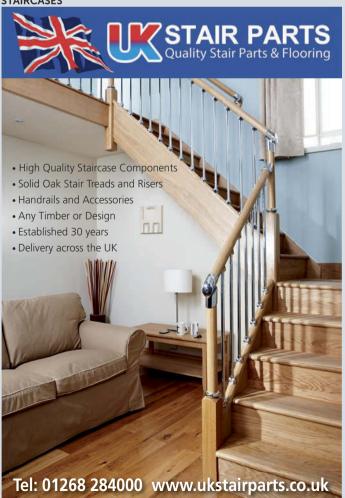
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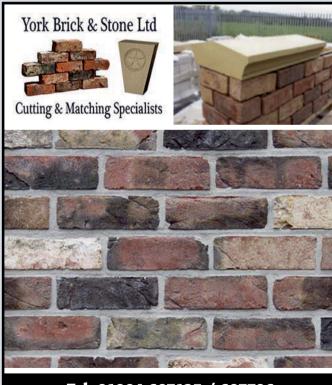




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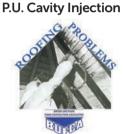
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MUMFORD & WOOD



Conservation™ timber windows and doors by Mumford & Wood have been specified for a new build private home on the Norfolk coast. Double glazed Georgian-style sash windows teamed with casement windows and French doorsets have been installed into deep reveals to aid protection from the elements. Facing the harbour a large dual colour bay window created using a combination of four Conservation™ box sash windows is featured. www.mumfordwood.com

Crometta: Combining Water efficiency and Premium Design



The latest Hansgrohe Crometta range includes overhead showers, hand showers, shower sets and showerpipes. Crometta combines water efficiency, sustainable technologies and premium design at an attractive price. The range is WRAS certified and the energy-saving EcoSmart models have a reduced water flow of six or nine litres per minute, depending on the model.

www.hansgrohe.co.uk

KINGSPAN RISES TO THE CHALLENGE OF WATER TOWER RENOVATION



Products from Kingspan Insulation's Kooltherm and Therma ranges have helped to transform a derelict water tower in North Yorkshire into a striking family home, as featured on Channel 4's Restoration Man. The Kingspan Kooltherm products' ability to deliver outstanding thermal performance from mini-mal insulation thicknesses has helped the Nadrys to create a home that is not only sensitive to the building's industrial past, but that functions as a cosy yet spacious family home.

www.kingspaninsulation.co.uk

New C-Bonded from Duravit



C-Bonded is a new technical solution developed by Duravit for bathroom wash basins and vanity units. Manufactured with millimetre precision, the ceramic of the washbasin is fitted to the furniture with both materials appearing to bond seamlessly as a single unit.

www.duravit.co.uk

KINGSPAN TO LAUNCH FOUR MORE LOWER LAMBDA PRODUCTS



LOWER THE HEAT LOSS

The future path to energy efficient buildings will be revealed on 1st August when leading manufacturer, Kingspan Insulation, launches four advanced, low lambda insulation products for floors, walls and soffits. Kingspan Kooltherm K103 Floorboard, K110 and K110 PLUS Soffit Board, and K118 Insulated Plasterboard feature an advanced, fibre-free insulation core, enabling them to achieve an outstanding thermal conductivity of 0.018 W/m.K.

www.kingspaninsulation.co.uk

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- The Ultimate Guide to Basements
- → Adding Space to a Terraced Home
- ➡ Building a Home in Straw Bale
- → A Buyer's Guide to Timber Windows
- A Striking Contemporary Eco Home
- **>→** ...and much more!

MY BIG IDEA NO. 14



The Corner Window

Architectural technologist and designer Simon Lewis-Pierpoint shares one of his favourite design tricks

aximising on daylight and allowing both the exteriors and interiors to connect with the landscape are common themes when creating a home today - and introducing a corner window is a

One of the things I love about corner windows is the benefit of a 180° vista, with the ability to follow the sun's path throughout the day - allowing plenty of natural light to enter the interior spaces at different times of the day. Corner windows allow you to include other design features such as window seats, from which to view out into the garden.

great way of achieving both.

Simon Lewis-Pierpoint is director of architectural practice SDA Architecture (sdaarchitecture.co.uk)

On our Beechwood project (above), we focused on having the corner glazing facing towards the right side of the plot to create a privacy screen from the neighbouring home, while not

prohibiting light entering the interiors.

Another benefit of corner glazing is the opportunity for a central focal point on the wall – such as a fireplace or television - without a window taking up wall space.

One thing to be aware of with the corner window is cantilevering the structure so that the weight is not load-bearing on the glass. Here, it is important to liaise with your structural engineer to ensure the steel beams support the glass if you are to create a corner window without a corner post for a seamless look.



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