

selfbuilder + homemaker

MAY/JUNE 2021

SHEDDING LIGHT ON SOLAR PV

Our expert answers some of
the big questions on specifying
solar PV for your build



Go neutral

Design tips to create a great
ambience in the kitchen

Timber or composite?

Advice to help you choose
the right decking option for
your garden makeover



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refinement*

David and Martin Ratcliffe's London renovation
blends Victorian elements with contemporary space





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FROM THE EDITOR...

After much pre-publicity through 2020, the Government's 'Help to Build' scheme (playing on Help to Buy which excluded most self-builders) has finally launched. It promises aspiring self-builders to "make it easier and more affordable to build their own homes," and as such comes with hopes that it could revolutionise self-build, which is lagging behind other countries.

The scheme provides £150m for either standard ground-up self-building or for custom-built ("built to order") properties from developers. For beneficiaries it will reduce the deposit required to secure a self-build mortgage to 5 per cent, therefore opening the way for a much wider section of society to get involved. The Government thinks that 30,000 – 40,000 homebuyers could potentially take up the scheme, which will appear fully in late summer.

With self-build presenting a host of challenges, as well as pleasures, it's not for the faint of heart, particularly when it comes to the escalating bills. Anything that makes the gateway to beginning the process easier, and therefore which alleviates the pain of later cost hikes somewhat, has to be hugely welcomed. The scheme comes with funding for councils to develop public land, and the inevitable 'reviews' of how delivery can be accelerated, and how laws can be tweaked to help. Planning has barely been touched however, as yet.

With Covid having taken a toll on the nation's finances, and sure to do so for the foreseeable future, people's disposable income is not going to be conducive to taking on self-build on a whim. Instead it's going to have to be a carefully thought out, and supported decision for whoever decides to make the jump, and do it themselves.

55,000 people are on UK council Right to Build registers, and around 16,000 self-builds are completed per year. Contrast with Canada, where according to our National Custom & Self Build Association (NaCSBA), half of all new homes in Canada are self-builds, and in Austria it's a hard-to-believe 80 per cent. We have a long way to go!

JAMES PARKER


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22



72



62



50

REGULARS

06**News****10**

Home Styling: The power of neutral

Interior designer Lucy Bartley from Lucyb Home shows how a neutral kitchen look can be enhanced with careful lighting and design touches to deliver a special ambience

12

Interior Inspiration

15

Ask The Expert: Power your life

Mark Chewter of Plug-In Solar explains why solar energy remains a great investment, and how a solar PV system can be used to help you meet Building Regulations, while saving money on future bills

83

Classified & Directory

PRODUCT FEATURES

35

Get hip to SIPs

SIPs systems offer an extremely low energy and eco-friendly construction method that's also incredibly strong and quick to build. Matt Banks of SIPs Eco Panels explains more

59

Radiating future relevance

With energy efficient heating systems fast becoming vital components of new homes, Chris Harvey of Stelrad Radiators provides some radiator solutions for self-builders

69

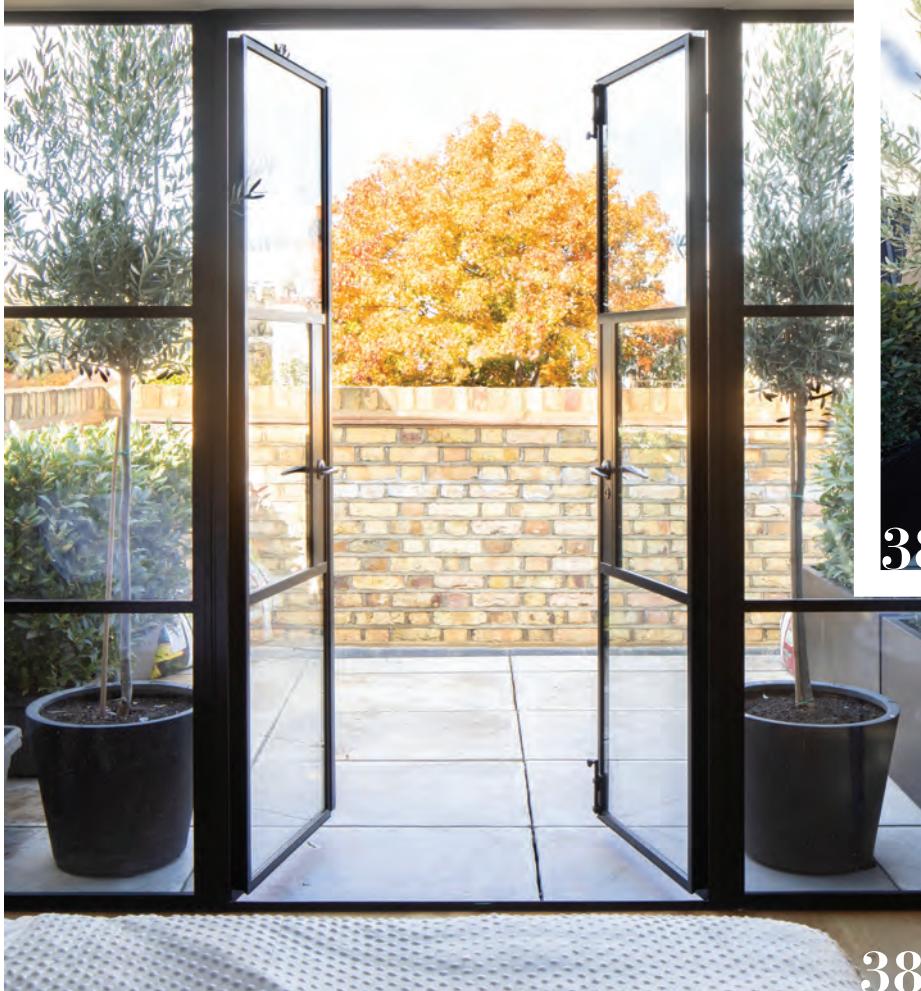
Functional flooring

Darren Trivett of Ridgespear Group offers insights into why developments in underfloor heating make it a practical option, and gives some installation tips

81

Timber or composite?

Deciding on the best decking option for your garden makeover can be challenging. Tony Hobbs of Southern Sheetings offers some advice to help you choose



38

CONTENTS MAY/JUNE 2021

PRODUCTS

FINANCE & INSURANCE

18

SITE PREPARATION

Groundworks	20
Plant Tools & Workwear	20

STRUCTURAL COMPONENTS

Floors	41
SIPs	35
Timber Frame	37

BUILDING ENVELOPE

Doors & Windows	45
-----------------	----

HEATING, VENTILATION & SERVICES

59

INSULATION

61

INTERIORS

Bathrooms & Wetrooms	61
Doors & Windows	68
Flooring	68
Kitchens	70
Paints, Coatings & Sealants	61
Stairs, Balustrades & Lifts	70

LANDSCAPING & EXTERNAL SURFACES

Composite Decking	82
Pools, Spas & Decking	80

CASE STUDIES

22

Green shoots of recovery

When Mark Rainforth bought a dated Sixties bungalow on the outskirts of Sheffield, he had to work out a way of creating an eco-home befitting its beautiful location

38

A new lease of life

When David and Martin Ratcliff set about adding a top-floor extension to their handsome Victorian terraced house in south west London, they had no idea their project would end up taking such a different path

50

Accessibility begins at home

A plot on the family farm proved the perfect spot for John and Helen White to build a forever home for their family

62

Seeing the light

A dark and run-down Regency villa has been rebuilt 'from the inside out,' with a new basement level and exciting glass features which draw in the light

72

The great bungalow rescue

Years of wet and windy winters in rural Shropshire had brought the 1960s bungalow on Bob Griffiths' farm to the point of near collapse, but he decided to give it a new lease of life



NaCSBA welcomes Government's 'Help to Build' fund plan to open self- and custom-building to more people

The National Custom and Self Build Association (NaCSBA) has welcomed the launch of the £150m Help to Build equity loan fund, which it says will "support more people to access an owner-commissioned home."

The organisation said that research published in October

2020 found that one in three British adults were interested in pursuing a self-build.

Recently launched by Housing Secretary Robert Jenrick, Help to Build will be "transformative" for the sector, said NaCSBA, adding that it is an "important recognition of the confidence that the Government has in custom and self-build, and the homes that will be delivered with the fund's support."

Help to Build will enable access to the self and custom build market for those with smaller deposits, and will provide access to additional funding and a lower mortgage rate than would otherwise be the case. A dedicated scheme was "necessary," said NaCSBA, because "almost all custom and self-builders were unable to access the existing Help to Buy Equity Loan Scheme."

In addition to the benefits of having a home built to owners' designs and specifications, the scheme is based on the cost to the customer of building their home, and not the price for which a completed home is being sold.

The news came as part of a Self and Custom Build Action Plan launched by the Government to boost activity in custom and self build. The Action Plan includes:

- Prime Minister-commissioned review to establish a plan to scale up self and custom build homes
- Review of the Right to Build legislation to improve how it is applied in practice
- Self and Custom Build Land Release Fund for local authorities to bring forward plots on land they own
- Funding for the Right to Build Task Force so it can continue to work with English local authorities.

Andrew Baddeley-Chappell, NaCSBA CEO, said: "There has been a long-recognised need for greater diversity in our new homes market, and the Help to Build scheme is an important step towards greater customer choice for those with ambition, sound plans and smaller deposits. It is about increasing choice for the homebuyer."





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LOCAL GOVERNMENT ASSOCIATION REPORT SHOWS OVER 1.1 MILLION HOMES WITH PLANNING PERMISSION WAITING TO BE BUILT



More than 1.1 million homes granted planning permission in England in the last decade are yet to be built, new analysis by the Local Government Association reveals.

The LGA is calling for councils to be given powers in a Planning Bill in the Queen's Speech to incentivise developers to build housing more quickly.

Latest figures show that 2,782,300 homes have been granted planning permission by councils since 2010/11 but over the same period only 1,627,730 have been built.

The number of planning permission granted for new homes has more than doubled since 2010, with 9 in 10 planning applications being approved by councils.

While there will be in some cases legitimate reasons as to why development has stalled, and it is recognised that there is a time lag between permission being granted and homes being built, new build completions have only increased by just over half as much in that time. The LGA, which represents councils, says this shows that planning is not the barrier to house-building and that it is the housing delivery system that needs to be reformed.

To help councils get developers building more quickly, the Queen's Speech should bring forward legislation that enables councils to charge developers full council tax for every unbuilt development from the point the original planning permission expires, says LGA.

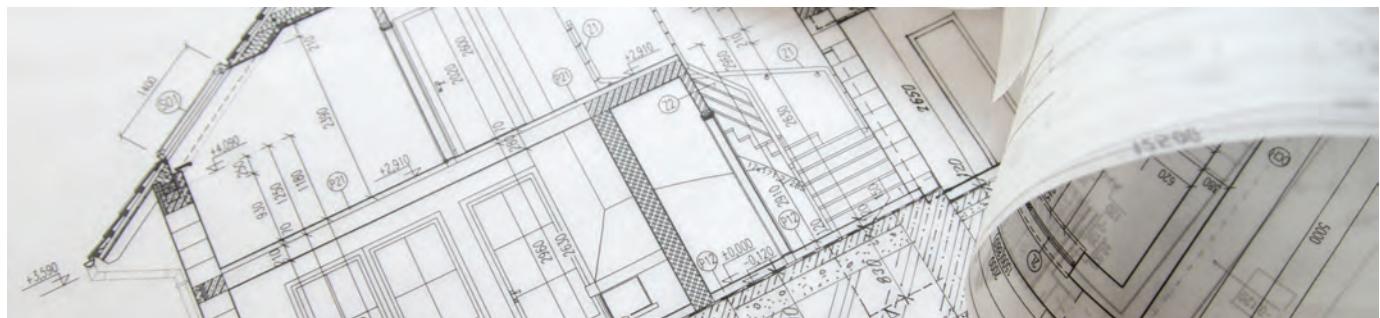
There is also a call to make it easier for councils to use compulsory purchase powers to acquire stalled housing sites or sites where developers do not build out to timescales contractually agreed with a local planning authority.

But this falls far short of building the 300,000 homes a year the Government has pledged.

The LGA says only by building more council homes can we tackle the housing crisis and meet the Government's housebuilding target.

It comes as new polling by the LGA has found that 80 per cent of MPs and 88 per cent of Peers think councils should have more financial freedoms and powers to build new homes.

The LGA is calling for councils to be given the powers to kickstart a social housebuilding programme of 100,000 homes a year.

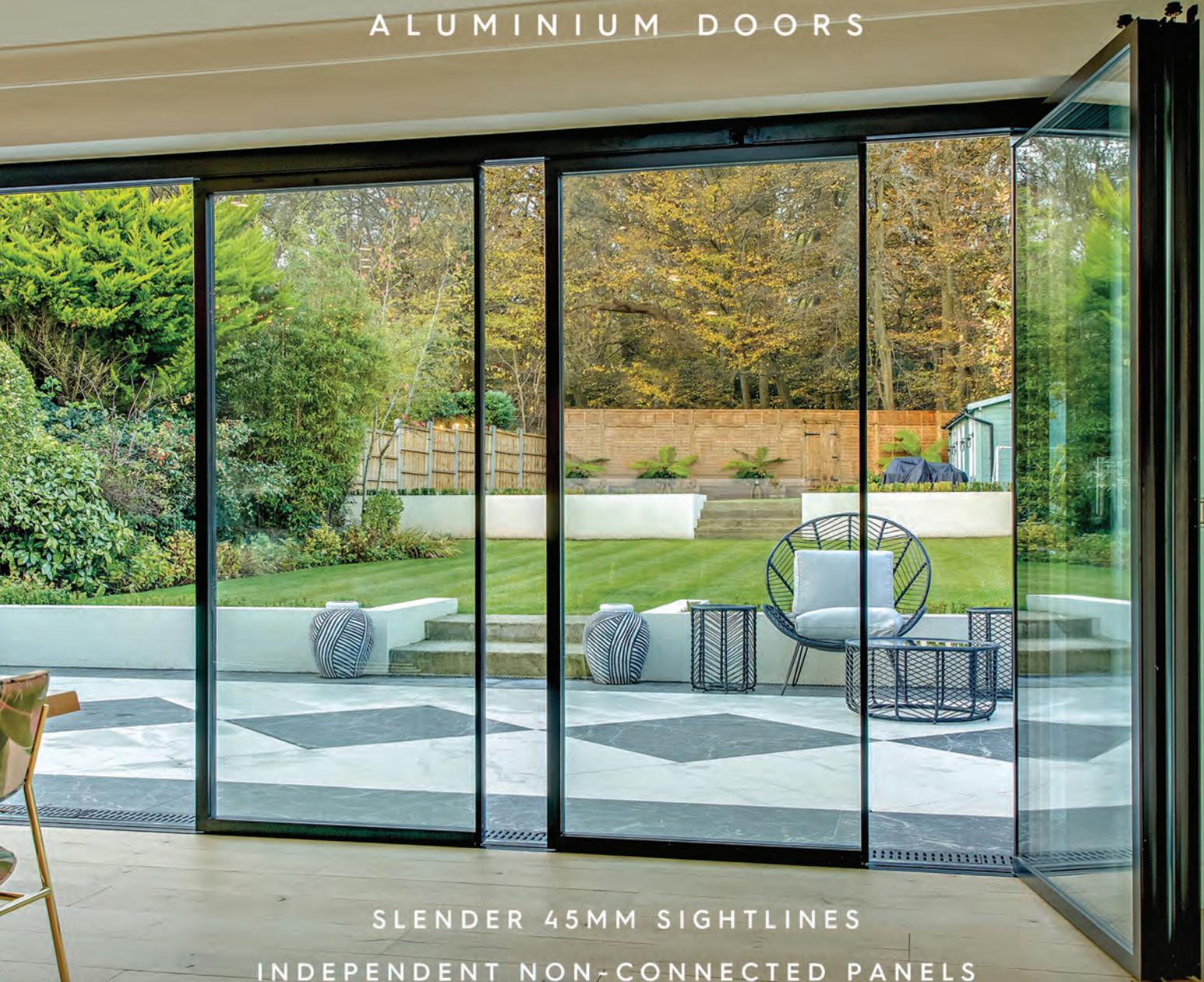


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THE POWER OF NEUTRAL

Interior designer Lucy Bartley from lucyb home shows how a neutral kitchen look can be enhanced with careful lighting and design touches to deliver a special ambience

The biggest advantage to a neutral kitchen is that it will instantly create a minimalist style and broad appeal. This will create an air of calm, one which works instantly as a backdrop for the utensils and crockery that you may already have. This neutral colour scheme allows you to update your accent colour palette for worktop decorative items regularly, or even seasonally.

My advice is to go for statement eye-catching accessories that are individual and of personal importance to you. For example, a coloured vase, glass hurricanes, a decorative textured bowl – pieces that draw the eye in, add a new shape, depth and a splash of colour/texture. Items that aren't actually 'kitchen related' and are more 'one of a kind' craft/artisan pieces will give your space personality, whether from home or abroad.

Adding texture and contrast finishes, such as an engineered wood flooring will give warmth to the space, from the colour and grain – a great contrast to mid gloss white door and drawer fronts. Natural wood accents like a chopping board, knife block and serving tray would also work well.

An alternative to wood flooring would be to play with a patterned floor tile, giving a colour splash and/or a geometric motif, or even a textural stone or slate floor, for another suggestion to add an alternative surface finish.

With a neutral kitchen, you can add further depth by choosing either chrome, black matt or brass ironmongery as a colour accent. Consider using the same finish and colour for taps, kitchen utensils, handles, light switches and

power sockets.

In such an essentially simple, understated kitchen, it is crucial to ensure that none of the door and drawer fronts are out of line, as this will stand out like a sore thumb. Push-catch (handleless) doors work well, giving a pleasing linear aesthetic that avoids visual 'clutter.' Go for a light quartz worktop with a mottled colour finish within, as this will give interest and makes the top appear less 'solid.' From a distance it will appear 'white,' but a closer look reveals the colour variation. The contrast of elements are key within such a simple kitchen palette.

LIGHTING

The addition of a pendant statement light fitting, whether over an island if you have the space, or central to the room, will always look great, adding a new level and height for the eye to work off. If over an island, three light fittings are always a nice balance, creating symmetry and lining up vertically within the overall aesthetic. For a kitchen/diner, a pendant light display above a dining table is always useful and can again link into the colour of the ironmongery used. There are so many wonderful pendant designs out there, in various colours, shapes and finishes.

In this understated neutral contemporary kitchen, I would always suggest recessed downlights and no metal surround, instead white to blend in with the ceiling.

In terms of lighting, it is good to weigh up the four basic types in your design. 'Task lights' help you see clearly when chopping vegetables or reading from a



cookbook. 'Ambient' lighting illuminates the room, rather than a targeted spot, whereas 'Accent' lighting highlights a feature, such as an artwork, as you might have in a living area. This would work within a kitchen space, if you had an amazing marble or stone countertop for example, to help bring out the accent tones, flecks of the material, so is a real consideration. 'Decorative' lighting simply enhances the space with the fitting's colour and material, as well as the shadow it casts.



*'One of a kind'
craft/artisan
pieces will give
your space
personality*

A DESIGN CHECKLIST

Finally, remember your design checklist before starting on the kitchen design and fitout:

- Use three interesting textures that reflect a contrast of materials, for walls, worktops, cabinetry door/drawer fronts such as mid gloss units, wood flooring, and a quartz worktop.
- Utilise an accent colour for the glass splashback. This can be quite wild, or a neutral that sits somewhere between the light door fronts and dark wood

floor colour (a tone that blends and coordinates), possibly a taupe or a soft subtle grey.

- Ironmongery – match a gorgeous, contrast metal finish across the space – taps, handles, knobs, hooks, latches, coat pegs and plug sockets. Such functional details complete a room and will accent your own style, whether traditional, quirky or contemporary. To end, remember comfort underfoot. If the kitchen is large enough, you can always add a rug or runner to warm up a

wood or tiled floor. This will give another texture and colour and allow you to add pattern, whether a modern geometric or more traditional soft floral. When the kitchen links to the dining space, this again allows you to pick up a design reference and create cohesion, with a rug under the dining table and chairs. Rugs are natural space definers, making a visual frame for the dining table to sit upon.

Lucy Bartley is founder of lucyb home

1



INTERIOR INSPIRATION: BATHROOMS

For many people, the bathroom might just be the most important room in the house, providing absolute relaxation as well as the necessary functions. What are the products that will add the finishing touches – as well as the right fittings?

1. The **Trent Freestanding Thermostatic Bath Shower Mixer Tap** by **Bathroom Mountain** includes a thermostatic controller with an anti-scald safety feature. It also has a durable ceramic disc cartridge that prevents any leaks, and is made from solid brass with a hand polished chrome finish. Priced at £189.99.
www.bathroommountain.co.uk

2. The **Milano Elizabeth Traditional Shower** from **Big Bathroom Shop** features a brushed gold finish with an elegant design. It has been crafted from solid brass, so you can be assured of quality and durability. The shower head delivers a refreshing rainfall effect for a spa-like shower, and is priced at £349.99.
www.bigbathroomshop.co.uk

3. **Garden Trading's Hambleton Towel Ladder** makes for a contemporary storage unit, offering a modern twist to any living space. It's simple and concise



2



3



4

design also allows for your own creativity to flourish, hanging jewellery or scarfs from its rounded slats. It's carefully crafted from raw oak from fully sustainable and responsible sources within Europe. The towel ladder is priced at £110.
www.gardentrading.co.uk

4. This **2 Door 3 Shelf Cupboard** in Grey from **Sue Ryder** is effortlessly elegant with a crisp painted finish and tongue with groove detailing. The top section features three open shelves while at the bottom enclosed storage behind two doors for all your bathroom essentials. It's finished with a chrome knob for a hint of contemporary class. Priced at £79.99.
www.sueryder.org/shop

5. These **Hope Mink Gloss Brick Effect Wall Tiles** by **Walls and Floors** feature a zellige style glaze for characterful wall design. Crafted from quality white body ceramic, they feature 25 unique faces and a brick shape, perfect for transforming interior spaces into creative design. Price: £36.95 per sqm.
www.wallsandfloors.co.uk

6. The **Ellipse** by **Waters Baths of Ashbourne** is a stone freestanding bath with smooth, curved sides that radiate elegance. The curves and narrow ends support the back and hug your shoulders to offer a restful bathing experience. Shown here in a navy blue colour. Bespoke custom colour outer shell available. Price: £2990.
www.watersbaths.co.uk



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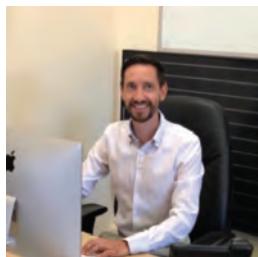
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Power your life



Mark Chewter of Plug In Solar explains why solar energy remains a great investment, and how a solar PV system can be used to help you meet Building Regulations, while saving money on your self-build home's future bills

With an average of 4,000 solar panels being installed in the UK each month, and in an era of increased environmental awareness, it's clear to see why solar energy is such a popular option for self-builders.

Solar energy, often termed 'Solar PV,' is an easy-to-install, cost-effective, clean source of energy, making it particularly suitable for those building their own homes. Solar PV is also a great investment as most installations have an average return on investment (ROI) period of between 6-10 years.

As the summer approaches, many self-builders will be turning their attention to solar energy as a way to help power their new homes, and reduce their carbon footprint.

CAN I INSTALL MY OWN SOLAR PV KIT?

Out-of-the-box solar PV kits can be delivered directly to site, and include everything required to complete a solar PV installation using on-site roofers and electricians.

Without the need for a specialised installation team, an off-the-shelf solar PV kit can typically be installed, and signed off, in under two days. This reduction of on-site labour results in simplified project management, increased construction speed and ultimately reduced build costs.

As with any other building materials, it's paramount that self-builders only source solar PV equipment from

reputable suppliers. Each piece of equipment must have the necessary MCS and G98 certifications to ensure all necessary legislative and regulatory requirements are met.

Moreover, it is compulsory that all work complies with the latest edition of the roofing and electrical regulations and the appropriate certificates are issued by the relevant contractors in order to meet Part L of the Building Regulations.

DO I NEED PLANNING PERMISSION FOR SOLAR PANELS?

In England, Wales and Scotland, the large majority of domestic solar panel installations will not need planning permission, as they fall under permitted development.

There are, however, restrictions for certain types of domestic solar installations, such as those mounted on the ground or on a flat roof, as well as constraints on installations over 4kW. In these instances, planning permission must be granted prior to an installation. Furthermore, if a self-build is to be situated in a national park, conservation area, World Heritage Site, or Area of Outstanding Natural Beauty (AONB) specific planning permission guidelines will need to be followed.

If you are in any doubt, contacting the planning department of your local authority or visiting the online planning portal is advised.

HOW MANY SOLAR PANELS WILL I NEED TO INSTALL?

There are four key areas to consider





when choosing the correct size solar PV installation for your self-build:

HOW MUCH ELECTRICITY WILL BE USED

Each self-build home will require a specific amount of electricity to power all the appliances in the property each year. The latest OFGEM figures show that an average UK household uses 3,731kWh of electricity per annum. Based on the latest solar performance estimates from the National Renewable Energy Laboratory, a 2.25kW solar PV kit would generate enough electricity to cover 50 per cent of the average UK consumption each year.

THE SIZE OF THE AREA WHERE THE PANELS WILL BE INSTALLED

Solar panels can be installed on tile or slate pitched roofs, flat roofs, metal or wooden roofs, and on the ground. The number of panels a self-builder can install may be limited by the available area, but with well thought-out design, it is generally possible to achieve an effective solution. Generally, installing the solar panels on a south facing elevation at a 35-degree angle will result in optimal performance.

BUDGET

Ultimately, budget will dictate the size of the solar PV kit that can be installed. A lower budget will require a compromise on the number of panels that can be

installed, resulting in less energy being generated. However, it is still possible to realise significant energy savings with small solar installations, if designed correctly.

Ideally, if the budget is favourable, it is worth increasing the number of solar panels. This will maximise the amount of solar energy generated, resulting in bigger financial savings and a faster ROI time. Some solar PV kits are modular in nature, making it possible to buy the kits incrementally, helping to spread the purchase cost across a few months/years.

PART L BUILDING REGULATIONS AND SAP CALCULATIONS

All self-builds have to meet Part L of the Building Regulations ('Conservation of Fuel and Power'), part of which is passing the Standard Assessment Procedure (SAP) calculations. Along with equipment such as energy efficient windows, solar PV is a cost-effective method of meeting these requirements. As factors will differ from build to build, opening a dialogue with your SAP assessor regarding the use of solar PV is recommended at an early stage of the build process.

CAN I ADD BATTERY STORAGE?

The pairing of solar PV and battery storage is becoming more common practice in self-builds, and if implemented correctly, electricity bills can be reduced further using this

Most installations have an average return on investment period of between 6-10 years

method. Battery systems work by storing surplus electricity from the solar PV system, and allowing it to be used at a later time rather than exporting it back to the National Grid.

For homeowners who will not be at home during peak sunlight hours, battery storage can be worthwhile if specified and executed properly. However, at present battery storage technology is expensive, and when coupled with the fact a battery storage system may need to be replaced 5-15 years after installation (depending on the technology), doing a cost/benefit analysis is imperative before embarking on this approach.

Mark Chewter is managing director of Plug In Solar

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ENPHASE

VEKA is leading the way in the future of recycled PVCu

This month, VEKA plc has unveiled plans to grow usage of recycled material beyond its existing Infinity system.

VEKA has been the industry leader in recycling and sustainability throughout its history with the first VEKA recycling plant opening in Germany in 1993. In 2007, VEKA Recycling opened its doors, the UK's first windows recycling plant. Last year, the company's ongoing commitment to sustainability has seen VEKA Recycling invest £150k in six new silos to increase the storage capacity at its state-of-the-art Wellingborough recycling plant, the most advanced of its kind in Europe.

VEKA plc led the way in recycling PVCu launching its Infinity profile in 2010 - a dedicated system with an environmental conscience that contains up to 80 per cent recycled material.

The coming months will see VEKA



start to roll out recycled material across a number of its mainline profiles starting with cills and following with frame extensions with potential to expand further throughout the course of the year. VEKA has committed to a strong focus in driving further usage of recycled PVCu in the coming years.

Recycling has become a crucial part of VEKA's strategy and over the last five years more than 24,000 tonnes of

PVCu has been diverted from landfill.

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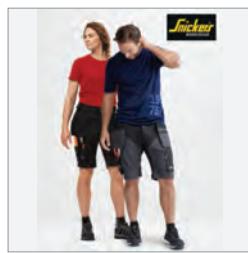
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CASE STUDY



BEFORE



GREEN SHOOTS OF RECOVERY

When Mark Rainforth bought a dark and dated bungalow on the outskirts of Sheffield, he wanted to work out a way of creating an eco-home befitting the beautiful location, but achieving it was not without its construction woes

TEXT HEATHER DIXON IMAGES HEATHER DIXON & MARK RAINFORTH

The first time Mark Rainforth viewed his house on the outskirts of Sheffield, he dismissed it as a non-starter.

The exterior design of the 1960s bungalow was uninspiring, but the interior was so badly designed that the back of the property was in permanent semi-darkness.

But the more Mark searched, the more he kept returning to the dated property.

"The place itself was pretty dreadful, but the location was exactly what I was looking for," he says. "I realised the only way I would get the house I wanted in the location I wanted was to buy this one and renovate it."

He was particularly attracted by the wide, open views from the back of the house which borders the Peak District – a significant plus point for Mark, who is a keen walker. It is also on a bus route into Sheffield city centre, where he works as a Professor of Material Sciences at the University of Sheffield, a field which fed into his ambition to lead a more eco-friendly lifestyle.

For the previous 18 years Mark had been living in a large, six bedroom 1930s house which was often cold and damp in the winter, and costly to run. When his marriage broke down he spent nine months searching for a place to live, but the old stone houses of Sheffield, with their

BEFORE

The roof of the bungalow was wedge-shaped, rendering the attic largely unusable

AFTER

A new roof with zinc detailing, plus the new front door and new windows, completely transform the look and balance of the house



BEST

LANDING

By changing the roof Mark has a spacious first floor landing flooded with natural light – and beautiful views



big, cold cellars and single skin walls, were not what he was looking for.

"I was passionate about wanting an eco-house, but I didn't relish the thought of renovating," he says. "In fact, when I finally decided to buy this place I thought I could just apply sticking plaster to it and make it work. How wrong I was."

Within a matter of weeks, Mark realised he could never live in the bungalow as it was. It was dark, depressing and badly designed. In fact there was very little he liked about it, and he soon drew up a list of fundamental changes he would need to make in order to live there.

"I moved here in May 2017 and the first summer wasn't too bad because I spent so much time outdoors," he recalls, "but the longer I lived in it, the more I realised that everything about it was wrong."

The dormer bungalow included two small upstairs bedrooms but no bathroom, and the roof sloped so steeply at the back that any residual loft space was virtually unusable.

"There were doors from the bedrooms straight into a shallow attic, which meant there were mice and spiders everywhere, the outside air came through the roof into the bedrooms and there was no insulation up there so the heat just went straight out through the roof," says Mark. "It was freezing in

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winter, and boiling hot in summer."

On the ground floor, a tiny hall led into an equally small kitchen that contained 30-year-old units which were not fit for purpose. A small inner lobby led to further rooms, including a dated bathroom; the wiring snaked above the skirting boards and the radiators didn't work.

"I would have the heating on, two jumpers and a blanket, and still be cold," says Mark.

Although he had a limited budget, Mark realised that the only way he could continue to live in the bungalow was to plan radical changes, including an extension upstairs at the same time as replacing the roof and reconfiguring the ground floor to bring more light into the whole house.

This would involve moving the kitchen – which was a small, windowless and located in the middle of the property – into an area occupied by a master bedroom and study across the back of the house. The old dining room and part of the original kitchen would be turned into an en-suite bedroom.

"I had done a few bits of DIY and been involved with building projects through work, but never done anything like this for myself," says Mark.

Undaunted, he began by drawing up a few rough designs and presenting them to architects, one of whom came up with a proposal that would have cost more than £300,000.

Despite this, Mark employed an architectural

technician to draw up a design which, he said, was a "useful exercise," because it highlighted the challenges of the exposed site, and the availability of modern building materials to deal with it.

Armed with these drawings, he approached six architects, finally choosing Sheffield based architect Paul Testa, who instinctively knew what Mark wanted to achieve and how to meet the challenges within his maximum £160,000 budget.

"We spent a lot of time talking about getting close to a Passivhaus design with airtightness and mechanical ventilation with a heat recovery system (MVHR); the pros and cons of the finer details," says Mark. "I couldn't afford a ground source heat pump, but we agreed that excellent insulation was key. This would be in the floors and roof, but also in the form of internal insulated boarding around all the walls."

This would be achieved by stripping off existing wall finishes and creating a new skin comprising stud panels filled with expanding foam, 75 mm Knauf Frametherm, and a vapour control membrane. All joints and junctions with windows would be sealed with airtightness tape.

Paul produced detailed drawings which were submitted to Sheffield planning authority in November 2017 and passed, uncontested, three months later without conditions.

Mark then put the build out to tender and two came back. The first had a good reputation, but went beyond his budget by around £25,000

LOW POINT

"Before the renovation, living in the bungalow was cold, damp and depressing, and there were times when I wondered what I was doing!"

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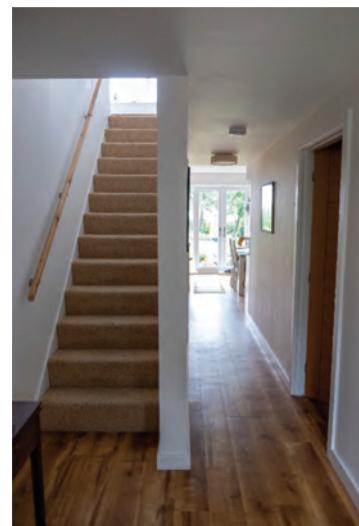
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STAIRS

Architect Paul Testa completely redesigned the ground floor to create a 'front-to-back' link that draws natural light through the house from both storeys

HIGH POINT

"Drawing a line under the building works, taking control of the final jobs, and finally being able to enjoy the house as our home. I would also include sitting upstairs, being warm and comfortable, looking out at driving snow coming in across the beautiful scenery."

and Mark would have to wait months before they could start. The second builder was able to keep within budget, providing Mark changed his choice of wooden framed windows for PVCu. They could also start within a couple of weeks.

"The fact that they could start so quickly should have rung warning bells, but hindsight is a wonderful thing," says Mark. However, at first they got on with the job very efficiently, starting in July with the promise of finishing by Christmas.

Mark moved into rented accommodation nearby while the builders started to dismantle the bungalow, removing the roof and most of the internal walls to the point where it was just a single storey bare shell.

The new roof was a key element of the rebuild, comprising a new dormer roof featuring zinc cladding and a replacement pitched roof section featuring Marley Modern roof tiles.

"Everything seemed to be going well and the builders were at the point where the roof was not quite finished and partially covered in tarpaulin, when everything suddenly ground to a halt," says Mark. "It was November, and they had been called away to another job. Until this point they had rushed through the renovation – sometimes too quickly as it turns out – and then everything became painfully slow."

There was a justified delay when the original design for the MVHR system needed adjusting which, in turn, delayed the build. Then the company supplying the bathroom tiles went bankrupt, and a replacement had to be found.

However, although the builder's contract ended

at the start of January, the work ran on and on, as the builders finished jobs in a piecemeal fashion. When they were signed off in May – in Mark's view prematurely – some work had not been completed, such as the MVHR system, and there was still a long list of snagging to resolve.

"It was a nightmare," says Mark. "Just one example, there were endless broken roof tiles and the edge was not mechanically sound, symptomatic of the poor finish that was found in many places. The builders then tried to charge me for storage of the kitchen, which had arrived on time but they still hadn't managed to install, even though the delays were largely down to their own lack of organisation and attention to detail. Someone had to come back seven times to finish the guttering and they never did complete the porch – I had to sort that out later. The lack of attention to detail was dreadful. It reached the point where relations just broke down completely. We finally came to an agreement and drew a line under everything before we ended up in the small claims court."

By August 2019 Mark started decorating and moved back in so he could finish the remaining issues himself. These included resealing the shower, which leaked, sorting a crack in the garage roof and finally completing the porch.

"The whole experience left me feeling emotionally and physically drained," says Mark. "The money I saved on the windows was re-spent trying to rectify mistakes and by the time the build was finished I was £5,000 over budget and the project had taken more than twice as long as it should have done." The positive news



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in all of this hassle was that during the year of the renovation he met his now wife, Debbie, who is a community mental health nurse. "Instead of the house reminding me of all the negatives of the build process, it actually represents a new beginning." Although Debbie was not involved in the original design, Mark says she saved him from a nervous breakdown during the build, and together they tweaked the design and chose the fittings. "Debbie's input was key in making the house look as wonderful as it does now," he says.

There is another bonus, too. Mark bought the bungalow, in its original state, for £320,000 and spent £180,000 on the renovation and extension. He recently had it valued at between £550,000 and £600,000. He has also reduced the running costs. Even though the house sits 800 feet above sea level on an exposed site, the average monthly heating bills are less than £70 thanks to the triple glazed windows, high spec insulation and airtight qualities.

"It's been a huge learning curve, and hindsight is a wonderful thing," says Mark. "However, if I were to do it again I would learn from my mistakes. When getting a quote I would include every single detail of the project, including the

fine details of materials to be used. I would check out recommended builders by looking at their previous projects and talking to the owners. I would be prepared to wait for the right builder, and I would visit the site every day if possible. Doing a renovation or building project like this can be hugely rewarding, but you need a strong constitution. It can be extremely stressful."

That said, Mark still believes he made the right choice in buying the bungalow, as the location was pivotal to everything. After that, it was a case of finding an architect who understood his wish-list and could help turn his dreams into an affordable reality.

"Thanks to Paul, the design of the house is spot on, with plenty of light flooding in from the north-facing back of the house via an open passage to the front of the property, and more light coming in from the landing and down the stairs," says Mark. "It's gone from a dark, poky and very dated bungalow to a light, modern, two storey home with a layout that finally works. I'm not planning to move from here but if you were to ask me whether I would do it again then, yes, I probably would – but I'd make sure I got the best builders in to do it!" ■

SITTING ROOM

The original chimney breast was retained to create a feature in the sitting room, one of the few rooms that remains unchanged apart from a new floor and window

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Get hip to SIPs

SIPs systems offer an extremely low energy and eco-friendly construction method that's also incredibly strong and quick to build. Matt Banks of SIPs Eco Panels explains more about the options available

As we move into an era of low energy zero carbon construction, the inherent energy efficient, airtight nature of structural insulated panels has attracted self-builders across the world. SIPs (Structural Insulated Panels) now account for around 10 per cent of all self-build construction and this is increasing rapidly. The average SIPs home benefits from a 50 per cent decrease in energy consumption and drastically reduced CO₂ emissions. In fact, manufacturing of SIPs uses 80 per cent less energy than traditional building methods, making it a popular green building method.

One of the major benefits of structural insulated panels over traditional masonry or timber frame construction is speed. A typical SIPs three-bedroom home can be installed on site in a period of five to seven days, resulting in huge savings on build programme and labour costs. The installation of a SIPs structure also requires significantly less manpower and site supervision with the majority of installation teams being made up of four operatives.

Offsite fabrication removes the risk factors involved in traditional onsite construction. SIPs are precision manufactured in controlled factory conditions using CNC machine cutting with extreme accuracy and minimal waste. Once design drawings are agreed, a SIPs superstructure can be fabricated in four to six weeks and delivered straight to site for immediate installation.

SIPs houses can be built with zero reliance on weather conditions, for minimal disruption to the critical path. The building envelope can be installed in most weather conditions without the need for wet trades like brick and block construction, which needs to be left to dry and is heavily impacted by poor weather. Once the SIPs structure is up, it is wrapped in a breather membrane, leaving it wind and watertight and ready for internal and external trades to get to work without delay. This again significantly reduces the overall construction programme and is up to three times faster than other traditional



construction methods.

A more innovative approach to roof construction results in increased usable roof space. SIPs roof panels are structural and arrive pre-cut and fully insulated with no need for roof trusses. The elimination of trusses can result in a double height floor to ceiling. With the extra space, you can leave a large open ceiling space either for storage or install partitions to add extra rooms, or opt for a vaulted ceiling. Dormers or skylights can be very easily added at little extra cost, allowing for design flexibility to make the most of the system.

CHOOSING THE RIGHT TYPE OF SIPS SYSTEM FOR YOUR PROJECT

There are two main types of SIPs, the difference being the insulation used:

- EPS (Expanded Polystyrene) – 100 per cent recyclable and extremely durable. EPS insulation has zero ODP (Ozone Depletion Potential) and GWP (Global Warming Potential).
- Injected fibre-free rigid urethane core.

Both systems consist of an insulating foam core sandwiched between two structural facings typically OSB3 (oriented strand board). EPS has been used in the construction industry for decades, it's lighter in weight and easy to install. EPS insulation is non-toxic and chemically inert and does not degrade or delaminate over time. Although you get a slightly

As a SIPs build can be completed up to three times faster than other structural systems, overall construction costs can be reduced

thinner wall with rigid urethane SIPs, its thermal performance can be reduced over the first three years of use. SIPs panels are extremely strong, and surrounded by high quality structural grade timber.

Where structural requirements allow, manufacturers will use a purpose-built joining system, in the form of an insulated SIPs spline connecting the panels. This SIPs joining spline provides continuous insulation and high levels of airtightness compared to a standard timber frame kit. Traditional timber frame for example, has a much lower thermal resistance and has



been recorded as losing more than 30 per cent of a household's energy.

Beyond the building envelope, some SIPs manufacturers will only supply all internal walls as studwork. However, for increased thermal and acoustic performance, other manufacturers can also supply a thinner SIPs internal wall panel in place of studwork, giving a greater flexibility of choice for self-builders.

Whichever system you choose, make sure the SIPs manufacturer is accredited

with UKAS recognised certification and are Gold Assure Members of the Structural Timber Association. These manufacturers will be regularly audited by independent third party organisations to ensure standards of excellence are maintained.

COST EFFECTIVE

When comparing structural systems, it's clearly important to look at the overall construction costs of the project. While SIPs can appear a more expensive form

of construction initially, there are major time and overall cost savings across the entire build programme. Unlike timber frame or masonry systems that require additional follow on trades to fit insulation and prepare the structure to be ready for first fit electrics, plumping and dry linings, a SIPs package is ready to go. With a SIPs system, you are getting a fully insulated structural shell that does not require any follow-on trades, labour or additional materials.

As a SIPs build can be completed up to three times faster than other structural systems, overall construction costs can be reduced. This time saving results in reduced scaffolding costs, lower plant hire costs, savings on labour, site management, accommodation and a huge reduction in site waste. This speed of build and the reduction of risk brought about by the offsite manufacturing process results in fewer delays, an efficient build, and fewer unexpected costs.

Structural Insulated Panels (SIPs) are the future of building in the UK, and will continue to change the landscape of the construction industry for years to come.

Matt Banks is commercial director at SIPs Eco Panels



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CASE STUDY



A NEW LEASE OF LIFE

When David and Martin Ratcliff set about adding a top-floor extension to their handsome Victorian terraced house in South West London, they had no idea their project would end up taking such a different path

TEXT JENNIFER GRIMBLE IMAGES RICHARD CHIVERS

After successfully renovating a property in the heart of Soho, David and Martin Ratcliff purchased a three-storey Victorian terraced house on an exclusive road in south west London. They knew before they secured the deal that they had the ambition and eye for detail required to bring the once grand home back to its former glory.

The couple decided to complete the internal makeover before moving in, and turned to Ruta Benetyte of Vita Architecture to produce a design. Their initial aim was relatively simple; to spruce up the interior and add a rooftop hub and terrace to the top floor. "This simple

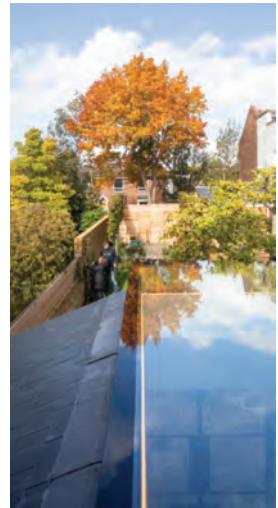
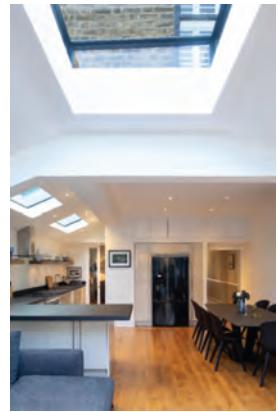
extension would provide an extra bedroom, while the terrace would allow us to make the most of our north-west orientation," David explains.

Their brief to Ruta was for a clean and simple design that maintained the original aesthetic of the house, while enhancing its refined features. From ornate cornicing to wrought-iron radiators and hardwood floors, there was already plenty to admire about this period property. "We wanted the remodel to have longevity," Martin says. "The space needed to continue to look fantastic for years to come." For this to work, they needed to focus on specifying high quality

LOW POINT

"The custom-made box skylight in the kitchen caused a fair amount of anxiety, especially because of its size. Yet thanks to good communication and proper planning, we were able to make the installation a success."





materials with careful detailing. The project had to be about perfecting what was already there, without cutting corners.

AN ALTERNATIVE APPROACH

However, as the design process got underway everyone involved began to realise that something just wasn't right about the layout of the house. "We knew that if we wanted to get the refurbishment right first time, much more work needed to be done," Ruta explains.

The existing ground-floor extension had an unsightly and old-fashioned roof lantern and the home's oversized windows were overpowering the internal spaces. It was also convoluted in terms of layout, with a number of ceiling levels and structural elements exposed in a problematic way. "We had to find a way to tidy up and simplify the layout of the ground floor," David explains.

On the top floor, the layout didn't function well; there was no real flow between each living zone. Coming to a decision together, David, Martin and Ruta decided the whole house needed to be reconsidered. "We all agreed that it just wasn't worth adding something beautiful upstairs, when the rest of the house wasn't working," says Ruta.

The project quickly became much more all-encompassing and the team began looking at how to bring the whole house together. The changes would all be aesthetic, making the

planning and design process that little bit smoother. "The aim now was to remove all the aspects of the house that would become troublesome later down the line," Ruta says. "We decided to take a wider approach and began designing a complete facelift that would include garden landscaping, the remodelling of the existing rear extension, a ground-floor refurbishment and reconfiguration of the first and second floors."

GETTING TO PLANNING

Working together on the design, the group met regularly to hone their ideas. David and Martin had plenty of thoughts about what they wanted, but were also keen to take on suggestions from Ruta. Their focus was on creating a seamless design that would work for years to come. The key to the design was to create internal spaces that were arranged in a comfortable way. Every aspect needed to flow together effortlessly.

Since the house is located in a Conservation Area, formed from prominent Victorian residences, any exterior details needed to be considered carefully. So, instead of leaving conversations with the local planning department until last, Ruta included them in every aspect of the design process. "We knew the rooftop pod and terrace would need to meet certain criteria," she explains. "With period properties, keeping your design sympathetic to the surrounding architecture is

INTERIOR

The home's chic and simple interior effortlessly blends Victorian elements with contemporary design



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extremely important, and is really the best way to obtain planning consent without challenge."

The process required the team to communicate and work closely with the council, to meet their aesthetic and size requirements. "The conversations we had allowed us to express what we were looking to achieve, but also ensured we didn't need to compromise on the finishes and overall look of the design," says Ruta.

They were told that the rooftop pod needed to be a similar size and style to the one found next door. This way, the retreat wouldn't cause privacy issues or affect the surrounding vernacular. Since the existing three-storey terraced property had a striking brick facade, the new addition also needed to seamlessly tie in with this classic look.

The planning stage definitely required some give-and-take. "We wanted to build the rooftop pod with straight lines, but we were told to create a sloped side in a mansard style, to match the rear extension on the ground floor," Ruta says. "As long as you aim for a high quality and sensitive finish councils don't usually object, so we weren't really challenged on anything too much."

Thanks to this open dialogue, the team obtained planning consent quickly. They provided reasoning for their design choices, highlighting how they would enhance the building. "This was something the council were open to working with us on," David says. "We created a concise design that tied in beautifully with the surrounding area. Luckily, the authorities agreed to a number of details that would otherwise have compromised the overall finish of the build."

"We created a concise design that tied in beautifully with the house's surroundings"

SMOOTH SAILING

After obtaining the go-ahead, work could get started. Although the approved plans incorporated a reconfiguration of the first and second floors, as well as a rooftop pod and terrace, minimal structural work was needed. The biggest job was reducing the size of the original windows and replacing the old-fashioned lantern in the existing kitchen with something more streamlined.

For the glazing, Ruta opted for steel-framed, Crittall-inspired designs from Fabco and Smart Aluminium Constructions. With barely-there edging and a contemporary finish, there is also something elegant and timeless about this type of glazing product.

The refurbishment team collaborated with a shared aim: to create a beautiful home with a premium finish. David and Martin selected contractors they knew, and had worked with before, which enabled the project to run smoothly. Remarkably, no great difficulties cropped up and any challenges that arose were tackled by the team as a whole.

This success is something Ruta puts down to two things. "Communication is key to making

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INSIDE/OUTSIDE

Huge glass doors lead outside to a newly landscaped garden, which acts as an effortless extension of the interior



the renovation process easy, and we remained very open and honest with one another along the way," she says. "David and Martin were also incredibly responsive and were quick to make decisions and stick with them."

WITH FINESSE

The project began in July 2019 and was completed by October 2020. Beautifully put together, the home is an exhibition of elegant materials and refined period features. Every new element was selected for its longevity, complementing the character of the existing building while giving it that touch of finesse.

Ruta opted for a palette of zinc, brick, glass and steel, with a mix of tactile but hard-wearing materials internally. Throughout, there is a minimal colour scheme with pops of metal and warm timber accents. Every space is a celebration of the splendour of the Victorian era, and its ornate period details have been lovingly restored. The new steel frame doors beautifully tie in with the zinc cladding that decorates the rear facade, a product that is 100 per cent recyclable at end-of-life.

In the original ground-floor extension, the space has been opened up to create a seamless room that can be used for cooking, dining, entertaining and relaxing. Certain elements break up the room subtly, providing zones for different tasks. The new glazing has also helped to enhance the space. The aged roof lantern has been replaced by a large, custom box skylight with a minimal frame. The rest of the ground

floor was thoroughly refurbished, too, with timber wall panels and integrated joinery that gives a sleek finish.

Beautiful glass doors lead out to the newly landscaped garden. Tranquil and elegant, it feels like an extension of the internal living space. The area is David and Martin's favourite part of the house – it was completely reconfigured to provide a better link with their new extension.

The biggest changes took place on the upper floors of the house, however. On both levels, two medium-sized bedrooms were combined to create generously proportioned suites with plenty of natural light. On the first floor is a master suite with a dedicated walk-in wardrobe and shower room, finished with Venetian plaster and Fabco steel doors that are replicated elsewhere in the house.

Above, on the second floor, two more bedrooms can be found, one in its very own rooftop 'pod'. "The pod room leads out to a private terrace, which grounds the room beautifully," Martin says. "It has contemporary zinc cladding, which is beautifully detailed and wraps around the whole top floor."

David and Martin were closely involved with the specification of all the elements of the refurbishment, resulting in spaces that will work for them now, and in the years to come. "Thanks to their impeccable tastes, the finishes are sophisticated in an understated way," Ruta says. "There are no loud details, and the quality speaks for itself." ■

DAVID AND MARTIN'S ADVICE

"When taking on a project, do it with a holistic approach. The spaces should improve your quality of life – that is the primary thing you want from the place you chose to live and invest money in to. Sometimes it's not about increasing the size of the house, but ensuring that what's inside works for you and your lifestyle."

HIGH POINT

"Working together so closely enabled the project to run smoothly and it really felt like a team effort. We all had the same goal: to create a truly stunning home."

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Build a more sustainable home with high performance windows and doors

For many self-builders, the chance to build a dream home is also the opportunity to achieve a more sustainable lifestyle. The goal of zero carbon performance requires careful planning and research, however, and the specification of building products with real sustainability benefits, from how raw materials are sourced to eventual recycling.

Eco-friendly window and doors play a crucial role in sustainable performance – but what should you consider when planning your specification? Here's some advice:

- Thermal performance is given as a U-value, and the lower the U-value the better the insulation. Triple glazing delivers excellent thermal insulation but check first to see if you can meet your thermal targets with high performance double glazing, or with a strategic mix of double and triple.
- Indoor climate – windows are the key to achieving the perfect balance of natural light and fresh air. Look for slim framed window designs which can maximise daylight, and systems with a range of ventilation options such as trickle vents or sensor controlled window units.
- Lifetime costs – low maintenance windows not only help your pocket but are also more sustainable as they reduce the need for repair and replacement.
- Lifetime impacts – for a true picture of sustainability, ask your window supplier for a 'cradle to grave' analysis of raw materials, performance and disposal.

VELFAC GLAZING AT TEN OAKS, HERTFORDSHIRE

Almost a decade in the building, Ten Oaks is undoubtedly an impressive family home. Architects Kirkland Fraser Moor worked with owner Ian Mays (one of the founders and now retired CEO of RES, the world's largest independent renewable energy company) to create a 'climate restorative' zero carbon home with minimal visual impact on the



surrounding countryside. The highly distinctive circular building – with an additional circular annexe – features VELFAC composite glazing throughout, specified for its low-U values and slim-framed, contemporary and sustainable design.

'VELFAC triple glazed units met our thermal targets while the narrow frame design increased visibility from within the house and brought more daylight inside,' says Ian. 'We considered installing locally-made curved windows, but VELFAC was more cost effective and delivered the performance we needed. As a result, we opted for a faceted design where the larger window panels are as wide as possible without compromising the curved finish. The sustainability of the VELFAC aluminium / timber frame was also important,' adds Ian: 'Every unit is almost entirely recyclable and it's also very low maintenance, which again supports our zero carbon ambitions. The fact that VELFAC was part of the same group as VELUX was also reassuring, as we knew we were dealing with a large, established business.'

Large full height VELFAC units – together with smaller windows and VELFAC glazed doors – are installed across the house including in a striking run of five, 2.3m wide sliding patio doors set into the external facade. An additional 24 1m wide full height

glazed units have also been installed around the inner circular courtyard, of which 10 are hinged patio doors, and are set within stone 'frames' to create a colonnaded effect. An innovative ribbon run of VELFAC tilt-and-turn clerestory windows also wraps around the circumference of the annexe, and looks particularly dramatic when illuminated at night. In terms of frame finish, dark grey was specified for the external aluminium to minimise the impact of frame against glass while also providing a contrast with the brick built facades. Internal timber frames are finished in RAL 9010, which Ian describes as 'a very subtle off-white which allows the windows to 'disappear' into the white-painted walls and against the skyscape outside'.

Ten Oaks is zero carbon in operation and a net contributor of carbon free electricity back to the grid, thanks to its solar panels. Although not yet entirely carbon-neutral Ian expects to repay the carbon embodied in the house within 40 years through this export of solar power. If this figure includes the carbon savings of Ten Oaks relative to a house using more conventional design, materials, and heating and power systems, then the payback period is only eight years.

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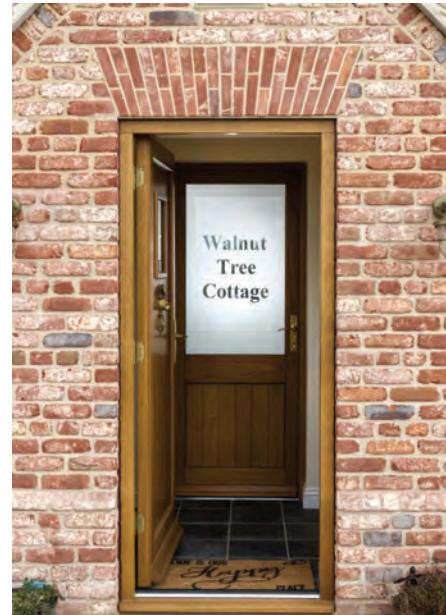
The walnut tree is a symbol of intelligence, wisdom and inspiration so it's no surprise that the owners of this self-build in South Lincolnshire have created such a beautiful home. When choosing materials, a list of key considerations was used by the couple to assess potential suppliers including locality, quality, service, product specifics and price. "We didn't choose suppliers based on price solely, we decided we were prepared to pay more for high quality and that's what we got from companies like George Barnsdale."

Kate and Leeson first became aware of George Barnsdale windows whilst visiting their architect who had them at his own property. Established in 1884 George Barnsdale still operates out of the same site in Donington, Lincolnshire so the self-builders paid a visit to the showroom and factory which

helped them make their minds up. They were particularly impressed with the level of customisation available, the quality of the products and the wide range of colours available. They also saw first-hand the lengths the company goes to in order to ensure their products will last at least 60 years with minimal maintenance. The unique four stage paint process and features like the patented sash seal reassured the couple that there really was no need to look outside the area for timber windows and doors.

Commenting, Kate said "Incorporating unique features like the glass etching really helped to personalise our home and we are delighted with the final results. The quality of the windows and doors is second to none."

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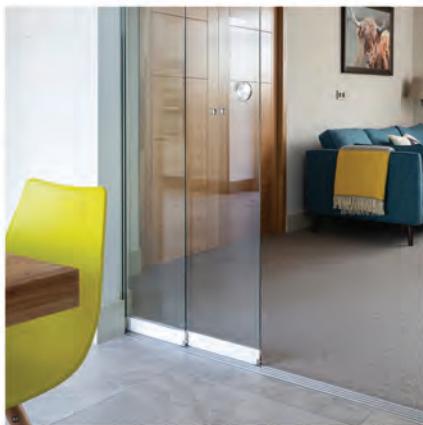
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CASE STUDY

ACCESSIBILITY BEGINS AT HOME

A plot on the family farm proved the perfect spot for John and Helen White to build a forever home for their family

TEXT ROSEANNE FIELD IMAGES JOHN & HELEN WHITE



For many who have long dreamed of building their own home, the first major hurdle is finding the right plot, but John and Helen White didn't have that problem. John's parents' farm in the village of Abernyte, just west of Dundee, turned out to be the perfect solution for their particular needs.

Having left home to go to university and then work, John says he always harboured the idea to at some point come back and build a house on the farm. While some might be put off at the thought of living so close to family, there were mutual benefits. His parents had been using external contractors to do the farm work, but now John helps out, and his parents are more than happy to have their three young

grandchildren so close by. One has "quite special needs," says John, paying tribute to his parents for being "amazing all through the journey."

Although the general location was therefore a no-brainer, choosing a specific patch of ground proved somewhat trickier. "Another one of our fields was our first option, but we were unsuccessful with planning," explains John. This site was across the road, making it more 'stand alone,' which "didn't really comply with any of Perth & Kinross planning department's requirements."

John spent around a year trying to identify the site: "I got a lot of support, a lot of expert advice," he explains, but it was "quite costly,





and took a lot of time and effort." Eventually someone from the planning office spent time walking around the farm with John discussing various potential plots. The couple were advised to go for full planning permission "to show our commitment, and what the house would look like." It was a "large upfront cost," and he admits, "if it hadn't worked out it would have been another chunk of money sunk." They also needed support from the local community, which thankfully was present.

Once they'd got permission, the house design itself "sailed through." However there was one more major investment when they made the decision to use kit frame supplier Scotframe for the build, which meant a structural reset. They had already paid a structural engineer to prepare drawings, but these had to be redone by Scotframe's team. "That was just down to our inexperience really and bad advice from out professionals involved at the time," John explains.

A DESIGN FOR LIFE

John and Helen had a very clear idea of what they wanted when it came to the layout and look. "We kind of sketched it up and gave it to the architect to make it look professional, but the actual design was basically done by ourselves," says John.

They knew what shape they wanted the house to be and how it would be laid out. A particular focus was designing a home that would suit their son for the rest of his life. The house is a square

shape, with two storeys at the front and three single storey 'wings' surrounding a sheltered courtyard. "It's a really safe, secure outside space outside so the kids can run in and out," says John. One of the 'wings' is home to an indoor swimming pool, which is brilliant for their family life. Additionally, although their son doesn't use a wheelchair, they ensured the house has level thresholds throughout so he could move about with as few potential trip hazards as possible.

They also included a bedroom and bathroom downstairs. "He's probably going to live with us when he's an adult so it can hopefully be a more independent space for him," says John. At the moment he has a bedroom upstairs alongside his brothers. The other key requirement was a big open living space. "He used to get quite upset when we left the room, and now we're all in one big room," John explains. "It's quite noisy, but we love it!"

After getting the initial drawings done they decided to work with a different designer after struggling to agree with the initial architect on the design features. They began working with architectural technician Matthew Cowan instead, who John says "looked at the house as the end result." For example, with the upstairs bedrooms the couple originally wanted large apertures in the master bedroom and smaller ones for the boys, but he advised them to consider how that would look from outside.

"He did lots of little tweaks that really improved the overall feel of the house," says

LOW POINT

"A few things on the plumbing side, a couple of little leaks – small things. And the day when the water came through. All quite easily resolved, but it was stressful."

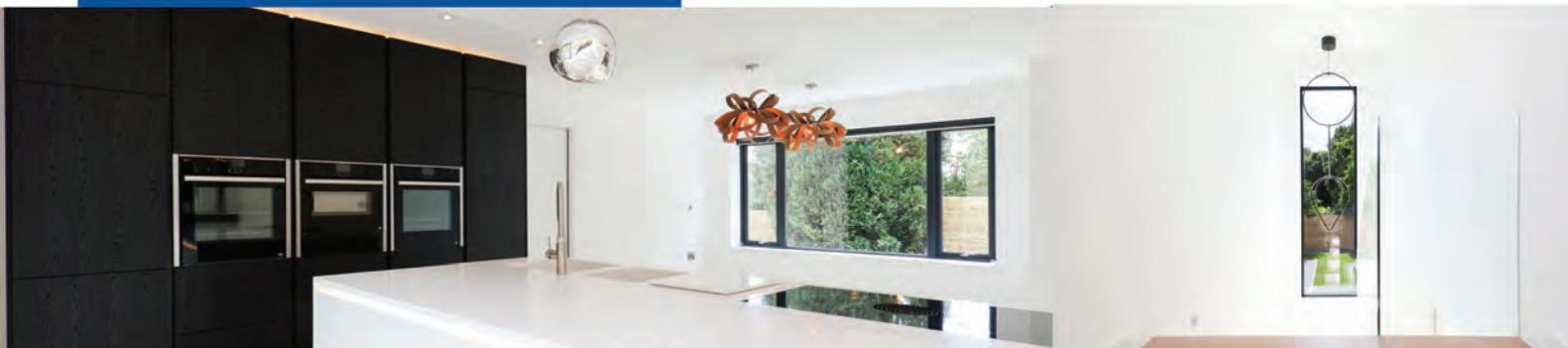


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HIGH POINT

"The end product; we absolutely love our house. It fits our life really well, the kids love it, it's great for parties and we've got room for friends to come and stay. Also we're really appreciative of the people who were involved in the building of it, overall it worked really well."

John. He also advised adding an overhang over the front door, to provide some shelter. "Simple things – thinking about the house as a functional family home."

Utilities, often a cause of self-builder angst, were largely stress-free for John and Helen, although costly. They had to extend the nearby water and electricity supply to the site, and added a private soakaway. "That was expensive because the soil up here is heavy clay and we had to dig out 120 metres," says John. "We were fortunate we were doing it on our own farm and there were no issues with access."

MAKING PROGRESS

The couple were already aware of Scotframe, not only because they're local – they also have friends who'd used them previously. They narrowed the quotes received down to three firms, but their friends' recommendations of Scotframe "played a big part" in their final decision.

It was through friends that they also chose their main contractor – a friend's family has a housebuilding company, RD Morgan, which John says was "a big draw". They had heard stories about builders "turning up and then disappearing", so they wanted to be able to trust whoever they decided to work with. "It turned out really well, we had a great relationship during the whole build," he says.

John credits the subcontractors with being a big help with various aspects of the project. One

They had already paid a structural engineer to prepare drawings, but these had to be redone by Scotframe's team

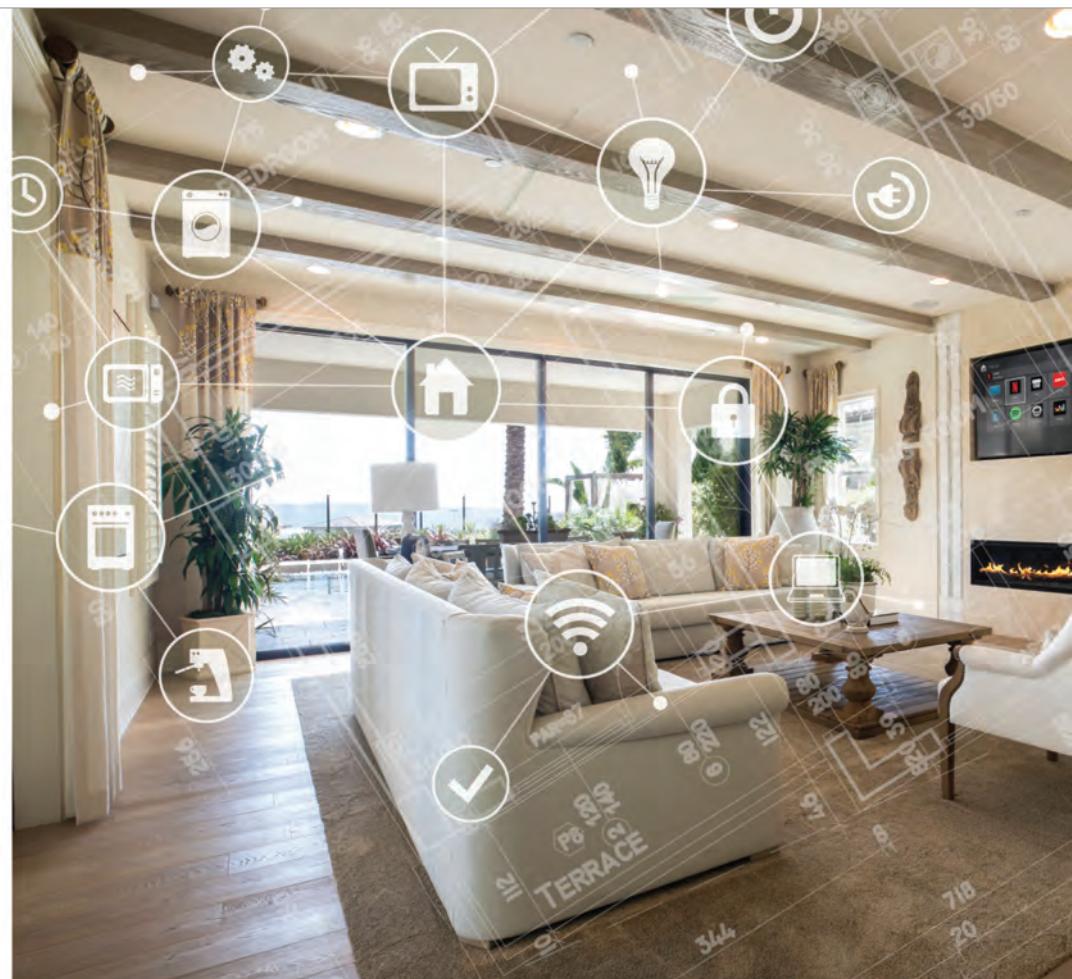
in particular, Aqua Leisure, helped hugely with the pool, something they'd been struggling with as being relatively inexperienced with such a construction. They considered delaying it as cost estimates were spiralling, but "he came through and helped us out with contacts and things that managed to get it back to something sensible and manageable," explains John. Their main contractor also advised putting hardcore around the outside of the property to avoid it becoming a "mudbath," which also provided a good base for scaffolding.

Their main contractor also took it on the chin when a storm caused damage to the interior. The Nordan windows, which John and Helen arranged through Scotframe, ended up being delayed by 12 weeks. To get the house wind and watertight the builder put up plastic sheets to enable them to continue work. However, a

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bad storm blew one of the sheets aside, unfortunately allowing a lot of water in. "He took full responsibility and got it all dried and sorted out."

Although resolved, situations like this were nonetheless testing, particularly for Helen who was project managing the build while looking after the children, while John was abroad with work for weeks at a time. She also had to deal with the issues caused by a few plumbing leaks. "She was up here every day looking at the contractors and plans – she planned all the lighting, flooring and a lot of the interior design," says John. The couple were renting a house in the nearby village during the build, having sold their house quicker than expected. "It was quite handy being able to pop up and down."

There were also small hiccups with some subcontractors – partly due to being brought in by both John and Helen and also by their contractor. "Some things maybe weren't paid attention to because he thought they were our guys', and we thought they were his," John explains. One such example was the drain test, which could have been done earlier. "You can do it before the plasterboard's up, you can just chase any leaks, but if you do it at the end there can be quite an investigation," he says. "So Helen was up here with the builder digging up floors trying to get it all sorted, but they did really well!"

What John says was his "practical background" meant he also took on some elements of the project. He took care of choosing the heating system – which he admits took longer than hoped. "It took about six months to find the right company, just because of the lack of experience," he says. "There are so many different options, plus we had the added complexity of the pool, which needs its own heating." In the end he settled on air source heat pumps, supplied and installed by Anderson Floor Warming, one for the main house and one for the pool. "They're amazing – even down to minus 15 degrees they still work well."

They installed underfloor heating which John prefers as it saves space on radiators. However,

"It's a really safe, secure outside space outside so the kids can run in and out"

- John

while they find the system works well for them, he admits it maybe wasn't the best solution from an economical point of view. The large windows means the house benefits from a lot of solar gain, so they often find they don't need the underfloor heating on during the day. "I don't think it was a bad choice, but potentially with a modern house with such good insulation and solar gain, it may be more economical to go with a radiator system," he says. They're also not opposed to installing solar panels later down the line, but with the technology continuously evolving, John was reluctant to spend the money at the time.

They chose one of Scotframe's top end insulation packages which helps make the house very cosy, and keep running costs as low as possible. "When it's your forever house, that's definitely the way to do it," he says. He notes that the Nordan windows as well as the Scotframe system itself "offered some of the best U-values."

Despite encountering a few small bumps in the road, the build didn't take too long. They broke ground in March 2019, and moved in December. John credits the contractors for the speed at which they managed to get in. "It's a big house, and the guys did well. Their commitment to the job just removes an awful lot of stress."

Erection of the frame itself was very speedy, taking only a week. "The joiners were really impressed with the frame, it was all labelled well and was really easy to put up," John says. The windows being supplied by Scotframe also meant installing those was smooth in terms of them fitting. "It was like a jigsaw, everything just

ARCHITECT

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JOHN'S ADVICE

"Pick your architect with care, and do the design yourself – make sure you've really got an idea in your head before you go to professionals, otherwise you're just going to spend money to get there. Also don't worry too much about the small things, people seem to get hung up on little decisions but they can all be changed, as long as you get the main structure how you want it."

fitted perfectly. It's a well thought out package, the wood, skirting boards, window sills etc."

Due to the temperamental Scottish weather, John and Helen chose to install sliding doors as opposed to bifolds, worrying bifolds might not fare so well when subjected to high winds. Sliding doors also offer a slimmer frame, which along with the tall, frameless windows allows them to make the most of the views. It was something they changed after seeing sliding doors at an exhibition, where they also learnt about MVHR, which benefitted them as they wanted to avoid having openings on the windows but needed to fulfil certain ventilation requirements.

Despite their substantial size, the windows were fairly simple to install. The only ones which proved slightly tricky were the large ones by the stairs. "We couldn't get a machine in the courtyard, so they had to be carried through the house," John explains.

THE RIGHT LAYOUT & LOOK

The five bedroom house features a large open kitchen/living space downstairs, complete with a woodburner, with a separate pantry off the kitchen and a boot room and toilet near the front door. "The boot room is a handy space, and the pantry means there's less clutter in the kitchen," says John. There's also a hall leading off to the additional bedroom and bathroom earmarked for their son in the future. Upstairs are four bedrooms, including a master with ensuite, and a family bathroom.

Externally the building is mostly finished with a roughcast render and slate roof, with some larch

"We're delighted, it really works for our family. We like the flow of it"
- John

cladding elements added to "break up the front," says John. The 'wing' housing the pool is fully clad and has a metal roof to add an agricultural element.

The couple didn't have an absolutely strict budget, but did somewhat underestimate the final cost. "We knew we weren't building a cheap house, it's our forever house, but we thought it was going to be cheaper," John confesses. "Once we'd been to some home shows and started getting quotes we realised it was going to be quite a bit more." They also hadn't factored in how much things like lighting would cost, but unanticipated costs aside, John says "nearly everything was delivered to quote."

Having now lived in the house for just over a year, the family couldn't be happier. "We're delighted, it really works for our family," says John. "We like the flow." Because of how well it works for them, John's almost certain they wouldn't do another build; the next project is to improve the garden. "It's not that building it was so stressful we'd never want to do it again, there just wouldn't be that same passion," he says. "We just want to stay here." ■

Radiating future relevance

With energy efficient heating systems fast becoming vital components of new homes, Chris Harvey of Stelrad Radiators looks at some of the hottest ideas when it comes to radiator innovation for self-builds

With the major changes taking place in the UK heating sector, self-builders are among those taking a good hard look at the options available to them to keep their new homes warm and cosy, while also taking advantage of the technology available to them. The Government has said that from 2025, no new properties built will be allowed to utilise fossil fuelled heating systems, so it's 'bye bye' to boilers as we know them although there is a lot of hot air currently being shared by boiler manufacturers about the arrival of hydrogen-fuelled boilers.

Having a boiler that works and having the infrastructure to provide the quantity of hydrogen required to power the millions of boilers operating in the UK is something very different. Many people are realising that the tried and tested technology of heat pumps – air source or ground source – makes total sense. This comes slightly later than our European cousins, who have embraced the proven technology already and are installing hundreds of thousands of heat pumps every year.

Here in the UK we are managing something like 25,000 heat pump installations a year, although that number is set to increase exponentially in the next two or three years, with new build developers in particular, likely to lead the way with a switch to heat pumps to provide heating and hot water in far better insulated new build properties up and down the UK. And it seems likely that self-builders will be joining them to raise the levels of acceptance of heat pumps as the primary source of heating and hot water in their homes.

RADIATOR TECHNOLOGY

But as well as the technology to drive the heating system, it's important to consider the means of sharing the heat generated effectively around the home. Will the



current technology be able to cope with the lower 45-50 degrees temperatures generated by heat pumps when compared to the 80 degrees plus generated by boilers?

The simple answer is yes, they will, but as with all radiators even nowadays, they will need to be sized correctly for the heat source and for the rooms they need to heat. Better levels of insulation will add to the cosiness of homes and the heat from a renewable heating system is more than adequate to keep us all warm even during the coldest days of winter. Just think of the areas of the world where heat pumps are most popular – Scandinavia, Canada – hardly the warmest parts of the world, yet they are more than happy to entrust the heating and hot water to heat pump driven heating systems. The

It's 'bye bye' to boilers as we know them although there is a lot of hot air currently being shared about the arrival of hydrogen-fuelled boilers



majority of them are partnered with radiators, in some cases shared with underfloor heating.

Radiators are a key component of most heating systems in the UK – around 90 per cent of all heating systems are partnered with radiators. In recent years radiators have improved in efficiency and design with better designed water channels, and new ways of reducing the water content required to flow through radiators while increasing the amount of metal that comes into contact with that heated water to share more heat more efficiently around the home.

With the advent of renewable heating systems, we are seeing the need for larger radiators and for higher capacity radiators – such as a rise in sales of K3 radiators. These have three panels and three sets of fins, allowing for 50 per cent more metal surface area to warm the air than a standard K2 double panel radiator, without increasing the wall footprint. We are also seeing the sales of larger radiators which is not surprising, as radiators today are increasingly seen as part of the decor – not simply an appliance. A huge range of different styles and designs are available – such as designer radiators and premium panel radiators – to blend in perfectly with decor. You can get up to 36 different colours to match or contrast your colour schemes – no longer ‘any colour so long as it’s white’!

KEEPING UP WITH HEATING TRENDS

Over the past couple of decades the race for more efficient heating systems has been paramount in the heating industry, with the arrival first of combi boilers and then of condensing, modulating boilers, followed by the development of far better heating controls, energy efficient pumps and a wider range of more effective radiators. The development of lower temperature heating systems,

utilising renewable heating has given us another challenge, but it's one the industry has risen to and are able to respond to effectively. Radiators are all compatible with all heating systems – traditional and renewable – when sized correctly.

In the area of renewable heating systems, radiators have developed to offer the compatible solutions that people will feel comfortable with. In terms of styles, there are a much wider range of vertical radiators available, adding to the huge number of new designs and sizes, and helping to provide the larger radiators needed by the renewable heating options. Vertical radiators, with a much reduced horizontal footprint, can slot into smaller wall areas in a room, to provide the levels of heat required without taking up large wall areas that can cause confrontation with furniture in the rooms.

Much thought has gone into the latest radiator developments and it's all to ensure that the radiators available are 'fit for the future' – able to continue providing the levels of heat required in homes in the UK to keep everyone comfortable.

Chris Harvey is head of marketing at Stelrad Radiators

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Marmox Tilebacker board used for five bathroom fit-out

Launched recently, 'The Tilebacker' board manufactured by **Marmox Limited**, has been chosen by a specialist sub-contractor working on a very large residential property in Maidstone, to help create a total of five bathrooms and en-suite shower rooms. Locally based J. Jupp Tiling works across Kent and into the capital, mainly on domestic contracts, and has been a long time user of Marmox products including the manufacturer's widely specified Multiboards. With some 130m² of wall area to address and 22mm thick structural ply already fixed in place as the substrate, it made practical and economic sense to switch to the new value-for-money alternative.

Director Josh Jupp comments: "I have been using Marmox products including Multiboard, along with the tapes and fixings, for a good while and always found them very dependable for the high-end residential projects we are involved on. I like the new Tilebacker which is relatively lighter and even simpler to cut than the Multiboard and it seemed perfect for the house in Maidstone where we are working for a private developer. The Tilebacker boards will soon be covered with 1200 x 1200 x 6mm Italian tiles, which will create really striking interiors. This has been a successful first try out with the new boards and I am planning to use them again for our next job which features more than 300m² of tiling, including three very large bathrooms."

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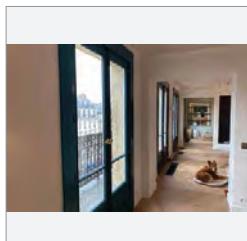


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CASE STUDY



SEEING THE LIGHT

A dark and run-down Regency villa has been rebuilt 'from the inside out,' with a new basement level and exciting glass features which draw in the light

TEXT DEBBIE JEFFERY IMAGES MATT CLAYTON PHOTOGRAPHY

"When we first bought this house back in 2013 Esther and I didn't have any children, but by the time we moved in we were married and our two sons had been born," says Nishant. "The project took so long because we chose a complicated route – excavating a new basement on a semi-detached house in a well-known Conservation Area. It was a difficult project, especially as we'd never tackled any building work before."

Esther and Nishant met at Harvard Business School – both now work in private equity – and had previously been living just around the corner in a small mews house which was their first home together. Planning to start a family, the couple began searching for a larger property.

The rundown four-bedroom house they found had once been divided into bedsits and was marketed as offering 'significant potential for developing and extending, subject to the usual consents.' Situated in the heart of South Kensington, the house stands on a characterful,

tree-lined street surrounded by a mixture of early Victorian architecture, which is highly unusual for the area.

"The house was probably in the worst condition of the whole street and hadn't been touched since the 1940s. It had been owned by a couple who were trying to renovate it themselves on a DIY basis," says Nishant. "Being in complete disrepair meant that it was very well priced, but there was just one functioning bathroom and no proper kitchen, so they were using hot plates to prepare food."

Purchasing the house proved a long, drawn-out process, and the couple then approached several architects to discuss their ideas, but realised that gaining planning permission for these ambitious designs would be impractical. Visible external alterations were restricted by the sensitive nature of the setting, and the four-storey property was divided into a warren of small, dark rooms, with limited ceiling height on the lower ground floor.

EXTERIOR

The front of the house has remained traditional, with replacement sash windows, and a small upper extension to the side wing

LOW POINT

"The delays were extremely painful – everything took so long because of our sensitive location and the ambitious plans to excavate a new basement."



“The house was probably in the worst condition of the whole street and hadn’t been touched since the 1940s”



"The location had a huge impact on what we could do and gaining planning permission proved to be quite an epic struggle," says Nishant. "Typically, this type of house can be dark, particularly in the entrance hallway, so introducing light was our top priority. As we couldn't build upwards, we went down and created a basement with an extra bedroom and bathroom, a TV room and utility."

Nishant is Indian-American and Esther is German-American. Experience of homes in their respective countries coloured their aspirations and helped to inspire a love of simple, modern, open interiors. "Having so many storeys and stairs isn't ideal for a family, but we hoped that creating light, bright spaces would help to counteract the vertical nature of the house," explains Nishant.

Cox Architects seeks to provide creative and practical solutions to architecture, landscaping, and interior design briefs – from the smallest residential refurbishment project to large new-build houses – and the practice was challenged to transform the damp, dark, tightly enclosed house into an open, light-filled five-bedroom family home. At the same time, Esther and Nishant wanted to increase floor space with a new basement, modernise all services, and massively improve the building's long-term energy performance.

"The pit' was their name for the shallow yard at the back of the house, and the existing staircase was taking up valuable floor space and complicating the plan, while the building's small side wing was underused and dysfunctional,"

Planning permission was achieved to extend and raise the wing, and the new staircase became the signature note for the entire house

explains architect Steve Cox.

"We needed to obtain consent in a Conservation Area to alter the side wing, and thereby unlock potential. Planning permission was achieved to extend and raise the wing, and the new staircase became the signature note for the entire house."

In addition to gaining Conservation Area consent, planning and Building Control approval, and producing a detailed design, Cox Architects also tendered for and selected the building contractor – project managing the entire process from start to finish. Party wall agreements were also needed from the neighbouring flats before work could go ahead.

"We were very much guided by Steve, who is a perfectionist, and carefully designed every

STAIRCASE

Finding space for an elegant new mild steel and ash staircase, with walk-on glass landings, unlocked the potential of what was a rundown Regency villa

HIGH POINT

"Seeing the amount of light which now comes into the house, after installing so much glass."

NISHANT'S ADVICE

"Use a specialist basement contractor if you need a speedy excavation and think carefully about whether it makes financial sense."



detail," says Nishant. "Having someone who was so involved and invested in our project really took the pressure off and allowed us to enjoy the process."

The 185 square metre house was completely rebuilt from the inside out, and 46 square metres of basement added to create a five-storey, five-bedroom family home with two double reception rooms and four bathrooms. The main concerns were to bring as much natural light to the interiors as possible while upgrading the entire building to modern standards of service and finish.

Lionhead Construction was engaged as the main contractor for the project, working with their in-house team of tradespeople together with external specialists and subcontractors, such as the glazing supplier and staircase manufacturer.

"The first stage was the demolition, stripping out the interiors to the bare walls, and then the digging, which was the biggest challenge," recalls Nishant. As the house is located on a narrow street, and has a small front and rear garden – servicing the site, taking away earth, delivering and storing materials were challenging for the builder, particularly during the excavation of the basement. Fortunately, this issue was eased somewhat when a neighbour kindly offered the use of their driveway for deliveries.

"Mechanical excavation was out of the question for most of the



time, so huge volumes of heavy London clay and gravel had to be dug by hand and removed bit by bit via the narrow street access," says Steve Cox.

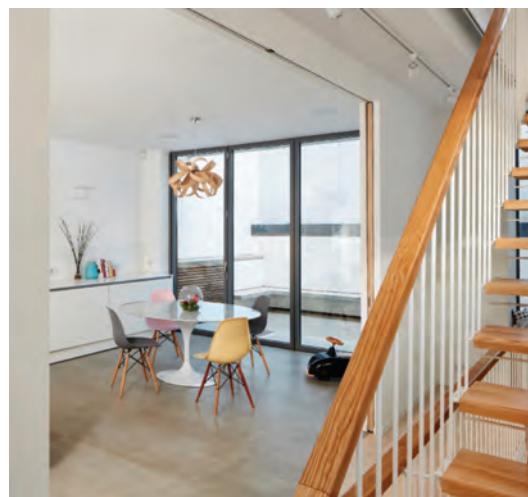
Underpinning the original foundations with concrete was carried out in a strict sequence – minimising the risk of structural movement above – and the completed concrete box was lined with a tanking system and insulation to form the new rooms, including a home cinema and all the mechanical services.

Externally, the entire brick house required repointing, with matching reclaimed bricks sourced for new-build elements. Double glazed replacement timber sash window frames were approved for the front street elevation, with more contemporary glazing elsewhere.

Glass plays a crucial role in the transformation of the house, and a seven-metre-long frameless glass skylight floods the stairway with natural light. Walk-on glass hallways ensure that light filters down to all principal floors, and an external walk-on glass balcony on the ground floor prevents overshadowing the rooms below.

"Our architect devised all the glass features, which are positioned so the house is now bathed in light throughout," says Nishant. "Having rooms open to the staircase also allows light to percolate through the house."

By extending to the side on two floors, the winding main staircase could be moved from the centre to the edge of the building's plan, freeing up useable floor space. Crafted from



mild steel, with ash treads and handrails, the new staircase features walk-on glass landings, with shadows cast from the rooflight against the upright steel banisters.

"The staircase and skylight were the real game changers for the house," says Nishant. "They have totally altered its look and feel by opening up spaces and bringing light right into the heart of the building. Spending money on the bigger structural alterations was an investment, although we did end up coming in over our original budget."

Removing walls and eliminating hallways ensures that the interiors are now unrecognisable. The entire building has been rewired and newly plumbed, with underfloor heating laid throughout.

"We wanted to make the house as high tech as possible, so completely rewiring it for wi-fi and Cat 6 cabling was important," says Nishant. "All the plant and workings are housed down in the basement, and we can control the underfloor heating from our phones."

Breaking through the top floor ceiling to expose the roof structure uncovered a pleasant surprise: the roof was in excellent condition and would not require replacing, as originally anticipated. Removing the old ceiling also created an attractive vaulted space, with enough height for a mezzanine study level, which is accessed by a ladder and lit from above by a rooflight. This has proved ideal for Nishant as a workplace during lockdown.

KITCHEN

A Poggenpohl Goldreif MH Deco handle-less kitchen was teamed with Corian worktops and concrete-effect floor tiles in the lower ground floor kitchen

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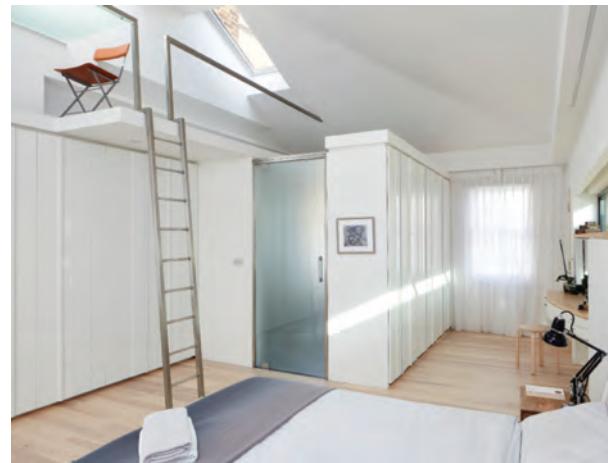
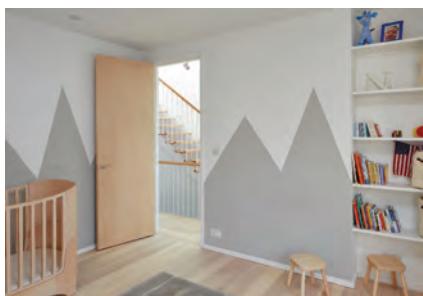
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CHILDREN'S ROOMS

The two children's rooms share a Jack and Jill bathroom accessed via curved doors set into walls of storage

MAIN BEDROOM

Removing the ceiling created a vaulted main bedroom on the top floor with space for a mezzanine study

"There was a debate about whether the children's rooms should be on the top floor but, in the end, we chose to have our main bedroom and ensuite up there, with the boys on the next floor down," he says. "They share a Jack and Jill bathroom, with curved white doors made by our builder, which disappear into the bedroom walls when they're closed."

Ash has been used for plank flooring, bespoke internal doors, and joinery throughout the house, creating a cohesive feel, with ceramic floor tiles laid in high-traffic areas. "We have a habit of taking our shoes off in the entrance, so laying floor tiles in this area makes it easier to clean," explains Nishant. "The same concrete-effect tile leads downstairs to the new kitchen, where in the hallway we have a wood floor."

Externally, 40 square metres of glass micro mosaic tiles on a modelled substrate were used to cover the 7 metre high back wall of the rear garden, to bounce light down to the lowest floors and provide a subtle, shimmering backdrop to the main living spaces in the house.

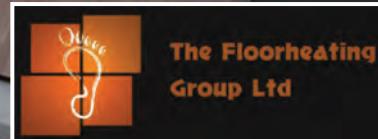
On the upper ground floor, the spacious sitting room features a contemporary three-sided glass gas fire, designed to supplement the underfloor heating. "It's a very open space, and we knew this could potentially be the coldest room in the house, so we installed a powerful fire," says Nishant. "It was an extravagance, but really warms the house and creates a lovely feel."

In contrast, the lower ground floor kitchen is the warmest area, and has been fitted with simple cabinetry and bespoke storage solutions, which retain the pared-back Scandinavian feel favoured by the couple. They chose speckled white Corian counter tops, with a large ash island which is where the family tend to spend much of their time.

"Our builder created fantastic bespoke storage and furniture, such as the ash dressing table in our bedroom," says Nishant. "We didn't get physically involved at all with the project, but we did buy new furniture to suit the design and liaised with our architect when choosing things like the bathroom sanitaryware."

Overall, this extensive renovation project took almost three years to complete, with delays predominantly caused by the basement excavation. "Building a new house would have been significantly easier," says Nishant. "We stayed living in our old house during the build, and got married, then went on to have our two sons. By the time the work was completed there were four of us moving in!"

Noah is now five, Isaac is four, and the house has adapted well to a young family. "People are genuinely surprised when they first visit because it's so traditional outside, but inside it's white and contemporary," says Nishant. "Living in a house designed specifically for us, with such bright interiors, has made a huge difference to our lives, and we appreciate being here every day." ■



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Functional flooring

Darren Trivett of Ridgespear Group offers insights into why developments in underfloor heating make it a practical option, and gives some installation tips



The commonest forms of underfloor heating (UFH) involve circulating water through a high-performance plastic pipe, set within the structure of the floor. This water can be heated efficiently by a conventional gas or oil boiler or by solar thermal panels, or it can be heated (or cooled) very efficiently using a heat pump.

If you circulate cold water through an underfloor heating system during the summer, you can create a comfort-cooling system. A heat pump can use electricity three to four times more efficiently than electric underfloor heating, and electric underfloor heating can never provide cooling.

UFH has become the preferred form of heating throughout the residential sector – from top-end through self-build to local authority and housing associations. It is also now commonly specified for schools and medical facilities, for offices, factories, boats and even zoos.

There are three ways in which heat can be transferred into a room – conduction, convection and radiation. UFH mostly uses radiation which is the most natural and comfortable form of heating (think of sunbathing) – we like radiant energy.

UFH is safe because there are no hot surfaces, it is unobtrusive, more hygienic and more energy-efficient.

Radiators, by comparison, mostly use convection to heat a room. They heat the air, which becomes buoyant. This rises to the ceiling and travels across the ceiling to the far side of the room. As it cools, the heated air drops and returns across the floor to the radiators to be reheated. This convection cycle, as we call it, inevitably puts the hottest air in the room at ceiling level and the floor is always the coldest part of the room. With UFH, the temperature in the room is very even and the floor is the warmest part.

With UFH, the floor surface is made about as warm as the palm of your hand (25 - 27°C). The right form of UFH can achieve this surface temperature using water which is much cooler than even over-sized radiators require. If your heating system can be effective while using cooler water, then not only is this more energy-efficient but it also opens up the prospect of being able to obtain this lower temperature water from renewable energy sources. UFH has the potential to wean buildings off their dependency on continued availability/affordability of fossil fuels.

Most UFH suppliers ought to be able to supply an effective form of UFH when it is set within a screeded or concrete floor. It is just a case of installing the correct amount of plastic heating pipe over the top of the insulation before the screed or concrete is laid, and then making sure the screed/concrete fully wraps around the pipe. If you pin the pipe directly to the top of the insulation, it can be damaged when the screed is moved across the top in barrows and the pipe can often be kicked loose when

UFH has the potential to wean buildings off their dependency on continued availability and affordability of fossil fuels



liquid screeds are laid over the top.

Fixing clip-plates across the top of the insulation and then plugging the pipe into these protects the pipe and holds it securely in place while the screed or concrete is laid.

Many buildings in this country are now constructed with timber floors. There are some flooring companies and even some

underfloor heating suppliers who say that underfloor heating should not be used in a timber floor because timber is a poor thermal conductor.

This is because they have either not used the correct form of underfloor heating in the past or simply because they don't have it in their product portfolio. The truth is that the correct

The Supreme loft ladder



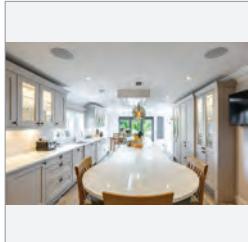
The 'Supreme' from **Premier Loft Ladders** sets the standard for loft ladders, combining heavy-duty performance with light-weight operation. It features a high-strength retractable ladder, suitable for ceilings as high as 4.6m. Furthermore, it offers superb thermal insulation and an airtight seal, therefore helping to maintain warmth in the home and reduce energy costs.

The sophisticated counter-balance system makes using the Supreme very easy.

However, it is also available with fully-automatic electrical operation for ultimate convenience. Visit Premier Loft Ladders web site to learn more about the Supreme loft ladder.

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Königstone goes to great lengths



One of the most sought-after kitchen features is an island and if the space is available, there is no reason why the whole length of the kitchen can't be used. Pictured is the stunning Ontario worktop by **Königstone** in a stable block conversion.

The impressive kitchen island is over four metres in length, allowing plenty of room for preparing, cooking, serving and eating food. The Ontario worktop is a stunning marble effect quartz with delicate light brown veining, in 30mm thickness with a double bevel edge profile. The Ontario colour is offered as part of Königstone's KönigQuartz range which means the surface is incredibly strong; it has high heat-, stain, and scratch-resistance.

info@konigstone.co.uk

form of underfloor heating can be very effective and the best way of looking after a timber floor throughout its lifetime, if you do it right.

Recent changes to SAP have had the effect of giving a building a better energy rating if it has UFH in a timber floor than if it has UFH in screed/concrete. The improvement in SAP is sufficient that, if a house has timber UFH which is powered using a ground-source heat pump, a house which would otherwise be rated Level C could instead have the potential to be rated Level B. The most important reason for this is because timber floor constructions have lower thermal mass than screed/concrete and this enables timber UFH to change heating power output more quickly and with a smaller injection of thermal energy.

However it is important to make sure you choose the right underfloor heating system for timber floors. Not all systems work in the same way some require very high water temperatures to be effective. So it is important to ask the supplier for independent heat output test data to make sure it will provide enough heat, especially when using a heat pump.

Darren Trivett is CEO of Ridgespear Group

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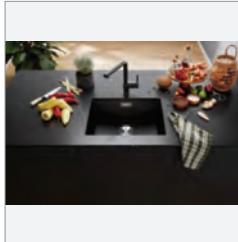


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CASE STUDY

THE GREAT BUNGALOW RESCUE

Years of wet and windy winters in rural Shropshire had brought the 1960s bungalow on Bob Griffiths' farm to the point of near collapse, but he decided to give it a new lease of life

TEXT ROSEANNE FIELD







Tucked down a country lane in rural Shropshire is Houlston Manor, a dairy farm owned by Bob Griffiths. One of a number of buildings on the land is a bungalow Bob's late father had built by a local builder in 1966. It had stood there ever since without incident, until several grim winters eventually took their toll. "Quite suddenly, it started to get subsidence cracking all around the property," Bob explains to *Selfbuilder + Homemaker*.

After his father passed away he decided to let out the bungalow, but points out the irony of his reaction when asked if he wanted to add subsidence insurance. "I thought 'it's been there 60 years, it's not going to fall down now!'" he jokes.

The bungalow, which is home to Bob's farm manager Neil, sits on sand, and a firm commissioned to do some experimental digging found the ground was essentially washing away underneath the slab the building sits on. "We had been having wetter winters," explains Bob, adding that because in the 1960s Building Regs weren't in place, the foundations it sat on were "pretty minimal." It is also west facing, so subject to prevailing winds and generally quite exposed to the elements. "When there was driving rain, it would actually come through the brick walls," Bob says.

He considered demolishing completely and building anew, but decided instead to conserve the asset he had. "It's a nice property; space is not an issue of course because it was built on farmland so it's spacious and its outlook is



BOB TO THE RESCUE

The building suddenly began to have subsidence cracking, but Bob decided to save it from demolition

LOW POINT

"Definitely discovering that the building was actually falling down. I was not expecting that!"

HIGH POINT

"Completion! The fact that it all went well, there weren't any hiccups – everybody talked to everybody. The suppliers were supportive."

He was also able to claim back VAT, despite the fact it was a renovation

good," says Bob. "It was cheaper to spend some money on it rather than knocking it down and starting again." He was also still able to claim back VAT, despite the fact it was a renovation, because being home to the farm manager, it's classed as a business asset.

The bungalow – which sits approximately 100 metres from the main farmhouse – had been extended in the 1970s, so as well as underpinning it to solve the subsidence issue, he also took the opportunity to replace the flat roof

on the extension with a pitched roof, as well as adding external wall insulation, and new render. "I wanted to make it good for the next generation really," Bob says.

Bob commissioned an architect, Trevor Stevens, and engineer Andrew Owen to design the underpinning, to ensure it was a "proper job." The architect also assisted with the aesthetics of the new pitched roof on the extension, drawing up different slope variants. "I didn't stick entirely to the architect's plans," Bob admits, crediting his "wonderful" builders E W Kinsey & Sons for picking up issues "which perhaps hadn't been considered," he says. "That's one of the benefits of having trustworthy builders, otherwise I would have had to get the architect back in and new drawings done."

SECOND TIME ROUND

This wasn't Bob's first experience tackling a project of this kind. The main farmhouse underwent a similar refurbishment five years ago. "That was a mishmash of styles," he explains. "It's old at its core, around 1600s, but it was all mixed up – some of it was brick, some of it was sandstone. I insulated and rendered it so that now the two houses match."

Bob's involvement in the farmhouse project proved useful when it came to tackling this one. "I knew what I was doing, I knew what to expect from it," he says. "It was very much repeating what I'd already done." He was also able to use the experience to tweak the process to be more efficient. During the farmhouse renovation, he had used several different contractors on different jobs, such as the plastering and rendering. "It got a little bit complicated, so I simplified it this time by having one contractor," he explains.

The same contractor helped with the farmhouse so deciding to use them on the new project was an easy choice. "They're so proactive at solving problems," he says. They also project managed the renovation, although Bob was also onsite every day, "mostly because I'm spending a lot of money and I want to know where it's going!" he laughs.

GOING GREEN

Bob is passionate about energy efficiency and sustainability, and has ambitions to one day be entirely self-sufficient. The farm already has solar PV and a wind turbine, and he has looked into installing batteries. The site both generates and uses a lot of electricity, "but we tend to generate it when we're not using it and use it when we're not generating it," he says. However, he believes the way the national grid currently regulates the equation around battery generation isn't helpful enough to support the investment. "They do the calculations based on the assumption the turbine is going flat out, the sun is beaming down on the solar panels, and the battery is fully charged," Bob explains. "You can fix that with software, but they don't currently accept that solution. But I'm not alone in wanting to use it, so it will happen!"

Despite this hitch, it's this passion for

sustainability that has led to Bob specifying a range of eco solutions on the refurbishment. The bungalow (like the farmhouse before it) has wood fibre insulation and the exterior is finished with a two-coat lime render, both supplied by Lime Green Products. Wood fibre was "very attractive," he says, as it locks in carbon, as well as offering better breathability than some other insulation materials. He adds: "My experience has led me to believe that breathability in buildings is really important."

As well as the breathability aspect, Bob was also impressed by the fire protection qualities ascribed to wood fibre. "I've seen video trials where it just kind of chars," he says. "That was significant." The lime render also comes with a lower carbon cost in terms of its manufacture: "It's cooked at a much lower temperature than cementitious products," he says.

Bob took a few further steps to improve energy efficiency on both the house and bungalow. "I don't have chimneys anymore, and I have draught-proof windows," he explains. He went for "good quality" timber windows – on aesthetics and efficiency grounds. "I didn't spend lots of money however," he says, "they're perhaps not as efficient as we could have had."

The bungalow's oil-fired boiler remains in place, with Bob deciding not to replace it as it isn't very old. However Neil, who now lives in the bungalow again with his partner, says they are spending less on fuelling it now the building is more efficiently insulated. When the boiler does eventually need replacing, Bob wants to install either a ground or air source heat pump.

Neil moved out of the property while the work was taking place, but helped out, keeping an eye on the project's progress. He also helped get rid of the large amount of soil that was excavated, plus some rubble. Bob is thankful for his help: "He was very helpful, and didn't seem to mind too much being thrown out of his house!" This cooperation was assisted by the fact he now has a property that is cheaper to run.

ONE SMALL HICCU

Bob counts himself lucky they encountered no major problems or delays during the build. The only small hiccup came when they discovered the existing downpipes weren't adequately taking water from the roof. "We did quite a big job of getting roof water well away from the property – which was an extra cost. That might have been another cause of the subsidence."

They had set six months aside to complete the work, renting a property in the nearby village for Neil. "In five and a half months, he was back in," says Bob. "It worked exactly how we wanted it to." He credits this in part due to the fact they started work in March so the majority of it took place in the summer months.

The installation of the external wall insulation was, says Bob, "very straightforward actually." It's mechanically fixed to the outside of the external wall, with a "base rail" fitted around the bottom in order to prevent it from getting wet. "We had to lower the exterior ground level a bit

CONTACTS/ SUPPLIERS

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Architecture
01584 875836

MAIN CONTRACTOR

E W Kinsey & Sons
www.ewkinsey.co.uk

STRUCTURAL ENGINEER

Andrew R Owen
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BOB'S ADVICE

"Planning really is the main recommendation. Really plan it in great detail – architects will do and see things you won't, and you'll get a decent set of drawings to work from which can make the costings much more accurate. You definitely need a builder you can trust. And ideally speak to someone who's done it before, not just a materials supplier or building contractor. Either of those should be able to point you in the direction of someone that's done it before – speak to them."



because you want the insulation coming down below the DPC so the floor keeps warm, but you don't want it so low as to allow ground moisture to get in," he explains. "Keeping it dry is an important factor. You have to do it properly."

He decided to go with the naturally-coloured lime render option, as well as on the farmhouse, meaning they are both now an off-white shade. Bob comments: "The rendering is a totally specific skill, but they did a good job. It's all worked very well."

The only problem they've had with the exterior look, as demonstrated in particular by the farmhouse, which had its new render several years back, is the mess left by nesting birds. "When it was brick it didn't really matter, but there is staining," he says. "It's lost its pristine look in five years, but I'm not too fussed, and in fact there are breathable paints available so it can be redecorated. It's just something to be aware of."

Internally, little really changed on the bungalow. Two internal walls showed signs of possible movement so these were underpinned, but the layout remained the same. The three bedrooms include a "very big" master, and there's a large entrance hall, kitchen, sitting room and dining room, as well as a family bathroom and additional separate toilet. "It's a nice property and of course we had to redecorate it," explains Bob. "But there were no other changes."

A JOB WELL DONE

Overall, Bob is thrilled with the end result on both buildings. "It really works, I've got no doubts about that," he says. Although both the insulation and windows were done at the same

time, making it difficult to know specifically which has contributed more to the property's improved efficiency, he's confident the insulation system works well, stating he would definitely use it again.

Bob says the cost came in "within my expectation. I had a number in my head." He had agreed a price for the job with the contractor, and says there were only one or two extra costs, such as the clean water drainage. "That's an advantage of using a main contractor and having architects' drawings to work from."

When contemplating whether he'd do anything similar in the future, Bob says: "It wasn't without its stresses and I was working full time at the time, but it all went very well." At the moment he currently has no plans, or indeed any need to tackle another project – "I haven't got any more houses!" he jokes – but he certainly wouldn't rule it out entirely. "I like a bit of a project!" ■



NEW Axiom® by Formica Group Collection

The new Axiom® by Formica Group collection is better than ever.

Relaunched with 50 designer worktops and 18 feature splashbacks, its distinctive designs will prove a hit for years to come. Catch up with Nina Bailey, UK Design Manager, Formica Group on the story behind some of the leading designs in the new collection.

The new-look Axiom® worktop collection combines high performance, durability and striking design. After an extensive research and development process, Formica Group have refined the range to produce a selection of premium kitchen worktops offering unforgettable and distinctive styles that are perfectly suited to modern-day living.

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Axiom® worktops lean heavily on a natural world influence, with the stunning woods collection expertly curated to provide options for both bright and dark palettes. When it

comes to getting the authentic look, there's only one place to start.

"The rustic featured woods set this range apart," says Nina. "Their intricate knot details, saw-cut marks and even burn effects really bring the wood to life and add more style to the grains. Fresco Oak, Beached Wood, Ravine Wood and Charred Timber all show these unique details."

She adds: "We also know blocked woods are still incredibly popular. We wanted to develop some more neutral colourways. We've got two new oaks, the Danish Block and the British Block. They're butcher-block style, slightly greyed off and very authentic-looking woods that can be used in contemporary or traditional settings."

STUNNING STONES

Two new stones have been added to the contemporary stones selection, bringing cool, natural drama into the heart of your home.

"Sierra Carnico is a beautiful and



subtle veined marble," says Nina, "while Kirkby Slate moves away from jet black slate into a dark grey hue. It also has a simpler structure, making it more contemporary and modern."

"Nero Marquina is a really large scale, dramatic marble into our classic stone collection. In this monochromatic palette, it shows how to be bold and striking."

COOL CONCRETE

Elsewhere, a new concrete section offers a modern and urban option to those looking for an industrial finish.

Nina says: "Elemental Corten has a slightly orange tone and links closely with an oxidised copper effect. We've also got Elemental Concrete, which is a more traditional concrete colour with cloudy grey hues running through it. This is what I'd describe as a hybrid product. It can look like a concrete, a metal or a plaster. It's an all-rounder that will adapt to how you want it to work."

SPECIAL SPLASHBACKS

Finally, 13 new feature splashbacks in vibrant on-trend and tonal decors give you the opportunity to create an eye-catching finish.

Nina says: "We've got a variety of colours. In terms of the blues, greens and warm tones, they're all slightly more muted. The blues are dark jewel and deeper midnight tones. The greens are there because people are seeing the advantage of having green in the home and how that links to nature so perfectly. And then we have the warm colours of the Henna and Blush, which are really fashionable hues. We see them becoming a lot more popular in the near future."

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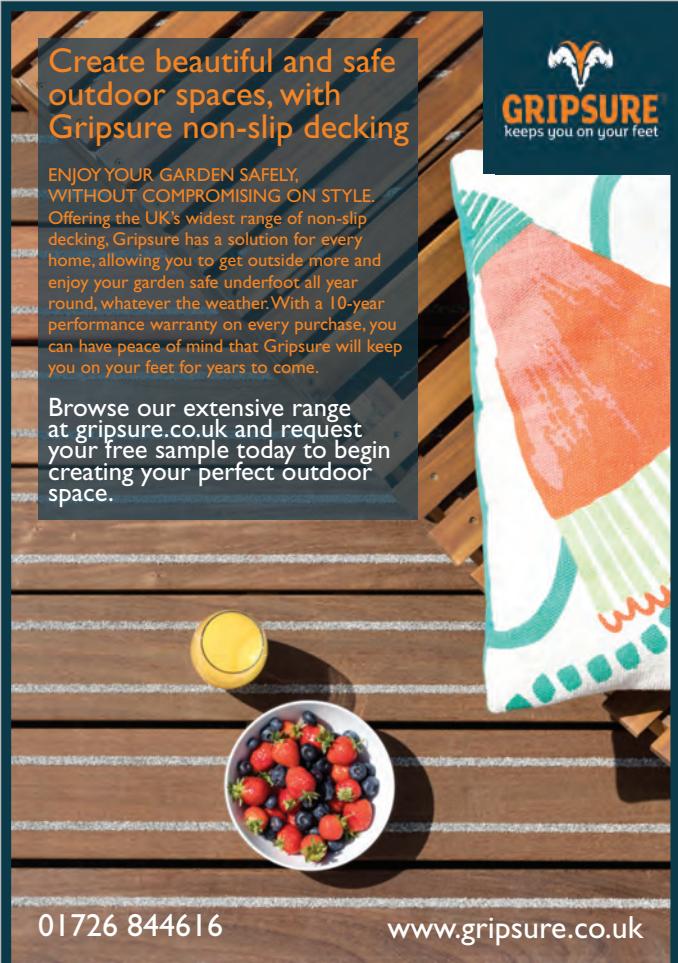
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Timber or composite?

Deciding on the best decking option for your garden makeover can be challenging. Tony Hobbs of Southern Sheeting offers some advice to help you choose

The trend for durable and premium wood plastic composite (WPC) decking is now firmly established in the UK, and continues to gather momentum. It has also been a big hit in markets such as the USA and Germany.

In the US alone, the market for WPC products is forecast to rise 3.7 per cent per year to \$4.9bn in 2024, according to a new study by Freedonia Group. The demand for these products in the UK looks poised for further growth, as awareness about the material's benefits builds.

WPC decking looks very like timber, it's resistant to issues such as warping and rot, and many brands come with a 20-year guarantee, so it's surprisingly cost effective thanks to its long-lasting qualities.

Timber of course remains a popular choice, and the debate has always centred on whether to keep costs down with a softwood option, or to push the boat out and plump for longer lasting hard wood. But now WPC, with its designer friendly aesthetic, is making it a force to be reckoned with. Due to technological advances, high-end composite decks look stunning, and stay that way with very little maintenance.

Traditionalists enjoy the look of real timber, which can be revarnished or repainted for a change of style and this look is often better suited to older homes.

However, composite decking maintains its good looks for longer and with less effort. It is also less slippery when wet, making it a safer option for children and elderly people. It is more weather resistant than timber, and comes in a greater range of colours. Often it looks so much like real wood, it's hard to spot the difference. It is perfect for a contemporary and luxury garden, with consumers seeing it as increasingly desirable because of its durability.

WPC is also designed to be splinter-proof, which means it will retain the same look for many years, while splinters naturally occur in traditional timber



decking. This also makes it safer for children and pets. In addition, using WPC removes the need to fill in gaps from splintering or knots in the wood. It will reduce the cost of decking repair following adverse winter weather conditions.

THE PRACTICAL COST

Price is always going to be a factor in any decision about garden decking and it's true that timber decking is usually cheaper to lay initially, especially if softwood is used. But it's important to consider that it will need far more maintenance. Timber decking requires annual treatments of sealant, stain or varnish to keep it weather-resistant, plus treatments to prevent mould and rot. Composite decking just requires hosing down once a year to remove any build-up of dirt and algae. Over time, composite decking becomes a more cost-effective choice.

Depending on the type of wood used for a timber decking area, it will have an average lifespan of between 10 to 15

With its low maintenance and durability, composite decking could be exactly the modern aesthetic you've been looking for

years. A composite deck can often last twice as long. Some brands are even guaranteed for an astonishing 25 years in residential settings.

Composite decking can be laid in the same way as a timber deck – any self-



builder with basic carpentry skills can lay it. But it's advised to check the manufacturer's website or ask an expert for specific details on what gaps to leave for thermal expansion and contraction. There can be variations in guidance depending on the product used.

LONG-TERM GOOD LOOKS

Once laid, composite boards do not require staining or painting. They are also fade, stain, mould and scratch resistant, meaning they will stay looking good for far longer. Another feature of composite decking is that it is customisable. It can be laid in different patterns and

configurations – and different colours can be used in the design.

For instance, using a perimeter board in a contrasting colour to 'picture frame' the deck is easily achieved and creates an attractive aesthetic. To create the same effect with a timber deck, it would be necessary to buy two lots of paint and go through the process of painting them.

Composite decking comes in a range of natural colours, with some mimicking premium materials such as redwood. These variants are also highly UV resistant, and pre-coloured, removing the need to paint or stain the decking which is certainly a major selling point

for composite materials.

SUSTAINABILITY

Timber decking sourced from sustainable forests clearly has strong eco credentials. However, some composite decking can be equally green.

Some composite decking brands, which are made of a mixture of plastic and wood, also have sustainable credentials. There are some on the market made of 95 per cent recycled materials – including thousands of recycled plastic bags and wood fibre, resulting in certification from the Forestry Stewardship Council. It's also worth considering that composite materials will not require chemicals or detergents to clean them or to protect them from rotting once laid. Simply hosing them down once a year is all that's needed.

If your garden makeover would suit a sleek and contemporary finish, then composite decking with its low maintenance and durable qualities, could be exactly the modern aesthetic you've been looking for. What's more as it's one of the latest trends, there's a good chance you'll be able to be a trendsetter for your friends and neighbours!

Tony Hobbs is managing director of Southern Sheetings



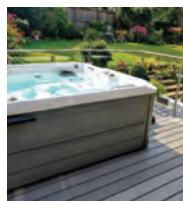
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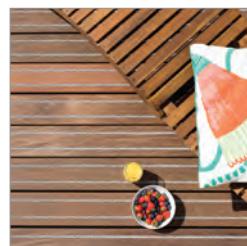


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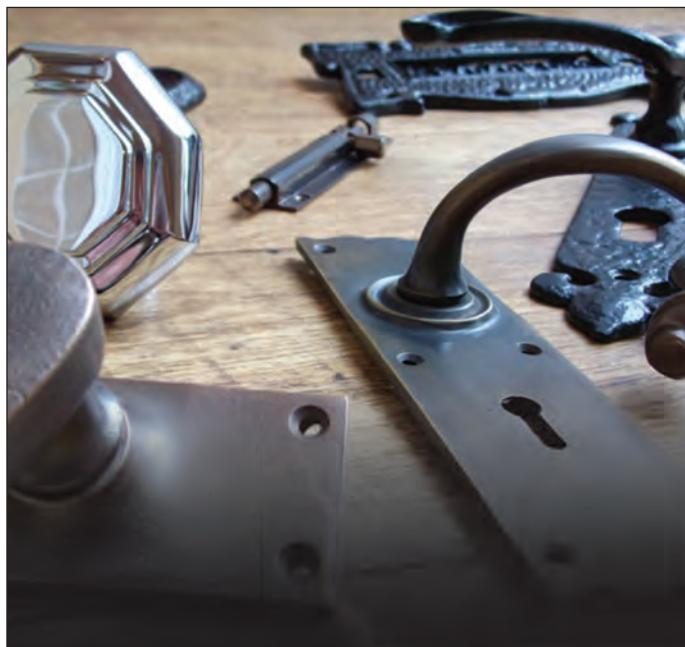
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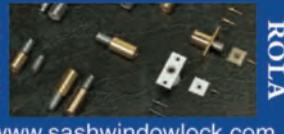
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