

Build It Complete Guide to Self Build

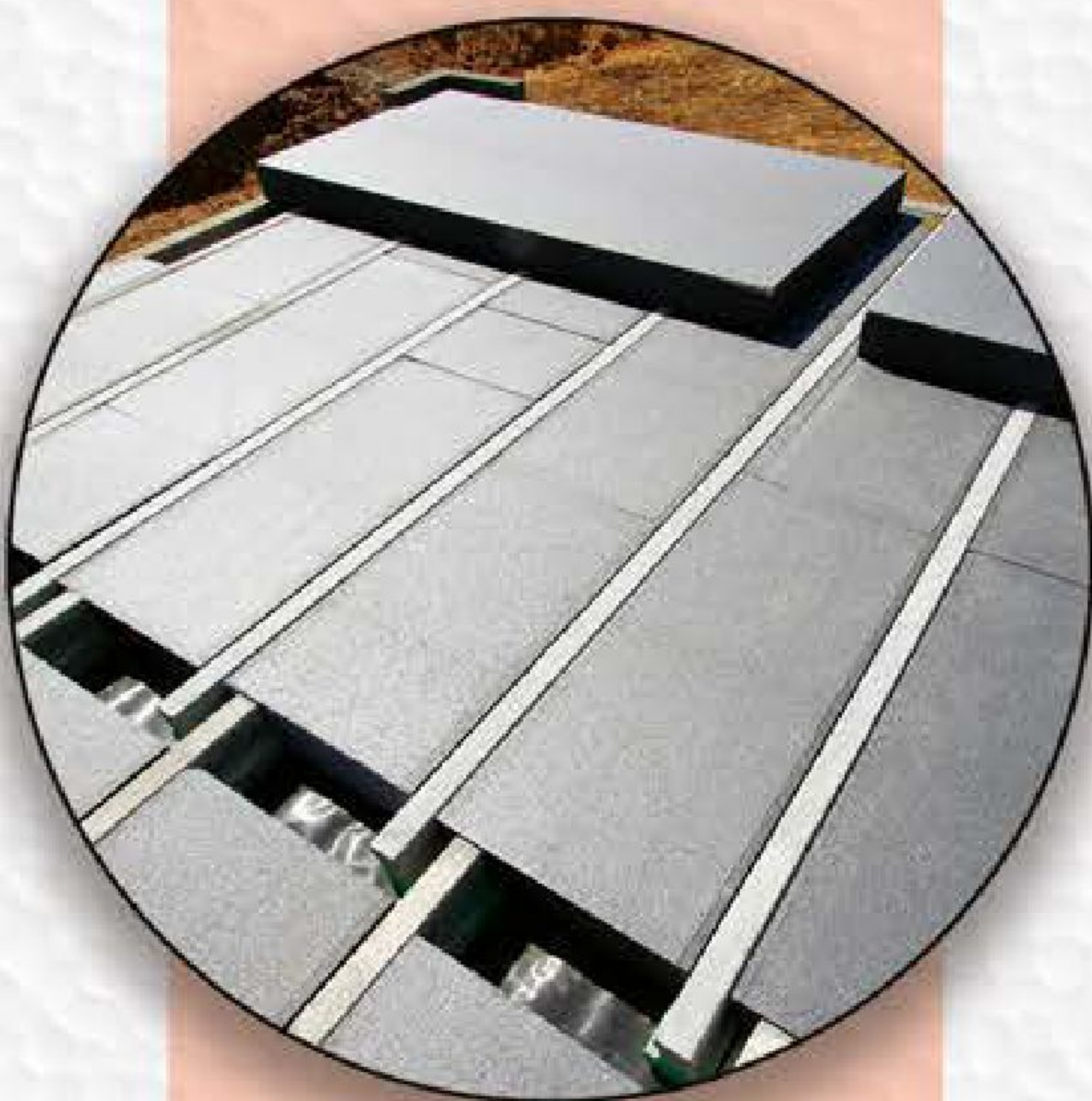
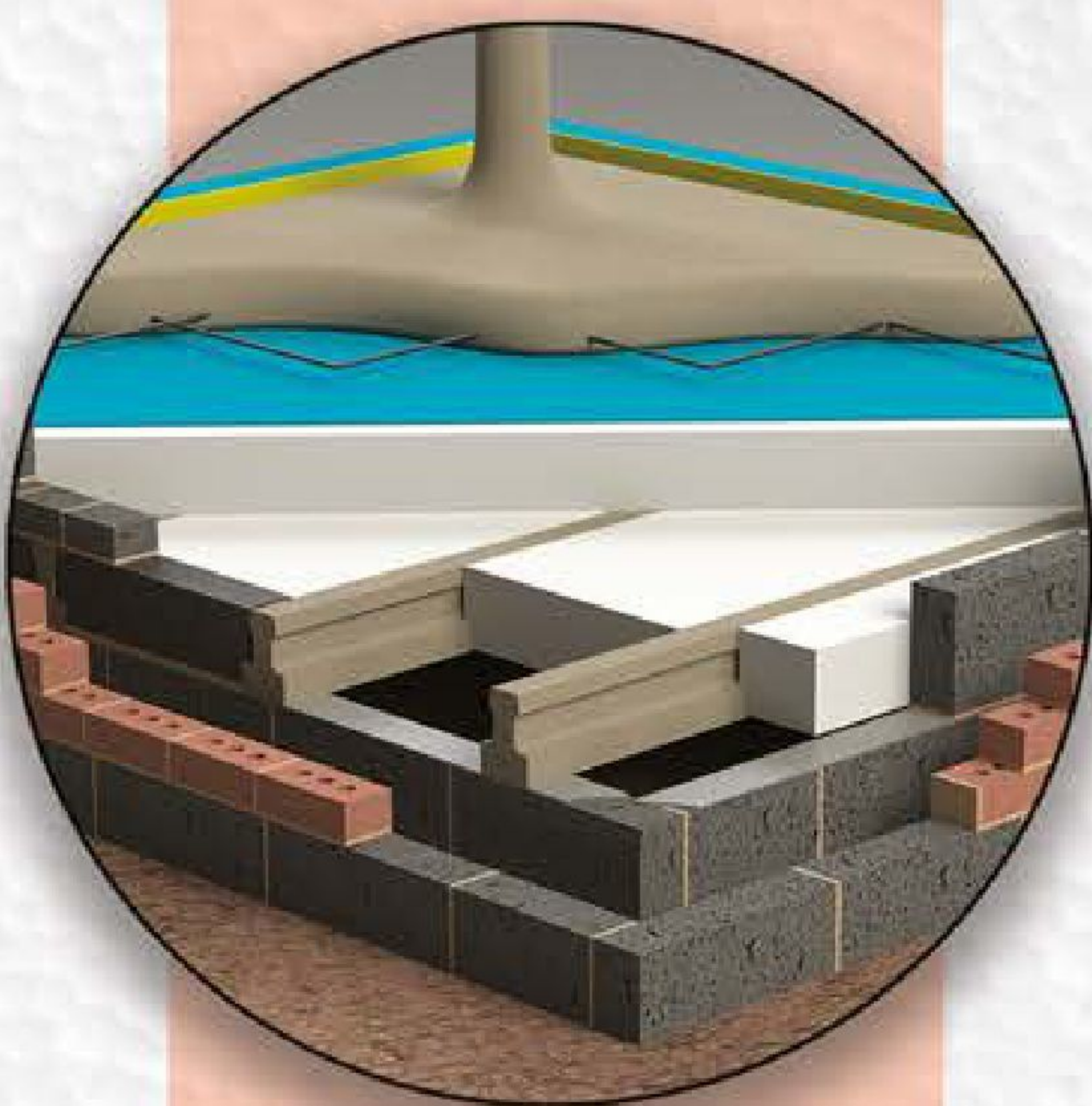


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Build It

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Self build a better lifestyle

Creating a bespoke home from scratch can have a whole host of positive effects that enhance your day-to-day life



Above: Package home specialist Baufritz (www.baufritz.com) takes an active approach to creating healthy premanufactured buildings by using natural products and non-chemically treated building materials

Whether you're thinking about downsizing for retirement, keen to create a larger home that's bespoke to your family's needs or looking for an affordable way to get a foot on the property ladder – whatever motivation you have for tackling a self build, doing so could enhance your life in ways that you haven't even contemplated. So before we get stuck in the nitty gritty details of how to go about planning and building a new dwelling, here are some of the ways a bespoke home project could improve your everyday life.

1 Create a tailored layout

One of the key advantages of building a new property from scratch is that you have the opportunity to produce a home that's totally in tune with your needs and the way you would like to interact with your living environment. Whether that means an open-plan family space with a large kitchen where you can keep an eye on the kids while you cook, or a luxurious master suite with its

own walk-in wardrobe – you can make sure you have the right amount of room where you want it.

When devising your floorplan, a good starting point is to think about how you interact with your current home and if the relationship could be improved. You'll probably want to keep some of the same furniture, especially any family heirlooms (which can sometimes be unusual shapes), so remember to cater for these when you're planning.

2 Enjoy light-filled living

There's heaps of research out there proving the benefits of regularly coming into contact with natural light. From improving your sleep quality through to the positive effects on mental function and mood thanks to increased levels of serotonin, daylight is arguably the most precious commodity you can have in your home.

Carefully plan window positions by focusing on how the sun moves across your plot so your floorplan works in accordance with which rooms you'll want daylight in at different times of the day. For instance, you could wake up in the morning with natural illumination streaming into your bedroom and come home after work to relax in a lounge that captures the last of the evening sun.

Although the sun's pattern is predictable, you will experience different results across the various seasons, so make sure that the design caters for year-round daylight. You'll also need to note if the landscape around your plot, such as trees and other buildings, could obscure sunrays. Many architects and designers can produce a computer model of your home design to show how daylight will fall across a building throughout the year, influencing layout and the overall orientation.

3 Reduce energy bills

If you're designing a space that helps to capture daylight, then you'll be able to use natural warmth to your advantage, too. A term you'll come across a lot on this subject is solar gain. Basically, well-considered positioning of both your building and its windows will help you to gain free heating from the sun. But be careful to ensure spaces don't overheat; design in shading for intense summer sun via precautions such as overhangs.

Capturing this warmth will help to lower bills, but reducing energy use is about much more than getting the glazing right. A fabric first approach will create a highly insulated and airtight modern home, which means the building should leak out minimal heat and won't cost the earth to run.

Heavyweight construction methods, such as masonry cavity walls, benefit from thermal

mass, so they'll soak up warmth during the day and release it slowly later on to provide even heating patterns. But thermal mass can also be incorporated into lighter-weight systems like timber frame – brick cladding, concrete floors and masonry chimney stacks could all help with this.

If you're keen to create a low-energy home, look into building to Passivhaus standards. This design methodology aims to reduce the energy need for space heating, while ensuring rooms maintain good air quality and comfort levels.

4 Soak up the surroundings

There's another benefit to having ample glazing – the potential to frame panoramic views and create a better connection with your garden. In fact, having regular contact with nature is another commodity that is known to be good for us, generally increasing health and happiness, so it's worth thinking of ways to bring the outdoors in.

Glazed doors connecting living spaces and gardens are a popular feature that work well to blur the boundaries between inside and outside. Think about what style will work best for you. For

5 Create a healthy environment

Self building also gives you the chance to control the products and finishes that go into your home. Many people make specification decisions aimed at boosting overall wellbeing. A key area is bad indoor air quality, which is linked to a range of health problems, from asthma and eczema through to cancer and heart disease. You'd be surprised at how many nasty fumes can come out of building materials and finishes.

There are two prongs to this: if you're creating an airtight building, you need to factor in a fresh airflow without compromising energy efficiency (usually achieved with mechanical ventilation and heat recovery systems). But you can also look to specify products that protect the health of your household. VOCs (volatile organic compounds) are found in many products and are a key culprit for off-gassing toxins over a long period of time – not just when that new paint smell is there, for instance. Healthy options include natural solutions like sheep's wool insulation and plant-based paints. You can even get special plasterboards that absorb and neutralise harmful compounds.



Below: This new timber frame home by Scandia-Hus (www.scandia-hus.co.uk) includes expansive glazing at the back to create a strong connection with its surroundings

instance, sliding doors have thinner frames when closed, meaning they offer a clearer view out in comparison to bifolds; however, the latter type are able to concertina as they open to give you maximum access to the outdoors.

A design option that could make the most of views and daylight is an upside-down floorplan, where zones that you're going to be in during daylight hours – such as kitchens and living rooms – are positioned on the upper storeys. Those spaces that don't need sunlight (ie bedrooms and bathrooms) are then set on the ground floor.

6 Guaranteed peace & quiet

Want to make sure that busy adjacent road doesn't keep you up at night? Or that your teenager's drumkit practise doesn't disturb their younger sibling's bedtime? This is where efficient soundproofing comes in and, thankfully, creating your own home means you can ensure quiet rooms by building in good acoustic performance.

Beam and block floors offer a solid barrier against noise transfer between storeys. If you aren't building with masonry then you can upgrade timber floor structures with specialist

acoustic products, such as British Gypsum's Silent Additional Ceiling (www.roomsmadeforyou.co.uk). You can also look at fitting ceilings and internal partition walls with a double skin of plasterboard.

Also think about internal layout and design – open-plan living spaces and hard floor surfaces could both potentially create more noise than other options. Remember that soft materials are

incorporating fully glazed walls and frameless corners means you take something functional and turn it into an out-of-the-ordinary feature.

There's a host of ways to bring standout details into your new home – statement cladding, clever lighting, double-height spaces, cantilevered levels, grand front doors... the potential is endless! Look at other projects and chat to the professionals about what's possible for your budget.



Above: This three-storey self build home features a wow factor large window at the front, which fills the entrance hallway and staircase with natural light



better at absorbing sound waves and you could go as far as integrating acoustic absorption panels into walls to reduce the risk of echoes.

7 Get the quality you want

Whether you're creating your bespoke property design in collaboration with an architect, house designer or specialist building firm, you'll be deciding exactly what goes into your new home. From the construction method through to internal finishes, each individual feature of the house will have a role to play in forming the final result. And a huge boon for self build is that you'll have the freedom to carefully consider your available budget and what elements you think are worth putting extra into. For instance, if you're really keen to keep energy bills down then investing in super high spec insulation and triple glazing could be worth it. But if you're more focused on saving cash for a swanky kitchen for all the hosting you love to do, then you might need to think about what could be cut back elsewhere in the design.

8 Wow factor at an affordable price

Being in control of your future home and the money available means you have the opportunity to create some truly breathtaking results that you're unlikely to find in a developer house. Windows are an essential component, but

9 Reduce clutter

A big problem with mass-produced housing is the lack of storage, as developers squeeze as many rooms into as small a space as possible. It's easy to underestimate how many possessions you need to store away, so think carefully about how much room you need – is yours the kind of household that has a full garage, for instance? Planning your storage right from the initial design stages will ensure you have enough to tuck clutter out of

sight. Built-in solutions can extend the full height of walls, which is a great way to create a focal feature and maximise available space.

You'll also be able to think about where sockets should be positioned early on to ensure you don't have cables running the span of rooms, so it's worth thinking where your TV, freestanding lights etc will be positioned when creating the floorplan.

10 Future proof

It's inevitable that every household's needs change as time goes on. So if you're planning to live in your new self build home for decades to come, the layout needs lots of flexibility built-in to ensure that it can evolve with you.

For instance, a downstairs WC, cloakroom and large study next to each other could be transformed into a wetroom and bedroom if stairs become an issue in the future. Wider than standard doors will allow for wheelchair movement and perhaps what could be a cupboard for now is correctly positioned to cater for a lift at a later date, with the floor joists above pre-trimmed already just in case. You could go as far as putting services in place for a future extension or creating an attic space that's ready to convert later on for more rooms – these things mean your home will definitely be able to adapt with you and enable you to get the most value out of your project.

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ALFREDO HAEBERLI, DESIGNER



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...TO DISCUSS YOUR PROJECT WITH OUR TEAM

The show centre is open 6 days a week (Monday – Saturday). Every weekday one of our self-build experts is available to discuss your project whatever stage of the journey you're at. You don't need to arrange a time to visit the show centre but you can **book an appointment to meet an expert through our website**. The team have a lot of experience between them and if they don't have the answers you need they'll be able to point you in the direction of someone that does.



...TO EXPLORE OUR FIVE, FINISHED & FURNISHED SHOW HOMES

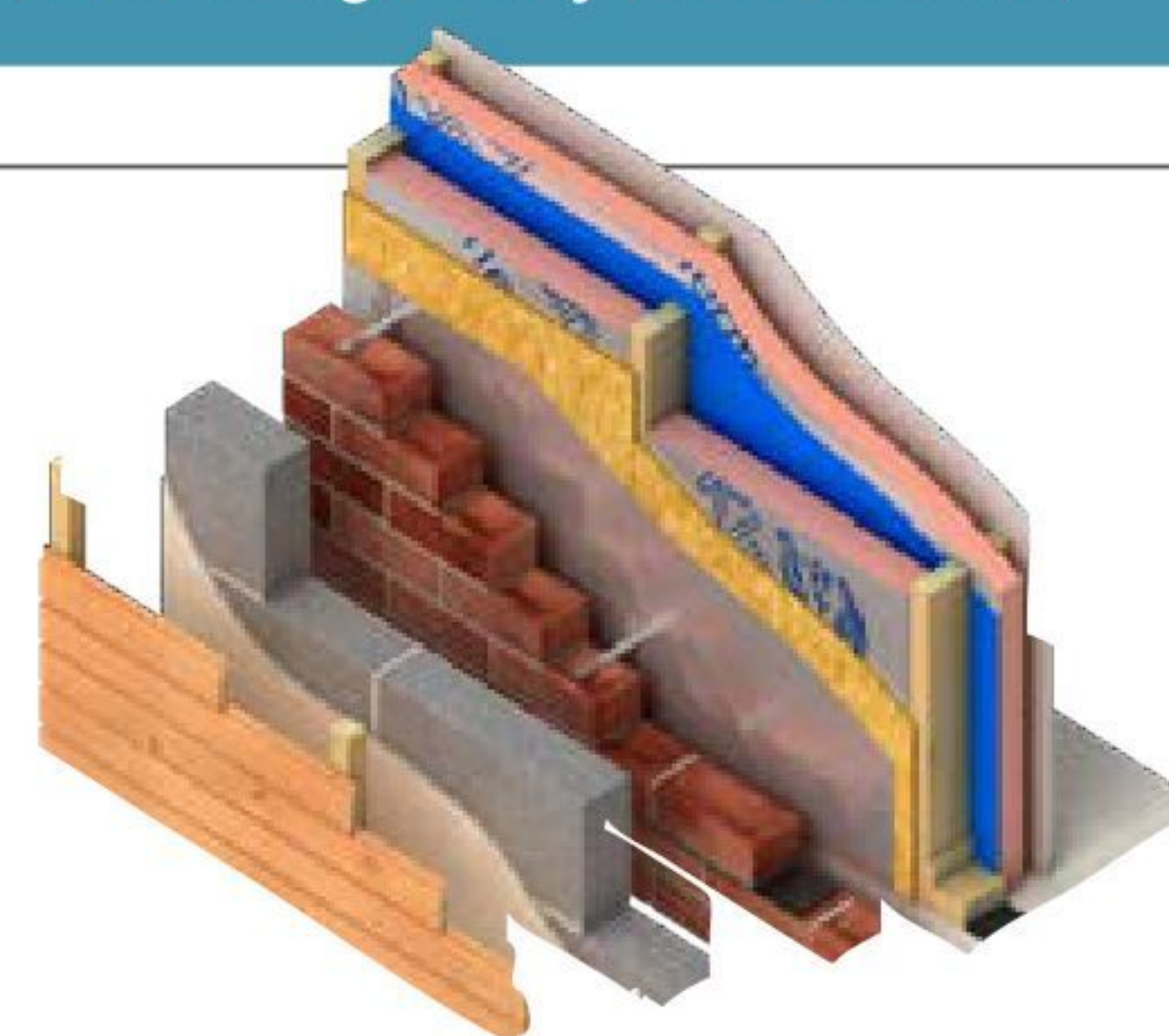
Everyone loves a show home but don't visit us just to see the houses. Use them as a tool to help you think about how you want to live in your new home, how you want the rooms to flow into each other and how big you want individual spaces to be. It's also a good place to work out how you want to decorate your new home and explore kitchen and bathroom design options. Each of our show homes offers something different and the stunning Milchester, the largest home on our site, was completely remodelled and refurbished last year. Our show centre guide will help you move around the site, give room and plot dimensions and provides advice on how to budget for your new build.



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...TO ATTEND AN EVENT OR COURSE

The show centre is also home to the Self Build Academy. Almost everything the academy does is free of charge and there is a range of courses and seminars to support you right from the very beginning of your journey. **Book your place on our website: www.potton.co.uk**

Budgets & finance

Whether you're planning an affordable or luxury home, you'll need to ensure you have enough cash available and keep on top of what you're spending – here's what you need to know



One of the first things you need to do on a self build is establish exactly how much money you can access to fund your scheme. Until you know what you've got to play with, the rest is academic. This figure will dictate the size and quality of the house, who designs it, how it's put together, who builds it and who manages the project. A typical budget will comprise of any equity you have in existing property, your savings and how much you can raise by way of a mortgage.

Build cost basics

A common question to our magazine experts at the Build It Live shows is "how much does it cost to self build a new house?" Unfortunately, this is almost impossible to answer with any accuracy – it's akin to being asked "what does it cost to buy a new car?" The reason for this is that the variables are similar. You can buy a basic motor for under £8,000 but it won't be much to write home about. Similarly, you can build a small house using budget

materials for under £1,000 per m² but you're not likely to see Kevin McCloud knocking on the door any time soon. It is a fact that if you want all the bells and whistles on either, it's going to cost considerably more to buy or build. So you need to decide which parts of your project are essential and which elements are nice to have.

The cost of constructing your new home will also increase in proportion to the amount of risk that you are happy to pass on to others. For this reason, the cheapest route is to do as much of the work yourself as you possibly can. However, only 7% of projects are completed in the literal sense of self build – largely because most of us don't have the time or the skills to undertake things on a truly do-it-yourself basis.

The next rung in terms of cost would be to manage the project yourself, hiring the individual trades and sourcing the materials as required. Employing a general builder to do the work and run things on your behalf would represent another

Above: Careful planning and detailed design are key if you want to bring your self build in on budget

Right & below: In 2017, Susanna Geoghegan self built a traditional style chalet bungalow to Passivhaus standards using timber frame. She project managed the scheme, which came in at £453,000 (£2,254 per m²)



ALISTAIR NICHOLLS



step up. There are regional variations you'll need to account for, too – the south-east of England is notoriously expensive, for instance. There are more stockbrokers than there are builders around this part of the country, a supply-and-demand issue that often drives the prices up.

The other key factor to consider is quality. Using basic materials and fitting bog-standard kitchens and bathrooms will help to keep costs down, but

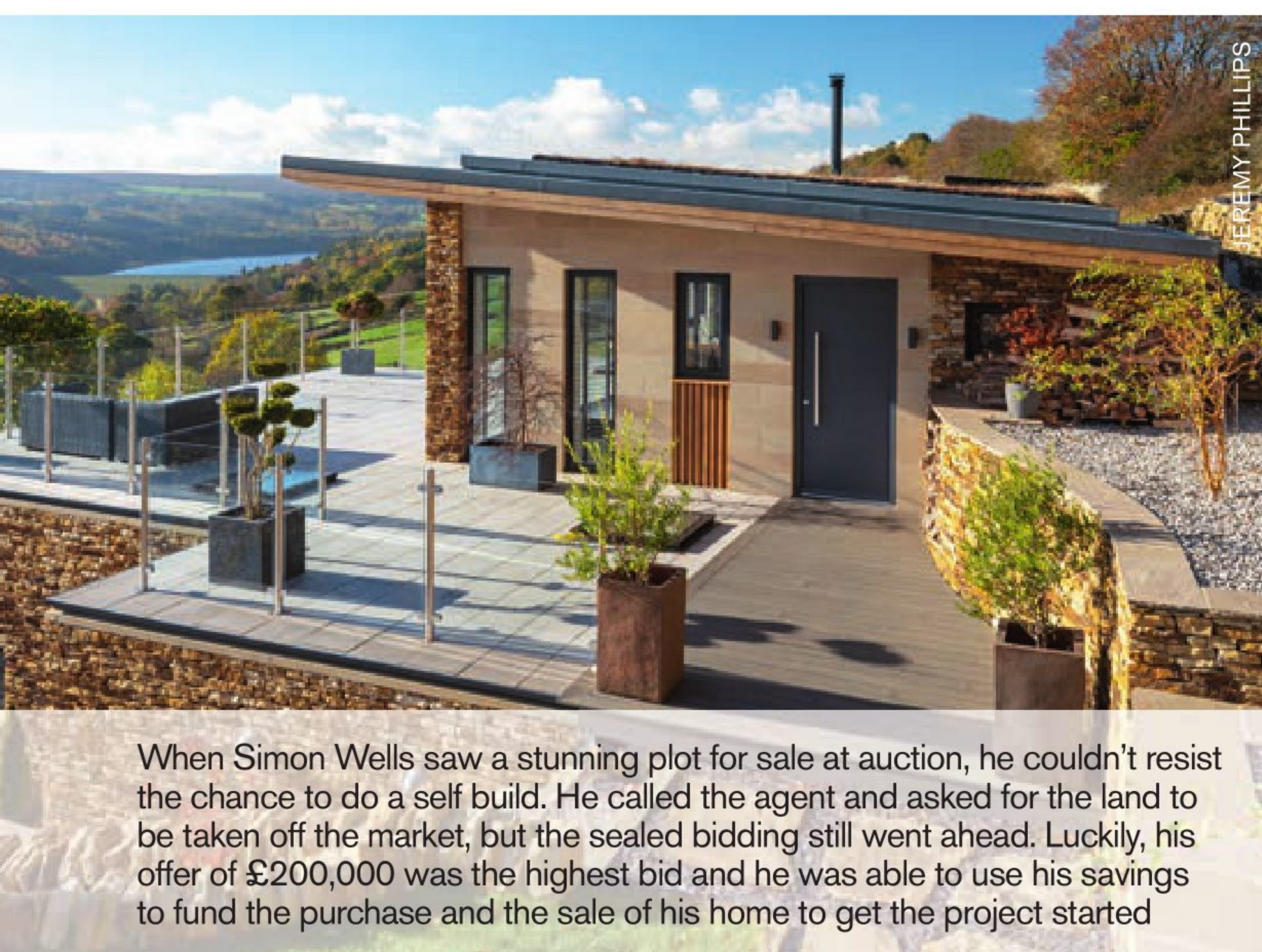
the result probably won't be very inspiring. Most self builders are looking for something a bit better in terms of size and fit-out than what's on offer from the mass-market developers – so they're keen to upgrade materials and finishes. However, caution is needed, because falling in love with a particular piece of expensive designer hardware can add thousands to your budget and will subsequently require you to make compromises elsewhere to make up for the overspend.

Self build mortgages

While some people are lucky enough to be able to fund a project without borrowing, for most of us, organising a suitable mortgage is a must when it comes to building a new house from scratch. But the high street banks don't tend to be set up to match the unique requirements of a live build that's changing in value as it gets constructed.

When you start exploring the market for suitable finance, you'll quickly realise there are two basic types of mortgage for self builders: those that lend you money in arrears (ie after works have progressed on site); and those that give you it upfront and ahead of the works being started. Both will almost always lend in stages as the project unfolds and both are typically capped at a maximum contribution of around 70%-85% of the predicted end value of the project, otherwise known as the loan-to-value (LTV) ratio.

With an arrears mortgage, when you reach one of your predetermined key stages for a payment release (such as the completion of the roof structure and covering) you make your request to your lender to access the respective tranche of funds. The lender then sends out a valuer, who



JEREMY PHILLIPS

When Simon Wells saw a stunning plot for sale at auction, he couldn't resist the chance to do a self build. He called the agent and asked for the land to be taken off the market, but the sealed bidding still went ahead. Luckily, his offer of £200,000 was the highest bid and he was able to use his savings to fund the purchase and the sale of his home to get the project started

determines how much additional value there now is on site, against which the lender can make suitable payment. If the difference between the new value and the last one is, say, £40,000, then at an LTV of 80%, your stage payment release could be as much as £32,000.

With the advance stage payment mortgage, which was invented by BuildStore (www.buildstore.co.uk), your cash flow needs are interrogated in detail before the project even starts. This way, the right amount of money can be made available to meet your payment commitments as the work progresses. The project is properly costed, the release stages calculated, your borrowing facility assessed against the cash you have available and a detailed cash flow statement is prepared.

Why is this important? Well, payments to suppliers and contractors may be due ahead of the incremental increases in building value. So if your agreement pays out in arrears, you'd need to foot the bill out of your own cash reserves and wait for the lender to replenish your funds. The advance stage payment route removes this issue for the self builder – instead, the lender takes on a funding gap (the level of exposure it temporarily takes on until the project is complete). This gap is secured by an insurance bond, so you'll pay a one-off indemnity fee for this kind of mortgage.

VAT & self build

Did you know that, when you self build your own home from scratch, you don't have to pay VAT? The labour on your project is essentially zero rated and you'll be able to claim back the VAT on the materials you buy once the property is completed. However, there are some misconceptions about this tax break, so you need to be clear from the start of the project about what is and isn't covered.

To qualify for a VAT reclaim, the new house needs to be your principle private residence, meaning you can't get VAT back if you're going to sell the dwelling or use it for a business purpose, such as letting it out or running a bed and breakfast. You can also only apply for items that are fixed into the building – that means things like kitchen appliances, carpets and built-in speakers don't count.

Be aware that you only get one chance to submit your VAT reclaim, so it's vital to keep an organised record of your spending from the very beginning of the project. Keep original documents with the supplier's VAT registration number, plus the quantity, description and price of each item. Note that invoices over £100 must show your name and address. Once you get your completion certificate, you only have three months to submit your claim to HMRC.

Arrears mortgages are more straightforward from the lender's perspective, so there are more options available in this category, although the range of both arrears and advance solutions is growing. Advance stage lending is provided by a panel of building societies – such as 2018 Build

Below:
This home by Border Oak (www.borderoak.com) features a hybrid construction of oak and softwood framing, taking advantage of the natural abilities of both. The 162m² project was completed for £230,000 (£1,420 per m²)



It Award winner, Newcastle Building Society (www.newcastle.co.uk) – coordinated and managed through Buildstore Mortgage Services.

Maximising your budget

Most of us will be frantically trying to eke every last penny from a modest budget to achieve the best value for money, regardless of the size of our projects. Your attitude to finance and how you spend your cash is a personal choice, of course. But if you succumb to a moment of weakness where heart overrules head and make an expensive impulse buy, it can have a significant impact further down the line. Something else may have to give and if the money gets tight, then it's inevitable your stress levels will go up accordingly.

Shopping around to knock a few pennies off the cost of a bag of screws or a quid off a sheet of plasterboard might make you feel good, but in the grand scheme of things it saves very little money and will eventually wear you out. By comparison, negotiating a decent price on big-ticket items such as bricks, tiles, windows and stairs can potentially save £1,000s on your total spending.

Usually, the biggest single expenditure on a self build project is the plot, so it's worth haggling on price. Some of you may have the good fortune to already own or have access to land through family or perhaps an inheritance, but for most people the site represents anywhere between a third and half of the total cost of creating a new home. The lesson here is to bargain hard and exploit any potential negative issues on the site as leverage to get a reduction in the price.

Remember that complexity adds cost – the most affordable property to build is a square box

with a two-sided roof. Adding gables, dormers, balconies, curves and structural glass will only increase costs, so if you want to squeeze out every penny and maximise space, it's best to keep the design as simple as you can. The same is true when it comes to getting bespoke products – going off-the-shelf will prove a safe bet and means the supplier will be geared up to manufacture the item using existing tooling and labour.

Shop around for builders' quotes and don't settle on the cheapest one. The important thing is to take references to check the competence of the builder and to look at previous jobs to make sure they are up to standard. It's also critical that you ensure all of the work required has been allowed for in the quote supplied.

The more of the project you can successfully deliver yourself, the more money you'll be able to save – but remember to be sensible about it. Clearly, if you don't possess the skills and competency to do a particular job to the standard required, it's invariably going to be a better move to pay for someone else to do it properly. This also rings true when it comes to design. Using the professional skills of a fully-qualified designer might be the best way to get the most out of your budget. Their experience and know-how can introduce all sorts of clever ideas to achieve the desired outcome without breaking the bank.

Below & right: When Donald MacKinnon and his wife Sarah self built a SIPs home on the remote Isle of Skye in 2017 they chose a full turnkey service from Heb Homes (www.hebrideanhomes.com)



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Beginner's guide to finding land

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



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

LAND FINDING ROUTES

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

Use your contacts Don't underestimate the power of networking. Tell your friends and co-workers that you are looking for a plot. They may have heard of someone selling in your preferred area, for instance, or even have a large garden they'd be willing to split at the right price. Using social media can be a big benefit here, as it can spread the word even more quickly.

Explore the area Walk around the locale to identify land between houses, garden plots or disused garages – which could all offer potential build opportunities. If you spot a site that you think has scope to be developed, then approach the owner and let them know you are interested. If they're difficult to track down and you can't find out via the Land Registry, speak to the neighbour.

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

Speak to business owners Local farmers, breweries, universities and other organisations

may have surplus land they want to sell (or would consider selling). Many do so via estate agents, but there's no harm approaching them directly.

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

Further reading

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

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

Use plot finding databases BuildStore's Plotsearch (www.plotsearch.co.uk) lists thousands of sites with planning consent across the UK. It's also free to use. As well as giving you the chance to find a suitable plot, this resource will help you to get a good feel for land prices and availability in different areas. You can also see which estate agents are active in your region, so you can make a list of them to go and visit.

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

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

Further reading
www.self-build.co.uk/auctions

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

TYPES OF BUILDING PLOT

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

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

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

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

Gardens Contrary to 'backland development' and 'garden-grabbing' headlines, planners still pass garden schemes – especially in places considered to be built-up. You may even be lucky enough to have a large space that could work as a viable site already; or know a friend willing to provide one.

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

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

Further reading
www.self-build.co.uk/serviced_plots

WHAT MAKES A GOOD PLOT?

Picture the perfect piece of land and it will probably be in a pleasant area, affordable,



Left: This brownfield infill plot features three lock-up garages, set between a pair of semi-detached houses. It comes with outline planning for a new house and could be an excellent opportunity – provided the right design can be achieved and a site contamination investigation doesn't reveal any major hidden costs

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

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

Basic potential

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

In terms of site suitability, you need to check for issues that could increase construction costs (which should be factored into any offer), make it difficult to get the right kind of design for your household, or affect the viability of a project. Some of the most notorious budget-busters include steep slopes, difficult access to services

(electricity, gas, water etc) or obstacles such as trees, existing structures and overhead cables. But these issues may not be insurmountable, and with good design some can even be turned to your advantage. A sloping plot is likely to offer great views and the potential for a basement, for instance, and you won't face much competition from the large scale developers.

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

Detailed assessment

If early-stage investigations seem positive, you can move on to a more in-depth appraisal of exactly how suitable the site is in terms of planning potential and build costs. This will take in things like access, trees, ground conditions, drainage and legal considerations. Build It's invaluable resource at www.self-build.co.uk/plot-checklist can help structure this part of the process. If you come up against anything you're not sure about, seek advice from suitable professionals. That might mean speaking to your council about planning matters or engaging a solicitor on the legals.

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

Need to know: plot buyer's checklist

Before you secure your purchase, make sure the plot you're looking at ticks off some of the boxes on our quick-fire plot buyer's essential checklist. You can find the full version online on the Build It magazine website at www.self-build.co.uk/plot-checklist

Am I ready to act quickly? It's important to have your funds and/or borrowing lined up and legal representation ready to go so that your offer looks enticing to the vendor (if you're buying at auction, this is essential).

Is planning permission in place? The outline or full consent shouldn't be about to expire, as this could put your dream home project in jeopardy. Any conditions attached to the permission must be acceptable to you.

Are there any fees? Double check whether you will be liable for a Section 106 charge or any other financial contributions to the council as a condition of the planning

permission. These could increase your project costs markedly, and may need to be accounted for in your offer.

Am I getting all the land? Ensure the plot area that's for sale is exactly the same as that indicated on the current planning permission – otherwise you could run into trouble with ransom strips and other issues.

Can I change the consent? The majority of self builders will want to tweak the design to some degree, so think about whether you want to revise the existing planning permission. If you do, then consider whether making these amendments is going to be a realistic option.

Are there any other obstacles? Check whether the plot has a right of access to the public highway and ascertain if any legal issues, such as restrictive covenants (binding conditions written into a property's deeds), might bring extra costs or prevent you from building.

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New routes to self build

Take a closer look at how the custom build approach can deliver the right site and the right support to help you make a success of your project

Traditionally, if you wanted to create your own house, you first needed to find a good plot of land, commission a bespoke design, work out how to get services to the site, seek planning permission and secure Building Regulations approval. Getting to this stage involves a lot of time, effort and expenditure – and that's before you've even brought in the builders and trades to do the actual construction work.

It's all worth it, of course: get it right and you'll end up with a high-quality bespoke home that's perfectly in tune with your lifestyle and represents excellent value for money. But wouldn't it be great if the process was a little easier to manage? Well, the good news is that in recent years a number of new routes have opened up that are taking some of the complexity out of the process, providing a more hands-off route to finding a viable plot and creating a tailor-made house.

The government refers to these approaches collectively as 'custom build'. The term emphasises that what you're getting is choice, control and quality, but without some of the stresses of a traditional self build. There's a range of options – but we can group them into two main offerings: blank enabled plots with planning and utilities in place; and schemes where you buy the land and some or all of the structural works in one package.

These opportunities might be delivered on sites of just a handful of houses, or big developments offering hundreds of bespoke homes. What they all have in common is that some of the hard work will be carried out by an experienced provider. Ultimately, the goal is to make self and custom build the new normal when it comes to buying a property. So how does it work?

Serviced plots

Under this model, the landowner, council or developer takes care of some of the trickiest parts of the process – usually securing planning



permission across several plots and putting the core infrastructure in place. The key advantage of this route is that it gives you a lot of flexibility, but removes a big chunk of the hassle: you know you're looking at a viable opportunity that will be relatively straightforward to develop.

As the name suggests, there will be an enabling party that coordinates the provision of services to your site. In many cases, electricity, gas, water, drainage, broadband and telephone are all brought right up to the plot boundary. They'll usually also sort out access to the main highway. Arranging these elements can be a time-consuming and expensive process for individual self builders, so this approach cuts out a lot of stress and gives you much greater cost certainty.

While serviced plots are sold with some form of planning permission in place, in many cases you'll have just as much control over the design as you would with a conventional self build. You can even apply for a new planning consent if the current proposal doesn't quite fit your requirements.

On some sites there will be a design code, while on others customisation might be limited to specifying the internal layout, fit-out and finishes.

There are a number of variations to this model. For example, at the UK's largest custom home development, Graven Hill in Bicester, self build sites are offered on a golden brick basis. This means you get all the benefits of a serviced plot, plus the enabling developer completes the foundations according to your approved

Top right: The Graven Hill development in Bicester offers a range of custom build opportunities, including these contemporary semi-detached homes. For more about the plot types available at Graven Hill, go to page 38



architectural plans – which means it takes even more of the risk out of your hands.

Plot & build packages

With this route, you marry up the benefits of a serviced plot approach with even more follow-on services from the enabling developer. Typically, when you buy the site you'll also be signing up to commission at least the design (possibly with a partner architect) and weathertight shell of your home from the developer attached to the scheme.

This gives you a neat, cost-certain bundle for the hardest parts of your project. Should you wish, you can then appoint your own contractors to complete the rest of the work – although full build options are often available, too. This turnkey approach means you simply agree the specification and price, and let the specialists coordinate delivery of your home for you.

Many serviced plot purchases involve an appointed partner for the design and core construction works. That's partly because the landowner needs support to get to this stage. Think about it this way: if you're stressed at the thought of arranging the planning and infrastructure for a single home building project, imagine what it would be like on a development of five, 10 or 500 houses. By partnering with specialists, the landowner can offer buyers a smooth design and build journey, as well as gaining access to experienced help in setting up and marketing their site.

A number of package home companies are involved in enabling this kind of development, including the likes of Border Oak, Potton and Oakwrights, who typically focus on modest sites of around five to 20 detached houses. Usually, there will be a design code to follow, covering details such as where on the plot you can build, permissible ridge heights, external materials palettes etc – but within those parameters, you will retain full control over the design and specification of your new home.

If you want to go hands-off and simply specify the finishing touches, some specialist custom build developers offer a menu of pre-designed house types for you to customise. When you buy your site, you select your kit-out preferences from a range of defined options, such as wall finishes, internal layouts and interior surfaces. So while you don't get the full design control you might enjoy with a traditional self build, there's still much more flexibility than would be possible to achieve if buying a home on a standard development.

In many cases, a range of opportunities is available across a custom build site. Certain plots might offer more design freedom than others, for instance, while some may be sold on the basis of greater or lesser amounts of the building works being delivered by the enabling developer.

Below:
DesignYourHome (www.designyourhome.com) is creating 122 bespoke home opportunities at Squirrel Wood in Baskingstoke, with sites offered as serviced self build plots, custom build options with pre-installed floor slabs, or custom choice models where the home is built out to shell stage



Quick guide Self finish homes

This is a popular option for urban developments and schemes involving terraces or apartments, where there's generally less opportunity to personalise the exterior of your house.

The developer might take the project to weathertight shell stage, leaving you to specify and coordinate the rest of the fit-out. Alternatively, you could agree for them to complete more of the works – perhaps right up to applying the plasterboard, so you are left to sort out the second fix elements such as the kitchen, bathrooms, light fittings and complete the decoration to suit your preferences.

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Insurance & structural warranties

Building a home is likely to be the biggest project you ever undertake, so it pays to put the right protection in place

While the vast majority of self build homes are completed without major issue, there's no doubt that undertaking a construction project brings a degree of risk – both financial and in terms of site safety. Normal household insurance won't cover a scheme like this, so here's the basics of how you can protect your investment.

When should I start insuring my project?

As soon as you've bought your plot, you become responsible for it (ie you assume liability for what happens on it). Even if you're not commencing building work straight away, you'll almost certainly still need to arrange cover against the possibility of accidents and other issues occurring on your property. "Derelict structures, ponds, old wells or diseased trees could all present a liability risk if trespassers – particularly children – gain access to your land," says Paul Kempton, managing director at A-rated insurer Self-Build Zone.

You may not need a full site insurance policy at this stage. "Depending on when you start on site, it can initially be cheaper to take out landowner's liability cover," says Paul. Talk to a specialist such as BuildStore (www.buildstore.co.uk), Protek (www.protekselfbuild.co.uk) or Self-Build Zone (www.selfbuildzone.com) to find the right cover.

What about when work gets underway?

As soon as you carry out anything on the plot to enable your project, landowner's liability won't be sufficient – even if you're simply clearing shrubs and trees, or demolishing existing structures.

So before works get underway, you need to arrange full self build site insurance to cover the works, materials and equipment, as well as your liability for anyone involved in the project.

This includes risks such as fire, flood, theft and accidental damage to neighbouring property.

The key elements of a site insurance policy are public liability (protection against claims for damage or injury to members of the public, neighbouring services etc); employer's liability (cover against claims from sub-contractors); and contract works (protection for the materials, equipment etc on site and the house over the course of construction). Look for contractors 'all risk' insurance if you're self-managing the build.

Site insurance is normally available for 12, 18 or 24 months – with options to extend if required.



"It's worth putting a reminder into your calendar in case you've not completed the scheme within the agreed timeframe," says Paul.

What's the difference between insurance and a structural warranty?

These two products are often sold by the same providers, but they're very different. Site insurance covers the land and works before and during your project. Structural warranties kick in after completion, providing a 10-year guarantee against structural defects in the design, workmanship or materials that went into the build – and the cost of remedial work to put any issues right.

The process involves an assessment of your structural drawings and health and safety plans, followed by a series of technical audits on site during the works. Most providers use experts who can also act as approved inspectors under the building control regime. Many self builders choose to appoint them for both elements, which can reduce the number of site visits and potentially offer good value for money.

While a warranty isn't compulsory, it's a sensible investment, giving you peace of mind that your new home is protected in the long term. It's also essential if you want to sell the property within 10 years of completion, as potential buyers won't be able to get a mortgage if there's no warranty.

Above: The Kingston's project could have been derailed when extreme weather caused a collapse just after the first floor joists were installed. Their site insurance policy helped avoid a major budgeting catastrophe. "It took three days to reassemble and I just had to pay the excess," says Mark

Designing a new home

There's lots to consider when coming up with your new self build scheme. Here we're taking a closer look at the elements that could have a significant impact on the finished result

Some self builders have a clear vision of what their dream home looks like, while others feel overwhelmed by the options and therefore unsure where to start with the design. Whatever category you fall into, it's easy to overlook elements that could make a big impact on the finished property. But fear not, as there's always a way to find the perfect design solution and the best professionals out there to guide you in the right direction. Here are some things to consider to get you started.

Understand the plot

If you're taking on a self build project, then you're probably looking to create something special that you wouldn't find in a big housing development. But the right design isn't solely down to your preferences – it's important to also be guided by the site that it's built on. You could just plonk any old house on a patch of land, but paying attention to the unique nature of the site will not only maximise efficiency and aesthetics, but also help to define that individual home you're after.

For instance, if your plot is sloped, you could build into the natural undulation and put living spaces at the top of the house to make the most of views. It's also important to look at how daylight moves across the site and position rooms in places that make sense for the sun's movement – might you want morning light in the bedroom and evening illumination in the lounge, for example?

Design is influenced by budget

While most people realise they need to factor in the cost of the building work, it's easy to forget about the other aspects that need to be accounted for on top of this. Quite a lot of money has to be spent on things that seem minor on their own, but collectively can tot up to thousands of pounds. These include landscaping, finance and insurance costs, professional and local authority fees, site surveys, access from the highway and service connections. How much you need to spend on these will influence what you have left for the design and build.

Lifestyles change

If you're planning to live in your self build home for decades to come the layout needs to have built-in flexibility so it can evolve with you and



Above & right: The McNicols went to Colin Smith + Judith Wilson Architects (www.csjwa.co.uk) to come up with a design for their triangular plot, where privacy was a major consideration. Their 200m² eco home cost £440,000 to build





Individual pieces of timber will have slightly different hues and graining; while some people prefer a uniform finish, others enjoy the character this brings. These Scotlarch boards are from Russwood (www.russwood.com)

your family. Plan for increases in the size of your family, whether that's more children, young adults boomeranging back home after college or older relatives moving in. Consider getting planning approval for an extension to be constructed at a later date; you could put in foundations and capped-off drainage connections ready to be used. Create a loft with a clear space suitable for conversion, perhaps even with a structural opening already in place for a future staircase.

It might be a good idea to future-proof in case family members or friends become infirm



or disabled. Subtle design features can make a big difference, such as keeping doors wider than standard and allowing space for a wheelchair to manoeuvre in a downstairs bathroom. You could even factor in space for a lift to be added later on.

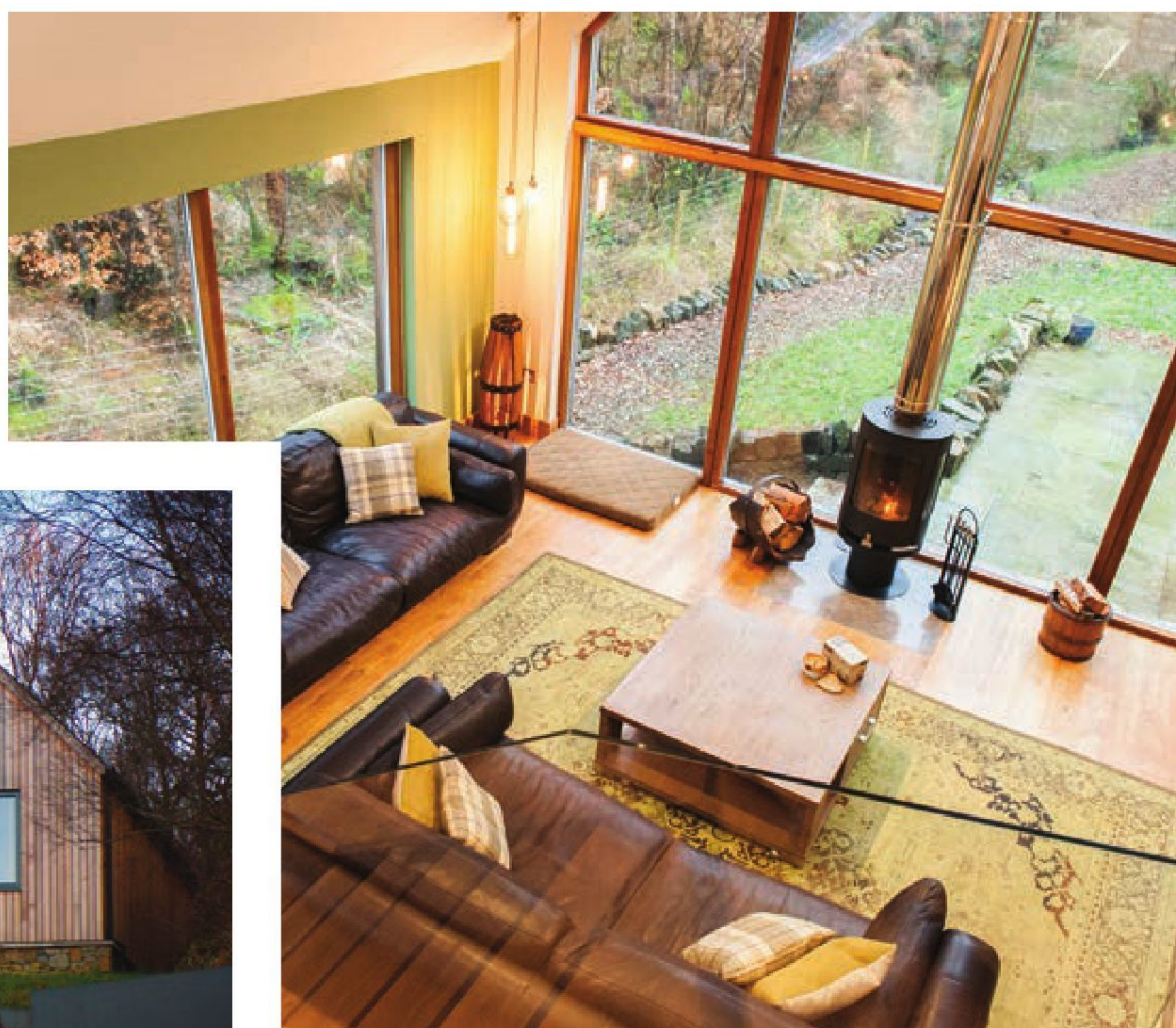
Homes need maintenance

Sooner or later, every element of the construction of a house will need maintenance, which means

How much will an architect cost?

As professionals, architects expect to be paid appropriately for their work. The very best can charge a fortune, and rightly so – some architect-designed properties are more works of art than houses. But most of us just want a nice home that isn't going to break the bank.

After the financial crash, architects had to revisit their pricing because work was scarce; falling back on the old RIBA scale system, which was a licence to print money, made them too expensive. "One self builder I met had paid his architect nearly £40,000 under a RIBA contract but the project had not even gotten underway on site," says Build It magazine expert Mike Hardwick. "To get work, many architects reverted to a fixed fee approach – and this is the model that I would encourage you to use if possible, whoever you engage to create your scheme. A straightforward design for a bespoke four bedroom detached home up to Building Regulations drawings can be achieved for £5,000-£10,000, depending on complexity. Plans for a simple extension to an existing property, matching the current house style, can be produced for as little as £1,500 if you use a local designer."



it's important that predicted upkeep influences how materials and fittings are integrated into the design. Good

roof tiles and bricks will last for many decades without attention, but other materials require work more frequently. For instance, timber fascias and barge boards are popular, but have to be redecorated regularly atop a tall ladder.

An open roof over a stairwell with skylights and a centrepiece chandelier looks dramatic; however, it also presents a challenge for whoever has to change the light bulbs or clean the glass.

Above & left: Joe and Vanessa Blower completed their self build remotely, working alongside architect Nigel Johnston to navigate the complex sloping plot and maximise views. The project cost £467,800 to build, with design fees of £20,000

Self-cleaning glazing and cables that allow the light fitting to be hooked across to the landing will solve these problems but redecoration may require scaffolding and is therefore a specialist job.

Unblocking gutters is another difficult chore, especially for high level valleys positioned between pitched roofs. A lot of effort can be spared by installing roof windows in the attic, which will allow you to reach out safely with a rake.

Nothing is perfect

Many self builders have a natural desire for their house to be as perfect as possible. However, individual people have different interpretations

finish and had forgotten that nature is inherently irregular. It can be easy to lose perspective.

Households can be noisy

Something often overlooked in house plans is the soundscape. Unwanted noise is a common problem, not least because of all the gadgets we have for entertainment. This means it's important for the fabric of your self build home to be robust, well-sealed and as solid as possible. The dwelling's layout can also play a role in reducing disturbance.

Children are a major source of noise, so look to distance their rooms from others, for instance with bathrooms or built-in wardrobes in-between.



Above: Richard and Pamela Pearse have self built a characterful home using an oak frame supplied by Oakwrights (www.oakwrights.co.uk). The company's architectural designer, John Williams, came up with a scheme that took in the couple's wants and needs, along with the characteristics of the plot

of what a high quality finish means, which can be a problem if you're after a really pristine result.

Using natural materials with simple finishes can add interesting features to a building, particularly timber left unpainted on the outside or oiled with a clear finish on the inside. But if you put two pieces of the same wood from the same batch next to each other, they don't usually look identical and will weather differently. It's also worth remembering that architect sketches and illustrations may not communicate the final effect of this divergence.

Build It's design expert, architect Julian Owen, spoke recently about a client who was ready to send back a whole batch of oak skirting because each section had a slightly different shade and grain pattern from the next, rather than the uniform colour he was expecting. He wanted a transparent

Sound travels more easily to rooms below, which means a second floor or attic space is not always a good place for the loudest family members.

With open-plan living becoming commonplace, don't forget to factor in a snug or living room that's isolated from the main areas of activity. This will help to provide an oasis of calm for quieter activities such as reading or homework.

Plan artificial lighting early

Once nighttime has fallen, there are all sorts of possibilities to shape and change the character of your house with carefully considered lights. Plus, a single space may need to be put to many different uses, each enhanced by changing the illumination.

A good example is a kitchen-dining-living room because it's often the hub of the home. It will be

used for breakfast in the morning, cooking and chatting with friends during the day, and later on as a space for homework, a shared family meal or time in front of the TV. There should be different ways of lighting the space to suit each of these activities. When building from scratch, it's very easy to hide cables in the walls and fit programmable lighting controls if organised in advance.

Plan for your furniture

It's rare for house plans to show any more than blank rectangles indicating the location, shape and size of rooms. Sometimes the home's contents are only considered once the property is actually built. More helpful designers will include standard furniture symbols on their drawings, but these are really only diagrammatic and bear little relation to what you own or are looking to buy. The risk of your furniture not actually fitting in with the finished design of the rooms is quite high unless you've considered this from the start, especially if you want large open-plan spaces.

Lots of self builders want to keep family heirlooms, such as a dining table or chest of



COLIN POOLE

Left: Wow factor elements such as chandeliers can look fantastic, but think practically when installing them – for instance, do you want to always get a professional in to change a bulb?

drawers, which must be accommodated. If furniture is an unusual shape or size it can have a major effect on the arrangement of other items and the proportions of the room. Unlike modern furniture, which is designed to be disassembled to get through a standard door opening or up a cramped staircase, period pieces may prove difficult to move around the house.

Who can design my new home?

Architect While anyone can design a house, to be allowed to be known as an architect you must have completed seven years of training and been accepted by the Architect's Registration Board. This professional status pushes up the price of an architect, but it's also the best solution for cutting-edge homes that push design boundaries, get the most out of what your site has to offer and understand how to exploit materials to your advantage. You still need to shop around, though, because not all will specialise in the kind of house you want and some practices understand the constraints on those of us creating a one-off home better than others.

Architectural technologist These professionals apply the science of architecture, specialising in the technological aspects of buildings, including design and construction methods. They work alongside architects, so have an understanding of space, materials and aesthetics. As they're not full-blown architects, they tend to charge less and offer tremendous value-for-money. Check out the Chartered Institute of Architectural Technologists' website to find members working in your area.

Package company The many package house suppliers in the self build market rely on great design to sell their products. The basic idea is they come up with a scheme at little or no cost, using their in-house architects and designers. You then fall in love with the idea and commission them to take the project through planning, Building Regulations and some or all of the construction

works. The catch is that they own the design, so if you want to use it you'll be obliged to sign up to their timber frame or materials package – and that's where they make money. But using a package company is a popular and sensible self build route, especially for first-timers, as you'll have access to their support throughout the project.

Designer Anyone who is not formally qualified falls into this generic category. In effect, anybody can call themselves a designer – so it becomes all the more important to do your homework. The key things to look for are examples of previous work, which must be followed up with client references to prove competency. You should also ensure you see proof of professional indemnity insurance. Costs are relatively easy to control, but don't expect state-of-the-art architecture.

DIY If you have the time and confidence, then you could have a go yourself. Core versions of 3D design software packages such as Sketchup are free to download and, with the help of web tutorials, give everyone the chance to draw up their own scheme. More powerful tools are also available, such as the Build It 3D Design Software (www.self-build.co.uk/3dsoftware). Getting a self-drawn design through planning is not at all uncommon, but the key question is whether the scheme can be built safely and economically to meet the Building Regulations. If you think this is a step too far for you, another approach would be to use the software to mock up ideas that can be used to inform your brief to an architect or house designer.

Beginner's guide to planning success

From getting your head around complex industry terminology to crafting an application that will succeed, we lay out the basics

When you're self building, you'll need to set reasonable expectations of what's going to bring you success in the planning phase of your project. Planning authorisation is always required for a new home, so you'll need enough of an understanding of the planning game to ensure you, or someone acting on your behalf, gets the procedure right. Here, we're taking a look at the factors that'll weigh in on your application, as well as the route you'll be required to follow to obtain the green light from the local authority.

Understanding the jargon

Planning permission, approval and consent are all terms that amount to exactly the same thing. Similarly, certain phrases, like green belt, conservation area (CA), area of outstanding

natural beauty (AONB) and national park all have the same defined meanings, countrywide.

Unfortunately, when it comes to individual councils who administer the planning process, you'll almost certainly encounter a variety of jargon. Policy documents, the naming and wording of texts, the titles of planning staff and also names of departments can all vary greatly. It's also worth bearing in mind that local authorities often cannot resist the temptation to change well-established and understood language on a regular basis – so make sure to check meanings of new terms.

How are applications assessed?

Any decision on a submission is supposed to be made in line with the policies of the Local and/or Neighbourhood Plan (unless so-called material

Right: Designed by Arco2 Architects (www.arco2.co.uk), this house has been constructed so that it has minimal impact on the surrounding landscape. Creating an aesthetic that blends sensitively with the surrounding area is often a key aspect to consider when making a planning application



considerations dictate otherwise). The Local Plan is essentially a document produced by the district and borough council and is supposed to follow government guidance set out in the National Planning Policy Framework (NPPF).

Neighbourhood strategies are drawn up by parish or town councils, or other relevant bodies in the area. These guides establish policies on a very regional basis that are supposed to be broadly consistent with the Local Plan.

Any policy document goes through a lengthy review process that can take a couple of years to complete. At any moment, a council might have an old and rather out-of-date plan, as well as a

as you can get a feel for the local authority's likely reaction to your plans. Taking this additional step can also identify whether supporting statements will be needed alongside your proposal.

For example, an arboricultural report may be required if any trees will be affected by the scheme. In other cases, the council might deem a flood risk assessment to be necessary. Where the pre-app process is expensive or overly slow, going straight to a formal application is a better bet.

Making your application

You can submit your proposal online via the Planning Portal (www.planningportal.co.uk). This



new, emerging one that has not yet been formally adopted. It's always advisable to ring the district authority's planning department to check which strategy is used for decision making purposes.

If you're wondering what 'material considerations' are, in practice, they're pretty much anything the officer dealing with your application considers to be relevant. Note that most submissions are assessed by the authority's planning officials in a process known as a delegated decision. For some contentious projects, the final call is made by the planning committee, which is a group of councillors who debate and vote on the outcome.

Pre-app guidance

Prior to making your official submission, most councils encourage you to seek pre-application advice. The cost of this varies, as does the amount of time involved. However, it's often a good idea

enables you to complete the forms, as well as upload your drawings or supporting reports. The process is reasonably user-friendly, too. You'll have to pay the council's fee – there's a calculator on the website to help you work out what the total should be. Currently it's £462 for a new house.

You'll also need to submit the appropriate Community Infrastructure Levy (CIL) forms. Self builds don't incur this fee, but it's vital that you provide the right forms at the correct time to successfully claim the exemption. Always seek advice if you're in any doubt about this aspect of your planning submission, as fees charged can amount to several tens of thousands of pounds.

Managing the process

When your application is submitted it goes through a validation procedure. Once it's found to be valid, it progresses to a registration process. First

Above left & above: In order to attain planning consent for this modern new home, Clear Architects (www.cleararchitects.co.uk) made sure that the structure sat within the footprint of the barn that originally occupied the site

is consultation, where neighbours, the parish or community council, and various local authority specialists look at and comment on the proposal. Their thoughts channel back to the official who is dealing with your project, known as the case officer.

At some point, this designated person will make a site visit and write up a report with

a recommendation to approve or refuse the application. While it's a good idea to contact this individual during the course of a submission, bear in mind that they can often be difficult to get hold of. Some can be evasive about their thoughts until the 11th hour. A proposal should technically be determined within eight weeks, but decisions can run over this period and the council might ask you for an extension of time.

Understanding your consent or refusal

Planning permission is almost always granted subject to conditions. These can require additional information to be submitted to the council, either before or during the build. Typical stipulations cover elements like materials choice, drainage details and landscaping features. Once granted, planning consent lasts three years. It will be up to you to sort out any pre-commencement conditions and get started with the project within this period. If your application is refused, reasons will be provided that you can (hopefully) address, so you can amend your scheme and resubmit. If there doesn't seem to be any way forward with the council, you have the right to appeal a refusal, taking the decision out of the hands of the local authority. It's always worth taking professional advice before going down this route, as there are potential pitfalls and costs to be considered before you go ahead and take the plunge.

This striking new home sits on a garden plot in Shropshire. Timber cladding was specified to help the house sit sensitively within the rural setting. Base Architecture handled the design and planning phases of the new scheme



When Richard & Madeleine Harman family found this garden plot in Hertfordshire, permission was already in place for a more conventional four-bedroom property, but it wasn't what they had in mind. Richard put together a design for a chalet-style home, keeping the floor area and ridge height the same to ensure a smoother planning process

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How to navigate the Building Regulations

The regs cover everything from structural safety and energy efficiency through to ventilation, security and more. Find out how to navigate the building control process and ensure your project makes the grade

The Building Regulations are the minimum national standards that govern the design and construction of new houses (as well as alterations to virtually any other structure). As a self builder, you'll need to ensure that your project meets the mandatory requirements set out in the regs – in conjunction with your architect, builder and trades. Here's what you need to know about the process.

Building control basics

Overall responsibility for the regs has been devolved to national governments across the UK. The regimes are very similar in England and Wales, where guidance on each technical area can be found in the 16 Approved Documents. Northern Ireland's Technical Booklets are split into 14 areas. In Scotland, where the regs are referred to as Building Standards, there are eight Sections. See the info box (right) for a full breakdown.

The regs are administered by building control bodies. In England and Wales this could be your local authority (LA) or an approved inspector (AI) from the private sector. If you wish to use an AI, you must jointly notify the council of your intention to do so. In Scotland and Northern Ireland, the LA remains the only route to compliance.

Whichever option you choose, as a self builder you will need to seek approval both for the technical design of your home (via a plan check) and for key stages of work on site.

Pre-build approval

As part of the design stage, you'll need to submit a 'full plans' application to building control (which is separate to your application for planning consent).

The full plans process involves engaging a suitable professional (such as your architect or a structural engineer) to compile comprehensive information about how you intend to construct your project, including detailed drawings. This technical package will then be checked against the regulations prior to your project



commencing on site. Your application will need to include the form, payment, drawings and any supporting information required (ie your design SAP assessment, site survey reports, structural engineer's calculations etc).

While it may seem a laborious process, it makes sense for a bespoke home project. Any major issues with the design will be flagged up pre-build, allowing you to provide clarification or make the required revisions. "Problems caught now will always be much easier, and more cost-effective, to solve than those that emerge during the works," says Andy Butchers, director of Build-Zone Survey Services (www.bzss.co.uk). You'll need this level of detail anyway if you're applying for a self build mortgage. Plus, having clear drawings will help trades to quote more accurately and minimise the risk of disputes with contractors.

Assuming everything's in order, you'll get a formal letter confirming that your design meets the requirements. Provided your home is constructed as per the approved technical drawings, you can be confident that it will comply with the regs.

Site inspections

Unless the works are minor and allowable under a Competent Persons scheme, your project will

be subject to inspections at various agreed points, either by your local authority or your appointed AI.

The exact triggers for inspection will depend on your project, but some typical stages include: commencement; excavation; foundations; damp proof course; oversite; foul/surface drainage; floor joists; roof timbers; drains test; and completion.

It's vital that you (or your project manager / builder) notify the inspector when the works are ready for checking. If something gets covered over before it's been examined you may have to open it up again for scrutiny, which is likely to add considerable cost and delay to your scheme.

Compliance for some types of work can be obtained under the Competent Persons scheme. This allows trades to self-certify their output, so it doesn't have to be checked on site by the local authority or an approved inspector. You may, however, still need to notify the LA of the work (just ask them if you're unsure). Examples of where the Competent Persons procedure applies include installations by Gas Safe registered heating engineers, FENSA-vetted window fitters, electricians by Part P certified trades, etc.

Building control costs

Local authorities publish their fee structures online. They can set their own charges according to a government-approved framework. With the full plans route, one part of the cost will be allocated to the design assessment phase (the plan check) and another to the site inspection regime.

Approved inspectors will quote for your project individually, based on factors such as the value of the works, complexity and location. LAs tend to only offer bespoke quotes on high-value schemes.

Completion certificate

Once the project is finished and the works have been signed off, the local authority will issue with a completion certificate within eight weeks. This is an important legal document that shows your project conforms with the current standards. It should be stored safely with the property deeds, as it may be required if you sell the house.

This is also the trigger for self builders to finalise their VAT reclaims, which must be submitted within three months of the completion certificate being issued (see page 11 for more on this).

A completion certificate simply confirms that, as far as can be ascertained from the plan check and inspections, the work done on your project complies with the current regulations. What it won't do is give any kind of guarantee against defects that emerge post-completion. The best

way to protect your new home is to get a 10-year structural warranty in place – and you may wish to use a supplier who can package inspections for this with an AI service (learn more on page 23).

Building Regulations: Technical guidance documents

England & Wales	Scotland	Northern Ireland
Regulation 7 – Materials and workmanship	Section 0 – General	Technical booklet B – Materials & workmanship
Part A – Structural safety	Section 1 – Structure	Technical booklet C – Site preparation and resistance to contaminants / moisture
Part B – Fire safety	Section 2 – Fire	Technical booklet D – Structure
Part C – Site preparation and resistance to contaminants / moisture	Section 3 – Environment	Technical booklet E – Fire safety
Part D – Toxic substances	Section 4 – Safety	Technical booklet F – Conservation of fuel and power
Part E – Resistance to the passage of sound	Section 5 – Noise	Technical booklet G – Resistance to the passage of sound
Part F – Ventilation	Section 6 – Energy	Technical booklet H – Stairs, ramps, guarding and protection from impact
Part G – Sanitation, hot water safety & water efficiency	Section 7 – Sustainability	Technical booklet J – Solid waste in buildings
Part H – Drainage & waste disposal		Technical booklet K – Ventilation
Part J – Heat producing appliances		Technical booklet L – Combustion appliances and fuel storage systems
Part K – Protection from falling (includes glazing safety in England)		Technical booklet N – Drainage
Part L – Conservation of fuel and power		Technical booklet P – Sanitary appliances, unvented hot water systems & reducing risk of scalding
Part M – Access to and use of buildings		Technical booklet R – Access to & use of buildings
Part N – Glazing safety (Wales only)		Technical booklet V – Glazing
Part P – Electrical safety		
Part Q – Security		
Part R – Physical infrastructure for high-speed electronic comms networks		

Create your dream home & join the self build community at Graven Hill

Nestled in the rolling green landscape just south of Bicester, Oxfordshire, an exciting project has been evolving over the last few years as new houses and streets are beginning to come together at Graven Hill. This is an innovative, one-of-a-kind home building project for the UK: a council-enabled development specifically for self and custom builders to create a community of unique individually-designed properties.

The site is a patch of brownfield land spread out over 188 hectares. The first phase of plots were released in the summer of 2016, and up to

1,900 new dwellings are going to be built over the course of 10 years. Community is at the heart of the Graven Hill masterplan, where there will be a primary school, pre-school nursery and community centre, as well as shops, cafes and a local pub.

In this special section of the Complete Guide to Self Build, we'll be exploring the construction options at Graven Hill, unveiling how the process works, plus look at some completed projects and how you can get involved. But before we get stuck into the details, let's look at the ethos behind this innovative scheme and how it could benefit you.





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Simplifying self build

While bespoke home projects have traditionally been isolated to single plots, Graven Hill is giving people the chance to create a unique dwelling next door to lots of like-minded neighbours. Each property is customised to suit the individual needs and tastes of that household. Fundamentally, the main goal behind Graven Hill is to make self building a simpler, more accessible and affordable process – whatever your budget.

Finding a good plot is often the biggest hurdle for any self builder, typically taking at least a year. Once you've got that secured there's still the planning process to navigate and finance to coordinate. A huge benefit to constructing at Graven Hill is that these (often complicated) steps are made simple. Each plot comes with services and is eligible for fast-track planning permission, plus funding options available through the likes of self build mortgage specialist BuildStore.

A choice of easy-to-understand models is in place for people, whether they want to self build a unique property from scratch or customise a pre-approved scheme. Plus, anyone building at Graven Hill will have access to expert advice throughout their project. "We're trying to make self build



Above left & left: Homes are starting to take shape at the innovative Graven Hill development, with many households already moved in

something that all demographics can do, whether you're looking to own your first house or downsize," says Karen Curtin, managing director at Graven Hill. "There's a big choice in terms of plot size and how involved homeowners need to be in the build."

A new community

You might have followed the progress of the first pioneering 10 homes on Grand Designs' latest television show, The Street; but with 85 households moved into their Graven Hill home by March 2019, the village is really beginning to take shape. "Because of the nature of the development, a sense of community started to form quite early," adds Karen. "There are groups set up to encourage you to meet your neighbours and, once on site, people help each other – it's great to see a community coming together."

Sustainability and energy efficiency is at the heart of the masterplan. The stunning rural location will be a key part of Graven Hill. New recreational parks, 22 hectares of grassland, protected trees and 1.9 kilometres of hedgerows are going to be created to enhance the landscape, while providing a healthy environment for homeowners and wildlife. Plus, the village will be surrounded by open, green spaces, including woodland, allotments and a network of cycle and footpaths.



**To find out more
about Graven Hill
log on to [www.
gravenhill.co.uk](http://www.gravenhill.co.uk) or
speak to a member
of the team by calling 01869 396070**

Graven Hill masterplan

Explore the neighbourhoods that are taking shape and how the village will develop

At Graven Hill you'll get much more than you'll find at a standard housing development. It's an opportunity to become part of a community of self and custom builders creating one-off homes that suit their individual needs.

Graven Hill has been designed to offer a wide range of ready-to-go opportunities for new bespoke homes within a well-organised setting full of open green areas and essential amenities, such as shops and social spaces. The masterplan has been divided into 11 Character Areas to give different locations individual identities. From the Community Streets full of detached homes, through to rows of mews-like terraces in the Urban Lanes and homes with field-facing views on the Rural Lanes. There are a variety of plot types available at each location that offer different house design choices for homeowners – for more on these options, see pages 38-41.

Building in phases

With around 1,900 new homes being built, the plan for the site has been organised so that the village can be delivered in phases, with plots being stagger-released over the 10 years of development at Graven Hill. Before plots were available to the public, an initial 10 demonstrator homes were bought by the self builders followed by *Grand Designs* in its latest television series, *The Street*. Following this, Phase 1A and 1B took off, which saw a range of self and custom build plots made available. Many people have now moved in.

With the infrastructure for Phase 1 now delivered, Graven Hill is looking at the masterplan for Phase 2, which will see a new set of plots made available to the public later this year. "The idea is that we release the land in stages to allow people to build homes next to each other at the same sort of time," says Karen. "This approach also ensures that the relevant infrastructure is in place in the right areas at the right time."



PLOT & PROPERTY TYPES

- Self-Build Plot
- Custom Build New Home
- Affordable Home
- Demonstrator Plot
- Show Home



Visiting Graven Hill

The marketing suite is your first port of call for more information about Graven Hill. Based on-site at Chadwick Place, staff are on-hand to provide information about the type of plots or properties available, how the design and planning process works and offer practical support such

as information about finance. You can also have a look around Graven Hill by going on one of the guided tours.

Another great opportunity for more information is the Graven Hill zone at the Build It Live show in Bicester. Visit www.builditlive.co.uk to book your tickets.

PROJECT ROUTES

Self Build Plots at Graven Hill

Create the bespoke home you've always dreamed of hassle-free with a serviced plot at Graven Hill

Below: Build It's Self Build Education House is currently being constructed on a serviced plot at Graven Hill, and once complete will be staffed by the Graven Hill plot sales team

One of the big challenges for many self builders is finding a viable site that's going to be straightforward to develop. The recent phenomenon of enablers such as councils or developers offering serviced plots aims to take the stress out of this process, while giving you maximum control over the design and delivery of your project – and Graven Hill is the UK's most exciting example of this innovative approach.

What is a serviced plot?

These are shovel-ready sites with key utilities provided as part of the sale price. At Graven



Hill, that includes electricity, gas, water, high-speed broadband and drainage. Arranging these as a single self builder can be a real headache, both in terms of how long it takes to organise them and accurately costing the infrastructure (so you can factor it into the plot value). But it's all taken care of at Graven Hill.

What's more, when you purchase a serviced Self Build Plot, the Graven Hill team will assess ground conditions on the site and price up the foundations and below-ground drainage to suit your house



What's in a Plot Passport?

- A summary of the main features of this Self Build Plot (see the image, left).
- A plan and key to assist your designer with initial sketch proposals.
- Details of the range of external finishes and roofing options available in the plot's character area (if applicable).
- Information on performance and sustainability requirements at Graven Hill.
- Guidance on the expected ground conditions.
- Details of the services provided to the site.
- The main features of the structural warranty.
- Information on what should be included in the drawing submission.

design and layout. You'll then agree a fixed fee for Graven Hill to construct these elements, so there are no nasty surprises at this notoriously risky stage of a traditional building project. This is known as a Golden Brick approach.

Graven Hill publishes a regularly-updated Golden Brick Fact Sheet, which spells out how the process works. This document also shares indicative prices of what other self builders have paid for the foundations on their projects to give you even more oversight of your budget forecast.

What are the design options?

A major benefit of the Self Build Plots at Graven Hill is that you can get a very clear idea of what you can create before you buy. This is possible thanks to the fact that every site has its own Plot Passport, which sets out everything you need to know – including the key development criteria for each site, based on an over-arching Design Code.

This approach embraces the individuality and creativity of self building, while streamlining the planning process. "Depending on where the site is on Graven Hill, you'll get different levels of design freedom," says managing director Karen Curtin. "You only need to take a look at the recent Grand Designs: The Street TV show to see how different homes with the same Plot Passport can be."

A variety of plot sizes are available; currently you will find land suitable for homes with three, four or five bedrooms. Sites in the Community Streets

or Urban Lanes character areas give the most design freedom, with the main restrictions being permitted build zones, maximum internal floor area, ridge heights and orientation. For homes in areas such as the Village Centre or Rural Lanes, you'll still get plenty of choice – but you'll need to pick from a broad external materials palette.

How easy is it to get planning?

It couldn't be simpler. Every serviced plot at Graven Hill already benefits from consent in principle, so all you need to do is develop a design that fits with the parameters indicated on your Plot Passport and get it rubber stamped. "One of the beauties of our approach is that, as long as your scheme meets the compliance checklist, you get fast-track planning within 28 days," says Karen.

Most self builders go down the Plot Passport route, which serves as a fantastic guide for you and your design team, helping you to develop a wonderful individual home and giving you access to that fast-track approval. But if you really want to do something a little outside of the pre-approved parameters, you can. "To do this, you would need to go through the normal planning process for reserved matters, which usually takes between eight and 13 weeks," says Karen.

How do I build?

That's completely up to you! Once the Golden Brick foundations are in and the plot is formally handed over, you'll be free to move the project forward in a way that suits you as a self builder. For instance, you could engage a main contractor, seek out a specialist package home supplier or manage the individual trades yourself.

Benefits of Graven Hill Self Build Plots

Design freedom Guided by the Plot Passport, you can build a home that suits your needs, style and performance preferences.

Pre-approved planning Secure formal consent within 28 days by following the information contained in your Plot Passport.

Serviced plots Utilities are brought up right to the site boundary, ready for you to arrange the final connections.

Support throughout your journey A designated development liaison manager will guide you from reserving your plot through to completion of the Golden Brick works.

Zero rated VAT on foundations Leaving you free to allocate more budget to the things that really matter to you.

PROJECT ROUTES:

Mix & Match Homes at Graven Hill

Want the creativity of a self build without the hassle of coordinating everything on site? This new route could be for you

Right: Graven Hill is working with leading self build suppliers to offer an assisted route to creating a bespoke home

Innovation lies at the heart of the UK's largest self and custom build community, and Graven Hill's latest initiative is no different. Mix & Match plots provide you with all the benefits of an individual home, while bringing you a supported solution that will help you make the most of your project.

This approach is designed to be an evolution of conventional self build. It gives you reassurance about the cost and delivery of your new house, while still providing you with real design flexibility.

So whether you're not sure about specifying a scheme from the ground up, want clarity on budgeting or are struggling to pick the right build partners, this could be the ideal route for you.

How does Mix & Match work?

For this new product, Graven Hill is working with some of the self build sector's leading suppliers to offer you a choice of design options across a number of different plots. You get to

Benefits of a Graven Hill Mix & Match home

Pick from a choice of house designs Choose a home that suits your requirements in your ideal location at Graven Hill.

Planning is taken care of The available designs on each plot already have full planning permission, so there's no need to wait around to find out whether your scheme can go ahead.

You'll know the upfront costs Once you've chosen a scheme, Graven Hill can supply prices for the land, foundations and house.

Work with leading suppliers Get access to high-quality designs from award-winning market leaders in the self build sector.

pick the location and house plan you want, and because the design is already agreed, you'll get an instant quote for the land, Golden Brick foundations and the finished home.

As Mix & Match is a self build option, you'll still be free to discuss your household's individual requirements with the design and build provider – giving you access to an excellent level of design freedom. Perhaps you want to specify your own preferred finishes, for instance, and negotiate an agreed price for these directly with the supplier.



The first 17 Mix & Match plots – a mixture of three, four and five-bedroom opportunities – will be released soon, but you can already see the locations on the 'Find a Plot' section of the Graven Hill website. Here's how the process will work:

- 1 Find your plot online or talk to the Graven Hill sales team about the available opportunities.
- 2 Decide which design you prefer, at which point you'll be able to see the land price, cost of the Golden Brick foundations, and house price (minus any bespoke finishes).
- 3 Reserve your preferred Mix & Match plot and Golden Brick foundations.
- 4 Confirm your pre-approved house design and your chosen supplier.
- 5 Exchange and complete on your plot, and let the experts start building it!

Mix & Match is designed to suit a new breed of self builders who want a stress-free approach to achieving a bespoke house. Be sure to check back on www.gravenhill.co.uk to hear more about the launch of this route to your individual home.

PROJECT ROUTES:

Custom Build New Homes at Graven Hill

This option gives you control over internal layouts and finishes, safe in the knowledge your move-in-ready home will be delivered by the professionals

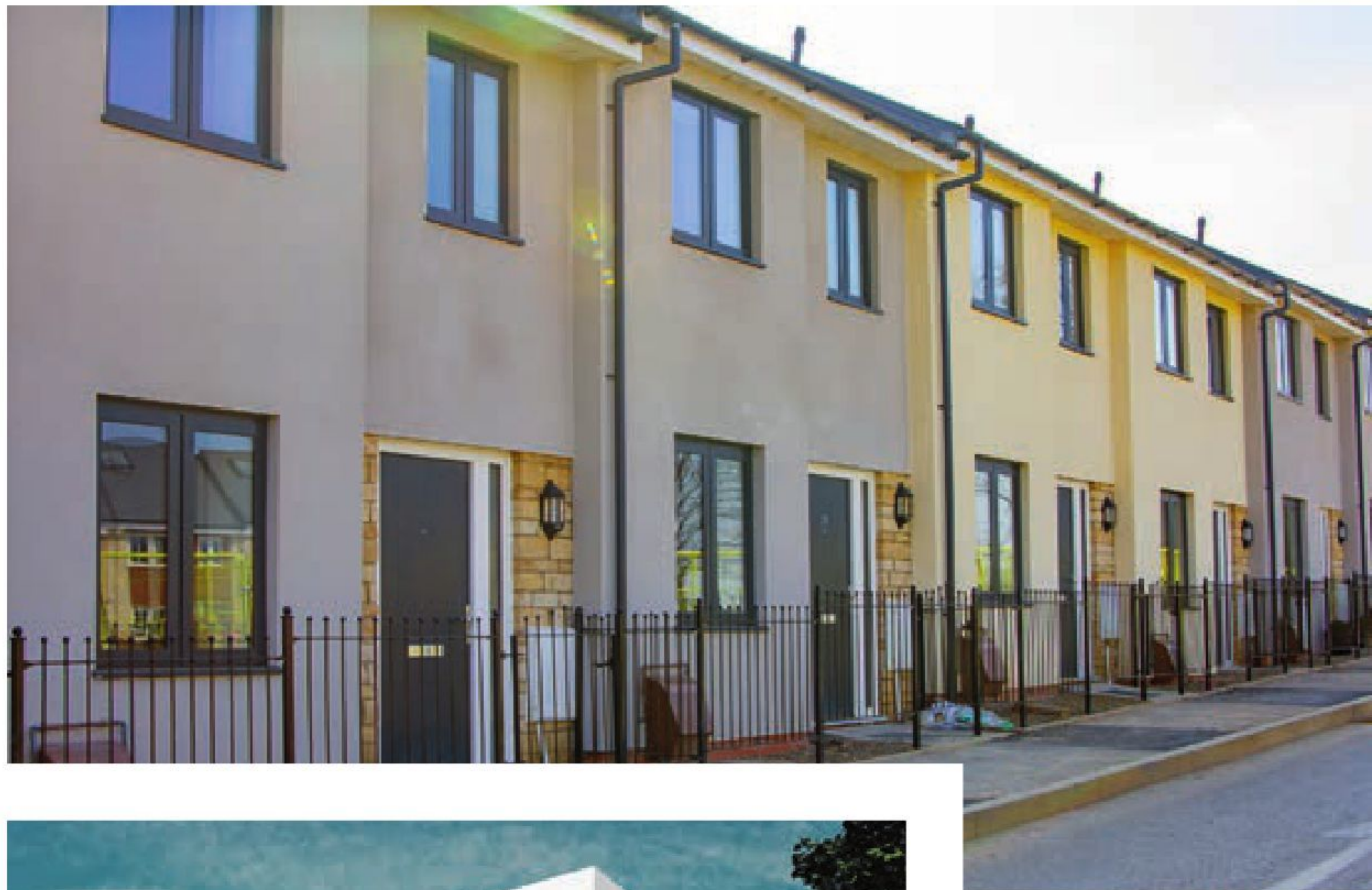
Choice and quality are at the core of the Graven Hill experience, enabling you to get the home you want at a price you can afford. But can you still take advantage of this amazing opportunity if you don't have the time or inclination to manage the self build journey through to completion?

The simple answer is yes. Graven Hill's Custom Build New Homes approach allows you to tailor the interior design, specification and layout of a pre-approved house design. Once you've made your choice, the experts take care of building it.

This is nothing like buying a standard property from a major developer. You can customise these high-quality houses by selecting your internal layout and finish preferences from a wide menu of options. The key thing to bear in mind is that the sooner in the design and build process you reserve your plot, the more choices you'll have; so if you're keen to have input on the internal layout, you'll want to get on board as early as possible.

When it comes to fixtures and fittings, you can select everything from your preferred flooring through to a range of premium kitchen options, white goods, sanitaryware, lighting and more. A turfed garden with paved patio area and parking for two cars is included in every design.

Each house is fibre-optic ready and comes with a 10-year structural warranty from Premier Guarantee, underpinning the high quality of



Above: A row of pre-built terraces at Graven Hill, ready to be tailored internally. Left: A concept design by Beattie Passive for a three-bed custom home

these customisable homes. And because they're classed as new builds, you can even access the government's Help to Buy finance scheme.

Benefits of Graven Hill Custom Build New Homes

Stunning contemporary designs These beautiful personalised homes feature light and bright rooms in high-quality living environments.

Choice of finishes and layouts The earlier you get on board in the process, the more options you'll have to customise your new property.

Premium kitchens Select from a range of high-quality fixtures, fittings and appliances.

Help to Buy finance Take advantage of the government funding scheme to make your home more affordable.

High-speed broadband These properties are fibre-optic ready; all you need to do is choose a supplier.

Reserving your dream home at Graven Hill

Here's what you need to know to find the ideal plot or custom build opportunity and create your new bespoke home



Above: You can explore the currently available Self Build Plots, Mix & Match Homes and Custom Build New Homes at www.gravenhill.co.uk/map

The first step to identifying the right opportunity for your home building project is to shape your ideas and priorities. Key questions include the size of house you're keen to achieve, the degree of design freedom you need, what kind of budget you have for the land and construction phase, and how you want the build to be delivered on site.

The answers to these initial queries will help to narrow your search. This information will define the character areas that would work best for you and which sites might be able to accommodate your bespoke house plans. It may also assist in steering you towards one of the three core project types. Would a Self Build Plot, Mix & Match Home or Custom Build New Home suit you best?

Easy ways to find your plot

With those basic parameters outlined, you'll be in the best position to start looking in earnest for the

right opportunity. If you want to put yourself ahead of the crowd and be among the first to hear about new sites as they become available, then be sure to sign up for alerts on the Graven Hill website.

You can use the online 'Find a Home' tool at www.gravenhill.co.uk/map to get a better understanding of what's available. The service includes helpful filters so you can browse by plot type (such as self build or custom build), building type (detached, semi, terraced etc) and the maximum number of bedrooms permitted.

Click through to a site currently for sale, and you'll be able to see details of the individual Plot Passport, guide prices and other key information. So you can get a fantastic sense of whether that site might be able to accommodate your goals.

"Alternatively, you can visit the on-site marketing suite, where our team can give you a detailed insight into the prospect of building your own individual home at Graven Hill," says Karen Curtin.

Staff at the marketing suite can provide in-depth guidance and information about every aspect of the self build journey, from design and planning through to securing a site, arranging finance and more. "Here you'll find visuals and case studies, as well as see the whole site and what you're buying," says Karen.

Buying your dream plot

If you're applying for a self build serviced plot, you'll first need to have an assessment from BuildStore (the UK's leading self build mortgage provider) to demonstrate you have sufficient funds to acquire the land and proceed with the build.

From here it's a step-by-step process. You'll pay a reservation fee based on the value of the site, and then it's time to move ahead with your design. Once you've secured fast-track planning under the Plot Passport regime, Graven Hill will plan and price up your Golden Brick foundations. You'll then exchange contracts, which triggers delivery of the Golden Brick phase of your project. When the foundations are done, you'll receive a completion document. At this point you pay the rest of the money and become the legal owner of your self build serviced plot.

With Custom Build New Homes, the process is similar to buying a house on any other housing development, with a reservation fee to pay initially. "If you're going through Help to Buy, you'll get confirmation of the price," says Karen. "You'll then exchange within 28 days and we'll set to work on delivering your completed home."

Financing your project

Whatever you have available to spend, making the most of your budget will undoubtedly be a key consideration for your bespoke home building project. This is another area where Graven Hill offers major advantages.

On a Self Build Plot, for instance, once you've got your Plot Passport compliant design locked down, you'll be provided with a fixed price quote for the Golden Brick works. So you'll get certainty over what you're going to pay for that particular



pre-serviced site and foundations – something that's difficult to come by on a conventional self build. This will put you in a strong position when it comes to allocating your overall budget and understanding cash flow throughout the works.

It's a similar story for Mix & Match Homes: once you've reached an agreement with your house provider and sign-off from Graven Hill, you'll be supplied a firm price for the plot, foundations, construction and fit-out of your new property.

The Custom Build New Homes route can bring you even greater clarity, as you'll get a guide price for the completed house upfront. All you need to do is select your internal layout and finishes to get the final cost for your move-in-ready home.

Accessing finance

While some can fund a scheme through savings, the majority of self builders will need to secure a loan to enable their projects. Few high street banks deal with this kind of finance, however.

Graven Hill is working closely with specialists such as BuildStore so you can understand your finance and budget options early on. A self build mortgage is different to a standard mortgage,

Discover how to get the right funding in place to make a success of your self or custom build scheme at Graven Hill

as the money is released in stages as the build progresses, rather than in a lump sum. There are different ways in which the money can be released, and this will be dependent on the product you choose. Find out more on page 9.

If you want to reserve a Graven Hill plot, you'll first undergo an assessment by BuildStore. This safeguards you and your future neighbours, by ensuring your project is viable and you're in a financial position to complete the build within two years of completing on the purchase.

Cherwell District Council is also launching a Bespoke Custom Build Mortgage pilot scheme, aimed at supporting local people in accessing self build finance on select Mix & Match Homes. Find out more on the Graven Hill website.

Custom build & Help to Buy

If you're considering a Custom Build New Home at Graven Hill, you may also require a specialist self build mortgage – and the team can introduce you to a range of suitable lenders, should you wish.

Those facing financial constraints can gain support via Help to Buy. "The government provides you with an equity loan of up to 20% of the cost of your newly built property," says Karen Curtin. "You will therefore need just a 5% deposit, with a 75% mortgage making up the rest." This option applies only to completed new houses (so it's not available for Self Build Plots or Mix & Match Homes).

QUICK GUIDE Structural warranties

For peace of mind, every home at Graven Hill comes with a 10-year, insurance-backed structural warranty. This provides protection against the risk of major damage to or defects in the design and construction your new home. By default, this is provided by Premier Guarantee – although you can appoint your own provider on Self Build Plots, should you prefer. Graven Hill warranties include a building control technical audit of your house, site inspections, completion certificates and contract works insurance.

PROJECTS IN PROFILE

4 new homes at Graven Hill



Terry & Olwen Waite's Grand Designs' self build

House style Three bedroom detached home **Work commenced** April 2017 **Build status** Completed September 2018

Leaving their quiet village in Northamptonshire, Terry and Olwen Waite set out to create a brand new stand-out home at Graven Hill. Their self build was one of the first 10 pioneering projects followed on television in the Grand Designs series, The Street. For this couple, constructing a home from scratch was a way to get a high-quality house tailored to their specific needs, so they thoroughly researched their project by going to self build shows to make the most of this opportunity.

Backed by some building experience, Terry was able to get hands on, project managing and doing a lot of the construction work himself. They used Durisol blocks to create the new 124m² home, and were impressed with the quick construction speed these offered. Terry learnt how to build with this method and attended other training courses to pick up new skills and ensure he was doing things properly. They're thrilled with the result, with the final build cost coming in at £275,000.

Thomas Aries & Adam Foster's new custom build home

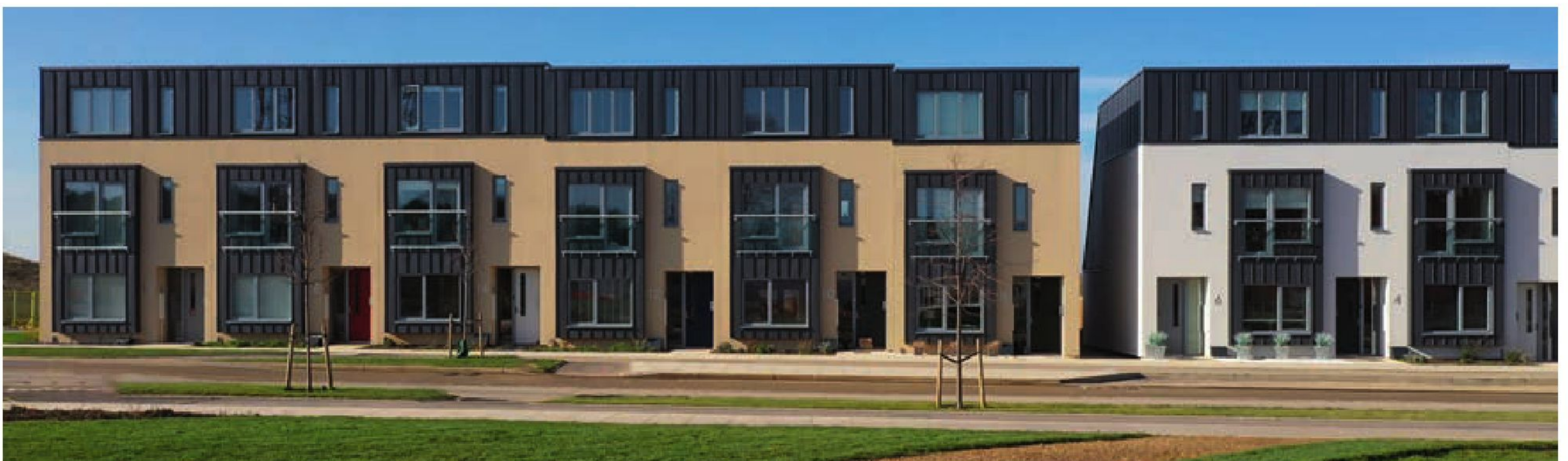
House style Three bedroom terraced home **Work commenced** February 2018 **Build status** Completed July 2018

Thomas and Adam were first time buyers looking for a home that was more than just a short-term starter property. When they came across Graven Hill, they found that the houses were better quality and more spacious than others eligible for Help to Buy, and their interest was piqued.

"The floorplan options were what originally drew us to Graven Hill's Custom Build New Homes," says Thomas. "We had three different layouts to choose from, allowing us to select the scheme we felt most connected to. We also liked the fact that reconfiguring the floorplan at a later stage is always an option as there were no internal load-bearing

walls. The level of customisation potential really intrigued us and has meant our first home is not a compromise."

After going on one of the Graven Hill bus tours at the beginning of 2018, they reserved a plot the following month in February, moving into their new home in July the same year. "It all happened very quickly and we couldn't be happier about that," says Thomas. "The community that is developing around us is great. Rather than having a street of clones, we have a road full of individual properties. We moved in around the same time as our neighbours and we were instantly able to bond over our various building journeys."



Sandra & James Dunn's custom build project at Graven Hill

House style One bedroom detached home
Work commenced November 2017 **Build status** Completed September 2018

Sandra and James Dunn were not looking to move to a new property, however when Graven Hill's Custom Build New Homes appeared online, they wanted to find out more. At the time, they were living in a two-year-old, three-bedroom property in an older part of Bicester, which seemed to tick all the boxes at the time. But this opportunity offered options that the couple hadn't previously considered.

"The contemporary design and unique image of these customisable homes appealed to us from the start," says Sandra. "Unlike other housing developments, Graven Hill is full of green space. The houses aren't clustered into tightly packed areas; instead, thought has been given to the different areas of the site to ensure that it is not only practical for the residents, but also makes the most of the space and environment."

The couple had lots of options to tailor the home to their preferences. They could pick the internal layout from a set of available designs as well as



choosing fixtures and fittings. "The customised floorplans enabled us to create a home that suits our lives," says Sandra. "We decided to have a downstairs study room instead of a second bedroom as there are just two of us living in the house, but we have the option of knocking through the garage and opening up the entire ground floor to one large space in the future."



Anita & Peter Reynolds' pioneering self build project

House style Four bedroom detached home
Work commenced June 2017 **Build status** Structure weathertight, fit-out ongoing

Anita and Peter, and their two teenage children, outgrew their local Bicester property and were looking for options to upsize. Outpriced by most of the traditional choices on the local market, the ambitious couple took the leap and decided to build their own home with the aim of making it big enough and bespoke enough to meet the needs of their whole family. Not only that, they have used their budget wisely to now be mortgage free.

Peter was able to take on an active role in the project management of his family's build – with help from his son, Sam. Not only did managing the project himself shave off some cost, Peter also built quite a lot of the property, too, unearthing some unexpected hidden talents. With the final bits of the house still coming together, their estimated build cost is coming in at £180,000. The house was recently presented on Grand Designs' The Street.

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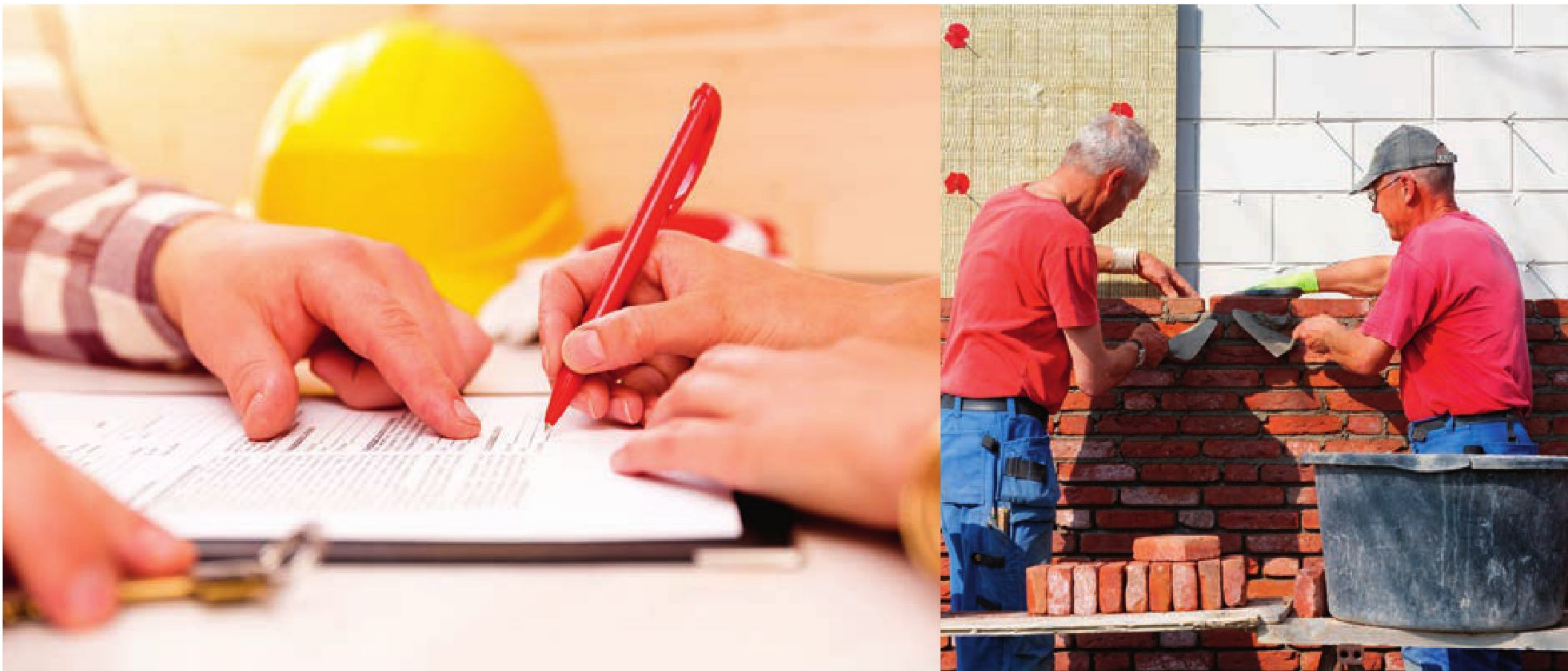


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FACIT HOMES

Essential guide to project management

Want to finish your build on time and on budget? Discover the key routes to successfully realising your dream home



In the simplest terms, project management encompasses the skills needed to produce a defined outcome (in this case a new house) within the constraints of the resources available (your budget) and within a certain timescale. The latter can be flexible, but for some reason usually manifests itself as “in the house before Christmas.”

We often encounter project management in our day-to-day lives without giving it a second thought. Arranging a family holiday, planning a wedding and organising the office party are all projects that we are happy to approach with little or no prior experience – and more often than not, we’re able to deliver them with great success.

Building a house is no different. People have constructed homes for centuries. Quite a few builders and tradesmen know how to do it rather well because, for most projects, it’s not rocket science. Leaving aside one-off conceptual designs and instead focusing on the typical houses that we might contemplate building for ourselves, the sequence of events is based on common sense.

The real art is in finding the right materials and sourcing the right people to do the job to the standard you require, for a price you can

afford. This guide will help you identify the best way to approach your self build scheme.

Should I use a professional?

A good project manager can save you some, most or even all of their fees by bringing greater efficiency to the site. By buying materials cannily (using access to their trade discounts), foreseeing and avoiding costly delays and minimising the need for rework, the build will be completed on time, on budget and with the minimum of fuss.

There are undoubtedly plenty of professional, independent project managers (PM) out there who can take day-to-day control of your build, but the clue is in the ‘professional’ bit. These specialists don’t come cheap (expect to pay around 15% of your build budget) and most self builders have a finite budget, the majority of which needs to be allocated to the physical construction by way of materials and labour.

Think of it this way. If you have £200,000 to spend on the building work, 15% of that would be £30,000 – potentially enough to pay for a lovely kitchen, designer staircase and good-spec bathroom. For this reason, using an independent

Above left: Whether you’re taking on a project manager, general builder or individual trades, putting good contracts in place will protect both your interests. Above: Labour shortages mean that good brickies are in high demand at the moment, so don’t expect a cheap quote – and be sure to book the job well in advance

The Harmstons self-project managed the delivery of their 328m² contemporary home, and even got involved on a DIY basis – partnering with a small number of recommended sub-contractors, including a plumber and electrician who were willing to help them learn on the job



JOHN DOMINICK



PM tends to work best on a big, complex scheme where the pro's experience and contacts can help to claw back some of their fee.

This prompts most of us to either undertake the role of project manager ourselves or to entrust this task to a general builder – someone who knows what they are doing and has the contacts to get the right trades at the right price. For a typical self builder contemplating creating a straightforward new home, this can be a sensible route to take; as long as you select the right main contractor.

Remember though, that the best builder is not necessarily the cheapest. While they need to be affordable on your budget, it is just as important they are capable of doing a good job. Gauging whether that will be the case means doing your homework by asking them for references and following them up. A good builder will always want to do a high-quality job as his next contract depends on it – after all, you're the one who will be providing the references to the next clients.

Alternatively, you can ask your architect to undertake the project management role. For complex designs or cutting-edge builds, this can make a lot of sense, as you get the reassurance that the person who came up with the drawings – and therefore knows how it's supposed to fit together – is coordinating delivery.

Architects often calculate their management fees as a percentage of the build costs. A common worry is that this encourages the architect to 'build big' and specify a raft of expensive materials in order to maximise their potential return.



This characterful home was realised with the support of oak frame design and build specialists, Border Oak (www.borderoak.com)

5 essential project management tips

Keen to run your scheme on the ground? Self build consultant Mike Hardwick, who has completed his own home and helped countless others achieve theirs, sets out his golden rules to take the stress out of the process:

- 1 Plan ahead** Spend as much time planning your project as you do actually building the house. Adopting a patient approach, researching what's out there and speaking to experts – for example, at the Build It Live shows (www.builditlive.co.uk) – will help you gain confidence you're making the right choices and getting value for money.
- 2 Set a realistic budget** The key to avoiding a Grand Designs disaster is to work out how much you can raise in total for the build. Use this as the basis for your choices, rather than trying to make an inadequate budget fit an overambitious scheme. And remember to include a contingency of at least 10% to cover unforeseen events.
- 3 Make your site a nice place to be** You're not trying to make friends for life with builders, but if they enjoy

working on your project, then they're likely to do a good job. Clear direction, timely decision-making, a supply of tea (and maybe the odd pack of biscuits) and a thank you for work well done will more than repay themselves.

- 4 Don't sweat the small stuff** Running yourself ragged to save a few pennies on a bag of nails really isn't worth the effort. Reserve your negotiating skills for the big-ticket items like bricks, tiles, windows and doors, where a good discount could be worth £100s or even £1,000s.
- 5 Accept that problems will crop up** Every project is different and each job throws up its own challenges. If several issues arise simultaneously it can begin to seem overwhelming, but rest assured this is normal and your project will get to completion! If you have fostered a good relationship with your trades and suppliers, this is where they can help by offering advice or solutions based on their experience.

More online: self-build.co.uk/project-management

You can potentially combat that by agreeing for them to work on a fixed fee or ceiling price (something an independent PM or main contractor may also be willing to do). This gives you a top-line figure for the build while incentivising them to seek keen prices from trades, with some of the savings passed on to you. So it's a win-win situation.

Should I self-manage my project?

The final option is to take on the role of project manager yourself. A surprising number of people choose to do this, and 99% of them successfully oversee their schemes to completion – although most will tell you that it's a full-on job that takes up virtually all of their time and energy.

Because of this, first-time self builders often work with one of the established package home suppliers such as Potton or D&M Homes. These companies have experts on hand, and you can select from a range of services to help as much or as little as required throughout the project.

They can offer you a package for the design, materials supply and erection of your house shell on site – so you get a weathertight building on a

fixed price that's ready to be fitted out using your own trades. In some cases, you can use follow-on services even deeper into the build.

Should you then choose to move on to another self build in the future, you'll have learnt a huge amount. Confidence levels will be that much higher because the processes involved are clearer and easier to address the second time round.

If you do decide to manage your own build, then remember that you are taking on responsibility for everything that happens – in other words, the buck stops with you. While that may seem daunting, it's quite amazing how writing out the cheques can concentrate the mind and give you the motivation to find great deals and resolve problems on site.

The trade-off is that it will take up much of your free time, of course, but you will have a keen interest in making sure that you are getting value for money. You'll be surprised at just how empowering this is and how much you are capable of. Not to mention, it can be immensely rewarding when you see the finished results: a perfect new home, made to your exact specifications, that's only there because you made it so.

Quick guide Finding good trades

The prospect of sourcing the right contractors and trades fills even the hardest self builder with trepidation; but there are plenty of excellent construction professionals out there. The trick lies in doing your homework. Here are the key things you need to bear in mind:

A good builder is a busy builder Don't just accept the first contractor who comes along offering a cheap, one-line quote saying they can start on Monday. Experienced, high-quality builders who do great work for their clients will have a series of jobs lined up, so you'll need to speak to them well in advance. You'll probably wait at least three months for a decent main contractor, for instance.

Be clear about what you're doing A tradesperson needs robust information to accurately price a job – so you need to provide them with proper structural drawings (ie those submitted for Building Regulations approval) and a Scope of Works that details your exact requirements for the job at hand (such as electrics, plumbing, finishes etc). This will also help you to ensure you're comparing quotes like-for-like.

Check references Look for trades with a positive reputation and – crucially – make sure they can prove it by asking for references and following them up. If they've done a good job for others, they can and will do the same for you. Recommendation from friends, family, colleagues etc are your best first port of call. Don't just rely on web reviews; you can never be sure how accurate these are.

Put a good contract in place A robust contract will force both you and your trades to discuss what's required on your project in detail and puts protections in place for both of you, so there are no surprises about who's doing what and everyone's happy. This should include a process for changes and unforeseeable works, with updates agreed by email (after all, cowboys will hate a paper trail). You can buy user-friendly Plain English contracts from the likes of JCT (www.jctltd.co.uk) and ContractStore (www.contractstore.com).

Agree quality Good is something of a subjective term. What might be perfectly adequate on a mass-market development probably won't work for you as a self builder looking for a great finish. Ensure you and your trades are on the same page by including photos of examples of the workmanship you expect (whether it's neat brickwork, perfectly aligned tiles or well-fitted windows) in the Scope of Works and your contracts. That way you both have something to refer to.

Set out payment terms In most cases, you'll want to secure a fixed price and timescale for the works, so everyone knows where they stand. Staged payments in arrears should work for all parties. With general builders, the ideal triggers should be key milestones (site clearance, foundations, superstructure, etc). With individual trades, you might work on fixed fee for completion, or a weekly or fortnightly schedule.

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Scheduling a home building project

Get your scheme off on the right foot with our guide to what happens at the key construction phases

There are no ready-made templates on which self builders can base their detailed project schedules, because every build is unique. Trying to fit your scheme into the profile of a previous project will almost certainly fail within the first few days, when something unexpected happens. That said, there is a general process that's fairly predictable. So let's go through the key phases.

Early stages

The initial step is site acquisition. You may in fact already own some land, or you might be searching for the ideal plot, but until you know what it actually looks like, little else of substance can take place. Prior to purchase, you'll need to appraise the site thoroughly to ensure that you're paying a fair price (such as by securing estimates for services).

The size, shape and the location of the plot will basically dictate the design process, along with the planning and Building Regulations approvals that have to be obtained before work can start. Remember that you must submit the proper Community Infrastructure Levy (CIL) exemption forms (otherwise you could end up facing a development tax of £10,000s).

For some lucky people, the plot finding and design phases are straightforward, lasting as little as six months. But for many, it can take much longer to get to the point where construction can start.

Pre-contract negotiations

Once planning permission has been obtained and you have workable Building Regulations drawings, you can start looking for contractors and trades. In addition to the drawings, preparing a statement of works that explains in detail what you require to be done will help you to establish accurate prices. This document can be measured against your budgeted costs and amended as necessary.



It's at this point that you can get back in touch with the relevant utilities companies to establish the detailed costs of running essential services such as electricity, water and possibly gas, as well as connection to the drainage system. If the site conditions mean that engineered foundations are required, then this is the time to locate a suitable contractor at the right price.

Commencement

With all the prep done, construction work can begin. If you have agreed a CIL exemption, don't forget to submit a commencement form before any work begins on site; if you forget, the full fee may be payable. You also have a legal duty to notify building control of commencement no later than 48 hours before work begins. The early construction phases will focus on clearing and levelling the plot, setting up basic support infrastructure like a site office, storage and sanitation, and establishing vehicular access.

Foundations & oversite

Up first will likely be excavating the foundation trenches, pouring the concrete and creating the footings. Next will be the oversite. This could be a concrete slab, or perhaps a beam and block floor, which must be designed and ordered in advance.

The same basic procurement rules will apply for all materials used in the build. Readily available items such as stock bricks, blocks, sand and cement can be called for delivery as required, but bespoke materials such as windows, roof trusses and steels must be specified and ordered in advance to avoid holding up works. Be sure to establish likely lead times from the suppliers and factor these into your project schedule.

Remember that for timber frame, in particular, there's very little room for error in the foundations,

Above right: The house shell for Paul and Belinda Wilson's new build Passivhaus was watertight in less than two weeks, thanks to efficient work by MBC Timber Frame (www.mbctimberframe.co.uk), with Paul managing the rest of the work through to completion

as the house shell will be manufactured to exacting tolerances. While the heavy plant is on site, it's a good idea to get the drainage trenches and holes for storage tanks dug, too.

Scaffolding

With masonry, the early stages of the structure can be built without scaffolding. As soon as work becomes a stretch for the brickies, the scaffold needs to go up, and it will be added to in a series of lifts until the highest point can be accessed.

If you are building with a timber frame or with structural insulated panels (SIPs), the first lift of scaffold will usually be erected around three sides of the building (with one side down for access). Once work on the ground floor and ceiling structure is complete, the rest of the scaffold will follow progressively alongside the build. On modest houses, the two lifts might be erected in one go, because the small footprint means the first floor panels will be required in a matter of days.

While the scaffold is up, all of the high-level external work should be undertaken – this usually includes the superstructure, external cladding, roof structure and tiling, structural openings, fenestration, rainwater goods and external finishes. The scaffold can be taken down once this is done. Any holes where the flat-ended poles were fitted into brickwork are filled at the same time. The building should now be wind and watertight.

Internal works

Once the shell is weathertight, first fix joinery, plumbing and electrics can begin. With careful planning, these can happen simultaneously. The term first fix is used to describe the work involved with services that will not be seen in the finished home, like wiring, pipes and studwork. All of these will be covered up by the plasterwork or dry lining, which is the base for internal wall decoration.

Wet plaster gives a lovely finish where it is appropriate, but it takes months to dry fully. As such, dry lining is the quickest, most cost-effective way of finishing internal surfaces these days. The skim coat of plaster that goes on top is dry in a few days, so decoration can be completed shortly after.

Second fix work can take place when the plastering has been completed. This covers the visible components to be fitted by each trade: faceplates and switches; sanitaryware; and staircases, doors, skirting boards and architraves.

Internal fit-out

Next up is hard flooring, followed by the kitchen, along with any specialist bathroom or bedroom

furniture and fittings. This can be tied in with the second fix work, but may well be undertaken by separate installers working directly for suppliers – so check with your regular trades if it's feasible before letting them loose on these elements.

Decoration & finishes

Internal and external decoration can take place at the same time, but will need to wait until after the trades have left, so that the whole house can be swept thoroughly and tidied to minimise the risk of dust and debris ruining the final finishes.

External works

Landscaping and boundary treatments can be done while the decorating takes place and perhaps even earlier. One of the last jobs is to finish off the driveways and entrances onto the highway. Completing these any earlier risks damage from plant and heavy vehicles, which are notorious for knocking into stuff and leaking oil.

Planning your self build

Have you seen our project scheduling tool on our website? This simple calendar, spanning 30 weeks, is designed to offer an idea of what happens and when during a typical build of a large detached house. The programme shadows both a masonry and conventional timber frame home, each with standard trench foundations. Find out more at www.self-build.co.uk/self-build-planner

Completion

With the fit-out and landscaping done, the house should now be ready for your building control inspector to issue the completion certificate. This confirms that the property complies with current Building Regulations and is ready for occupancy. Make certain any invoices for materials used have been issued before this point, because VAT can't be claimed back on receipts that are dated after completion. Tidy up and you're ready to move in!

Post-contract work

Although your home is technically complete, it is usual for around 2.5%-5% of construction costs to be held back against snagging work; especially when you have employed a general contractor.

Sometimes referred to as third fix, snagging is done a few months after moving in, giving time for the house to settle and for you to check everything is as it should be. If small details need fixing, the contractor should come back and rectify the faults. Once they've been addressed, they will get the balance of the fee (see page 77 for more on this).



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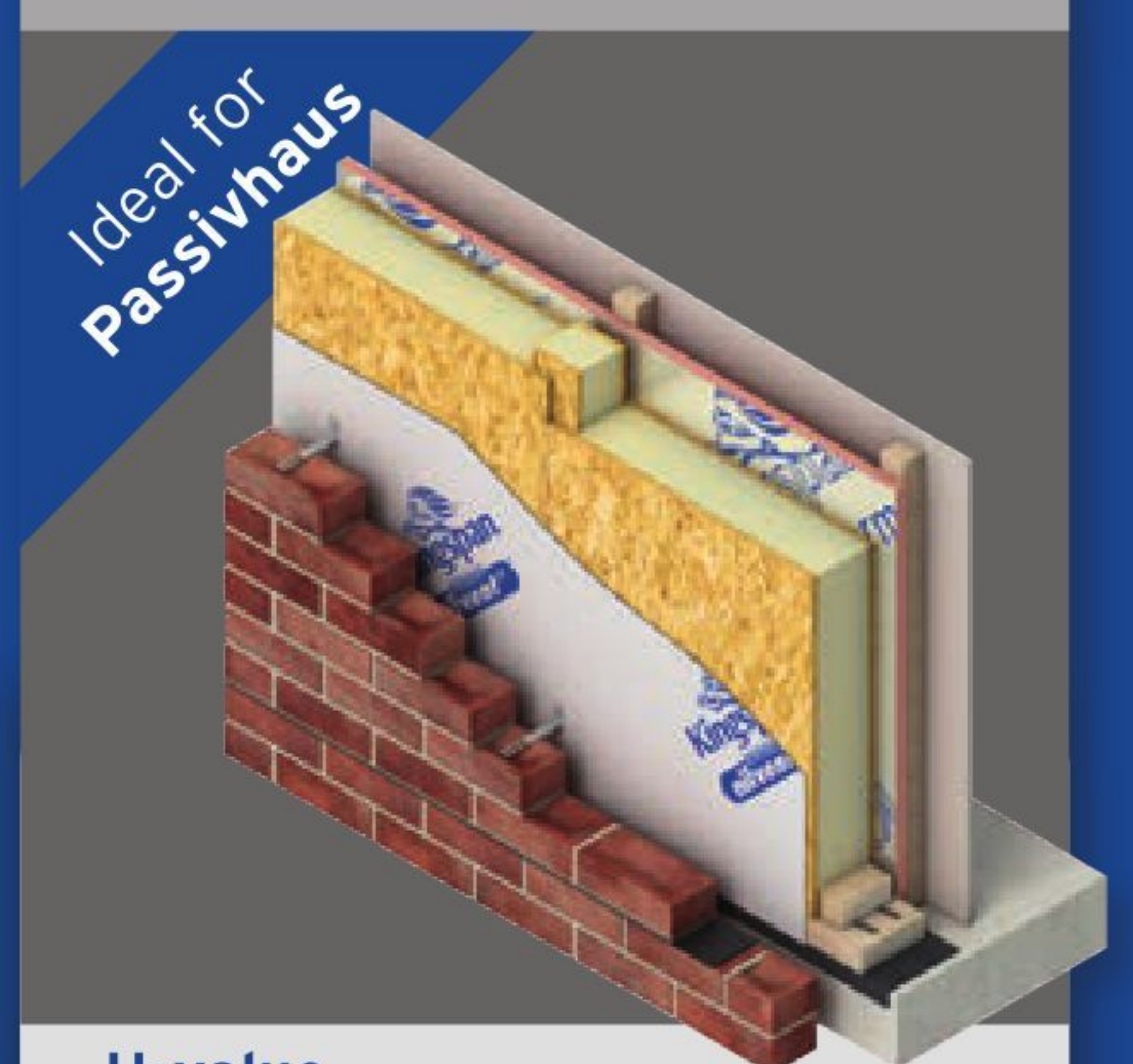
U-value W/m ² K	0.21
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Air tightness Range m ³ /m ² .hr	3 to 5
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Thermal Bridging Psi value	0.03 - 0.04
Air tightness Range m ³ /m ² .hr	1 to 3
SAP Fabric Efficiency (KTS reference design)	24%-28%

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U-value W/m ² K	0.10 - 0.18
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Air tightness Range m ³ /m ² .hr	0.5 to 1.5
SAP Fabric Efficiency (KTS reference design)	27-28%



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Choosing a structural system

Not sure which of the core building routes will be the right fit for your project? Follow our essential guide

Specifying the construction method for your self build is one of the biggest decisions you'll make on the journey to achieving your dream home. This is the framework upon which every other part of your home is fixed and will influence how the scheme is delivered on the ground.

Each system has its pros and cons, and there's no wrong option. The trick is identifying which will best match up to your project goals. Your design team may well make a suggestion about which route to take; you might have your heart set on a particular solution; or the nature of your scheme may simply suggest one option over another (oak might make sense if you want built-in character, ICF if you want a basement, etc). Before you take the plunge, here are the key considerations.

MASONRY

The basics This route is popular with UK self builders thanks to the familiarity, affordability and robust feeling of solidity it offers. Most masonry homes are built with cavity walling, which consists of an internal skin of blockwork, a layer of full- or partial-fill insulation specified to meet your performance requirements, and an outer layer of brickwork. The walls are built up in courses, with wall ties to hold them in place, and lintels, cavity closers etc incorporated where required.

Design There's plenty of scope. A brick skin is the cheapest exterior finish, but render, cladding etc can be used, too. Internally, consider a load-bearing beam and block floor to enable open-plan zones. This will provide excellent soundproofing between storeys, matching the walls' acoustic performance. The solid construction means there's no restriction on fixing shelving, cabinets and

other items, while you can introduce steelwork to support large glazed openings and other structural features. Changes on site, while not ideal, are often easier with masonry than other systems.

Sustainability Masonry is highly durable, so while it does use quite carbon-intensive materials, homes still perform well in terms of environmental impact over their whole lifespan. The key is paying close attention to insulation and airtightness during the construction process, so be sure to engage skilled trades who understand how to achieve the targets you're aiming for. One area masonry excels in is thermal mass: the heavyweight blocks absorb warmth and gently radiate it back into the living environment as external temperatures drop, which can help to make heating patterns more predictable.

Build speed Masonry is a wet system, so walls can only get so high before being allowed to cure (dry and strengthen) enough to take the load of the following courses. You'll also be at the mercy of the UK weather (rain and frozen conditions will delay progress). So it's slower on site than prefab methods; but if you're project managing, you may welcome this. If you want to trim the construction period, consider the thin-joint masonry system, which uses lightweight blocks and a skinny layer of adhesive, as opposed to traditional mortar. The thin beds between blocks also offer the advantage of a slight improvement in airtightness.

Costs Because this is such a popular system, the core materials and labour required are generally easy to source, which means prices are always competitive – although do bear in mind that you will always have to wait for a good builder.

More online: [self-build.co.uk/masonry](https://www.self-build.co.uk/masonry)

Above: This masonry house by D&M Homes (www.dm-homes.co.uk) is finished in a mixture of timber cladding and crisp white render, with low-pitched roofs to complete the modern look



TIMBER FRAME

The basics Combining swift build speeds with design versatility, good energy performance and cost efficiency, timber frame has a lot to offer self builders. The system involves pre-manufacturing storey-height wall panels to be easily assembled on site. These comprise a network of timber studs, sheathed in oriented strandboard. Modern timber frames are usually supplied as pre-insulated closed panels, though they can be left open for you to fit the insulation on site.



Above: The bespoke design for this 200m² contemporary home was drawn up by Vicky Corbett, in-house architect at Potton (www.potton.co.uk)

Design Externally, lightweight claddings such as timber, render or brick slips will support your frame's quick build speeds. But you can happily switch to full brick or stone. Wow-factor features such as wide expanses of glass, vaulted ceilings and open plans can easily be designed in. As with other factory-made systems, you'll need to finalise key elements of your scheme, such as service locations, before production begins. Alterations can be made on site, but major changes are likely to be difficult and costly to achieve. Many timber frame suppliers offer a full architectural service, or you can appoint your own designer.

Sustainability One of the reasons many self builders opt for closed panel is that you get the reassurance of factory-guaranteed performance. The insulation is fitted under controlled conditions, into panels manufactured to a high-degree of accuracy, which can simplify delivery of a thermally efficient, highly airtight house shell. Construction can be very low-carbon, too. Be sure your supplier uses timber from sustainable sources.

Build speed Expect a lead time of around eight to 12 weeks to manufacture the frame, during which you can move forward with the groundworks and foundations on your plot. Once it arrives on site, a fairly standard house shell can be erected in around a week, at which point you're in the dry and protected from the impact of poor weather. This kind of shell-build approach can be

a good choice if you want to get the fundamentals done by a professional provider, but self-project manage the rest of the works.

Costs Timber frame generally comes in at a very similar price to masonry, because while you're paying more in manufacturing costs, there's less need for skilled labour. You'll generally get a fixed price for your frame supplier's portion of the work, which can help with budget planning; whether it's simply structural design and supply of the frame, or your contract includes follow-on services such as erecting the house shell on site. Bear in mind cashflow will be different for a premanufactured system as opposed to a site-based construction: you'll typically pay a deposit to trigger fabrication, and the rest of the money just before delivery.

More online: self-build.co.uk/timber-frame

STRUCTURAL INSULATED PANELS

The basics SIPs are ultra-strong, lightweight pre-insulated panels that can be used to construct walls, floors and roofs. They're supplied in kit form, according to your project's bespoke design requirements, ready to be slotted together on site either by an in-house team or your own contractor. The elements can be manufactured with openings pre-cut for windows, doors, rooflights etc.

Design SIPs homes tend to be clean-edged and contemporary, but there's no limit on style, so you can certainly achieve a heritage look. As with timber frame, you may prefer to go for a quick-fit external finish to accentuate the innate speed of this system. The panels' strength makes stand-out features easy to achieve, and a key advantage of SIPs is that it's ideal for creating spacious, ready-to-live-in loft rooms (even when used in combination with another solution for the walls).

Sustainability As a factory-manufactured solution with insulation built-in, SIPs offer a straightforward route to getting excellent performance out of the box – without the need for excessively thick walls. The panels feature a complete layer of insulation, which helps

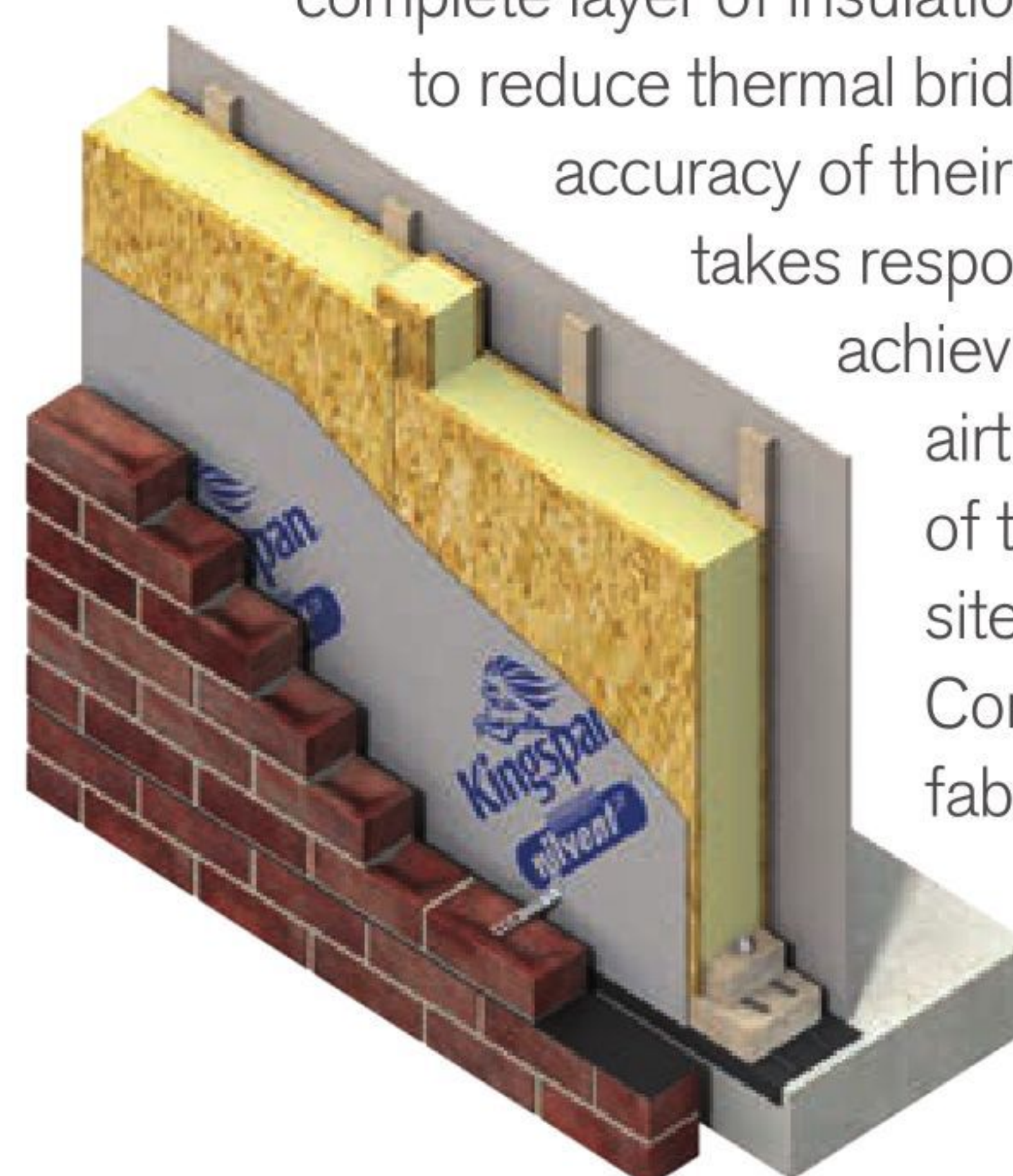
to reduce thermal bridging, and the accuracy of their manufacture takes responsibility for

achieving the planned

airtightness out of the hands of site operatives.

Computer-controlled fabrication of

the timber components also reduces



Right: The inner workings of a structural insulated panel are shown in this drawing from Kingspan Timber Solutions (www.kingspantimbersolutions.co.uk)

wastage. The rigid insulation is plastic-based; but this true of many structural systems.

Build speed This is another area where SIPs excels. As with timber frame, the entire shell of your house is factory-produced and slots together neatly on site – so there's no waiting around for wet materials to cure. A typical SIPs house can be made weathertight on site in under a week.

Costs On a fairly standard project, building with SIPs is likely to cost around 5%-10% more than using masonry or timber frame. But if you're aiming for good levels of energy efficiency or are looking to incorporate design features that complement this system, it can offer great value for money and a predictable build route.

More online: self-build.co.uk/sips



ANDREW WALL

INSULATING CONCRETE FORMWORK

The basics Known as ICF, this construction method is often referred to as being like LEGO for grown-ups. It consists of lightweight hollow blocks, usually made of expanded polystyrene (EPS), with interlocking profiles so they can be dry-stacked on site. The cavities are then reinforced with steel rebar and the formwork braced, before concrete is poured in to the structural engineer's specification – leaving you with solid, ready-insulated walls. ICF is usually provided on a structural design and supply basis for your contractor to install (be sure to engage someone with experience in ICF projects; or send your preferred builder on one of the manufacturer's training courses).

Design ICF might be built around rectangular forms, but that doesn't mean you have to end

up with a blocky house. Dramatic architectural features, cantilevers and wide spans of glazing (up to around 6m as standard) are all achievable – sometimes without the need for steel beams. Again, there's no restriction on external finishes: renders is particularly popular, however, as it can be applied directly to the face of the ICF. The materials' strength means it works effectively alongside beam and block floors for open-plan layouts, too; plus it offers the same advantages as masonry in terms of acoustic performance. What's more, you can use this system to create easy-to-waterproof basement zones.

Sustainability Insulation and airtightness are built-in with this system: the polystyrene formwork stays in place, while the interlocking profiles and concrete close off air leakage. So it's a strong fit where first-rate energy efficiency is a key goal. If you want to minimise use of polystyrene, you could consider going for wood-fibre based ICF blockwork (Durisol is the leading supplier).

Build speed The intuitive combination of lightweight, easy-to-handle blocks and poured concrete can make ICF a very quick system. On a straightforward project, the formwork, bracing and pour for a single storey can be completed in just a couple of weeks. Complex designs, such as multiple gables, angles or curves, will increase the amount of cutting required, thus adding time.

Costs If you're using builders, then you can generally expect prices to be in a similar ballpark to using SIPs, ie around 5%-10% more than masonry or timber frame. This is partly down to the fact fewer contractors and follow-on trades are familiar with this modern system. That said, this is one of the more intuitive construction methods, and some intrepid self builders do take a DIY approach – with the potential for significant savings (albeit at the cost of slower progress and responsibility for the fall-out of any mistakes).

More online: self-build.co.uk/icf

Left: Logix (www.logix.uk.com) provided the ICF system for this low-energy, traditional-style new build home – which is so efficient it doesn't require a heating system. Below: With a basement to construct, the Nudura ICF system from ICF Supplies (www.icfsupplies.co.uk) made sense for Build It magazine's Self Build Education House. This photo shows the ground floor wall pour



Right: This contemporary home is the work of Carpenter Oak (www.carpenteroak.com), who combined steel with oak frame and SIPs. The house features large expanses of glass and a blue zinc roof. Below: A fully-finished wall panel, complete with windows and timber cladding, arrives on site as part of a project by Baufritz (www.baufritz.co.uk)

OAK FRAME

The basics Oak has been a popular construction material for centuries, and this heritage craft is now combined with modern techniques to create high-quality homes that offer great thermal performance, innovative design and bags of charm. Its sustainability, sturdiness and durability make it an excellent choice for the environmentally conscious and many simply fall in love with the charming character offered by this hardwood as it dries. Frames are produced in the workshop or factory and test-assembled before delivery to site.

Design Oak homes all share an innate natural character thanks to the posts and beams – but you don't have to go with a traditional style. Some of the UK's most stunning contemporary new homes have been realised in this material, with features such as vaulted ceilings and open-plan layouts easy to achieve. You can also combine the oak with other modern products, such as steel bracing, for a unique look. Design and building with this technique is a specialist skill (oak has maximum spans, for instance, so frames generally feature a bay layout), so it's important to work with suppliers who understand the system. Many oak frame firms are set up as package home providers, with in-house design teams or partner architects they can recommend.

Sustainability Provided your oak is supplied from responsibly-managed sources, this natural material boasts great low-carbon credentials. To meet modern performance standards, the structural frame is usually wrapped externally



in a thermally efficient encapsulation system (some suppliers use SIPs for this), resulting in a highly efficient building envelope.

Build speed Oak frames are quick to assemble on site. Both the main skeleton and insulating wraparound panels are factory-made and slot together neatly, with projects typically taking just a couple of weeks to reach weathertight.

Costs Oak homes tend to come in at a premium, partly because their natural beauty warrants combination with other high-quality materials, such as handmade roof tiles and non-standard brickwork. However, the initial costs are invariably matched by the finished market value of the house. If you want to create an oak house on a budget, focus the material in the areas that will benefit most from the material's wow factor (such as living spaces) and pare back in other zones.

More online: self-build.co.uk/oak-frame

Quick guide Prefab homes

In recent years, there's been a growth in popularity of highly prefabricated houses. This kind of project features a factory-manufactured structural system at its core (such as timber frame or SIPs), but goes a stage further in that a huge amount of work is completed off-site, under controlled conditions. Insulation, windows, doors, cladding, pipework, some electrics and even internal finishes can be fitted in the factory – so your home goes up super-quick.

The idea is that you get to specify the design, layout and finishes of your new home, but the production and delivery are all handled by a specialist team. The accuracy and predictability of this route allows the supplier to offer its services on a fixed price, and to a fixed completion date. Some can deliver a full turnkey route (typically minus groundworks and kitchens), with projects taking as little as 12 weeks from the first panel arriving on site to moving in.

While this off-site approach can offer a raft of benefits, it's not perfect for every project. If restricted access to your plot rules out big lorries or cranes, for instance, then it's not



likely to be suitable. An advanced level of prefabrication won't be for you if you want to get hands-on with running the scheme or contributing on-site, either, while the design will need to be fully locked-down, with little opportunity for changes during construction. As your supplier will be taking on a lot of the risk of delivering your home, costs will be at the high end – but can still be value for money.

More online: www.self-build.co.uk/prefab

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Choosing doors & windows

Ready to begin sourcing your home's fenestration? Here's everything you need to know before you start

Above right: these Solarlux (www.solarlux.co.uk) aluminium bifold doors took the top spot for Best Glazed Door in the 2017 Build It Awards

Creating a home with lots of natural light is often the number-one priority for self builders. Not only are they essential for providing access and daylight, but doors and windows create a clear link between inside and out; and natural illumination brings a feelgood factor like nothing else. The right units will add value, too. The Modern House, an estate agent specialising in contemporary architecture, researched sales and found people were willing to pay a premium for properties that feature ample natural light and good links between internal and external spaces.

Primary considerations

Style, functionality and price are key for entrance doors and windows – after all, they are integral for

As well as finding a fenestration style that suits your chosen architecture, you'll also need to make decisions about the level of energy efficiency and security you want, and ensure everything meets Building Regulations. Selecting a frame material is key and will come down to your particular priorities, including cost, longevity and how much ongoing maintenance you're prepared to do.

While traditional properties might have just a few glazed features – front door panels, back doors, windows – today, the options are enormous, stylistically as well as functionally. Fixed glazing is playing an increasingly important role in homes, from rooflights to oriel windows to gable ends. Glass itself continues to evolve to meet needs, from self-cleaning options for hard-to-reach areas to acoustic products that can aid noise-control.

Entrance doors serve a practical purpose – providing an entrance point to your home and an effective barrier to burglars – but they also have a powerful visual impact on the overall aesthetic of the house. It's vital, therefore, to select a model that works in harmony with the architectural style of the dwelling. Plus, you'll want to choose a design that stands the test of time in terms of looks and performance. Unlike internal units, they fulfil an important security function, so make sure anything you choose has been tested to PAS24 or Secured By Design standards. Remember to reserve some of your budget for door furniture, too. Letterboxes, door handles and house numbers are all important elements of the overall aesthetic – don't do your front door a disservice by specifying a high quality model and having to compromise on final touches.

As for internal doors, you need to consider how you are going to use them and the adjoining rooms/circulation areas. Standard hinged models will usually be suitable, but there are certain scenarios that may benefit from a different arrangement. For instance, do you have narrow corridors or a small bedroom with an ensuite? Installing a pocket door system that slides into the wall might be best, as it won't take up floor



Above: Laurence Associates (www.laurenceassociates.co.uk) designed this light-filled hallway for a Cornish property, with a glazed roof and views through the house

creating kerb appeal and in shaping the aesthetic of your home. "Many of our customers are looking to completely transform spaces. They usually want an open plan with unrestricted views and to let as much natural light as possible into the property," says Steve Bromberg, the managing director at Express Bi-Folding Doors. That may be your goal, too – but be aware that planning consent might dictate the style and materials you can use.

area or require you to undertake any awkward strategic positioning of your furniture.

Architect Darren Oldfield says that he takes a 'first principles' approach to planning fenestration. "We visit the site to assess the orientation and any obstructions to the solar path," he says. "If it was north-facing surrounded by trees and high walls, we would know ample roof glazing will be needed to make it feel light. If south-facing, we'd orientate the glass more to the south-west, so as to prevent overheating, and include openable rooflights."

Clever use of even small amounts of glazing can bring a real sense of wonder to a house, and that doesn't necessarily mean huge windows. From a glass-topped shower that avoids overlooking issues with neighbours to a porthole window that frames a country view (but blocks out the A-road in front), it can be a useful problem-solver, too.

Windows

A surprising amount of a home's character is derived from its windows. You don't need to be a qualified architect to know when something's not right with the style, proportions or arrangement. This is why self builders always take huge care over choosing glazing, knowing that it can make or break a property. Your planners might want a say in the style, but beyond that, here's how to narrow down the huge stylistic choice.

Traditional If you're trying to capture the style of a particular era, your job is, in a way, fairly easy. Some houses can be dated almost down to the decade from their windows, so research the period features you're trying to emulate. Sash windows were prevalent from the late 17th century, while casements pop up throughout history, from Tudor houses to post-war prefabs. Elements to get right include the number of panes and the width and style of the glazing bars and decorative details.

Contemporary The goal for many self builders is to achieve a modern look with big windows where the frame barely exists. Opening and fixed models can all offer this picture window solution, and a well-designed mix often yields best results. The beauty lies in simplicity, although there's nothing to say frames couldn't be colourful, unless the planners object. Instead, it's usually dramatic fixed glazing that offers talking points – eg gable ends, oriel units or a run of rooflights.

Front doors

Whether at the entrance, opening up a rear elevation or those inside dividing rooms, doors can add real wow factor. Your front door will be one of the first things visitors see, so make sure

it's adding to your home's overall kerb appeal and works with the other elements on that elevation. Material choice is important, as is ironmongery and whether you should get a bespoke design – remember all these choices will impact on cost.

Whatever style of home you're creating, the entrance will underpin the external aesthetic and set the tone for your interior design choices. Incorporating some glass into your home's front entrance – either in the form of a glazed panel or sidelights – will help bathe your hallway with



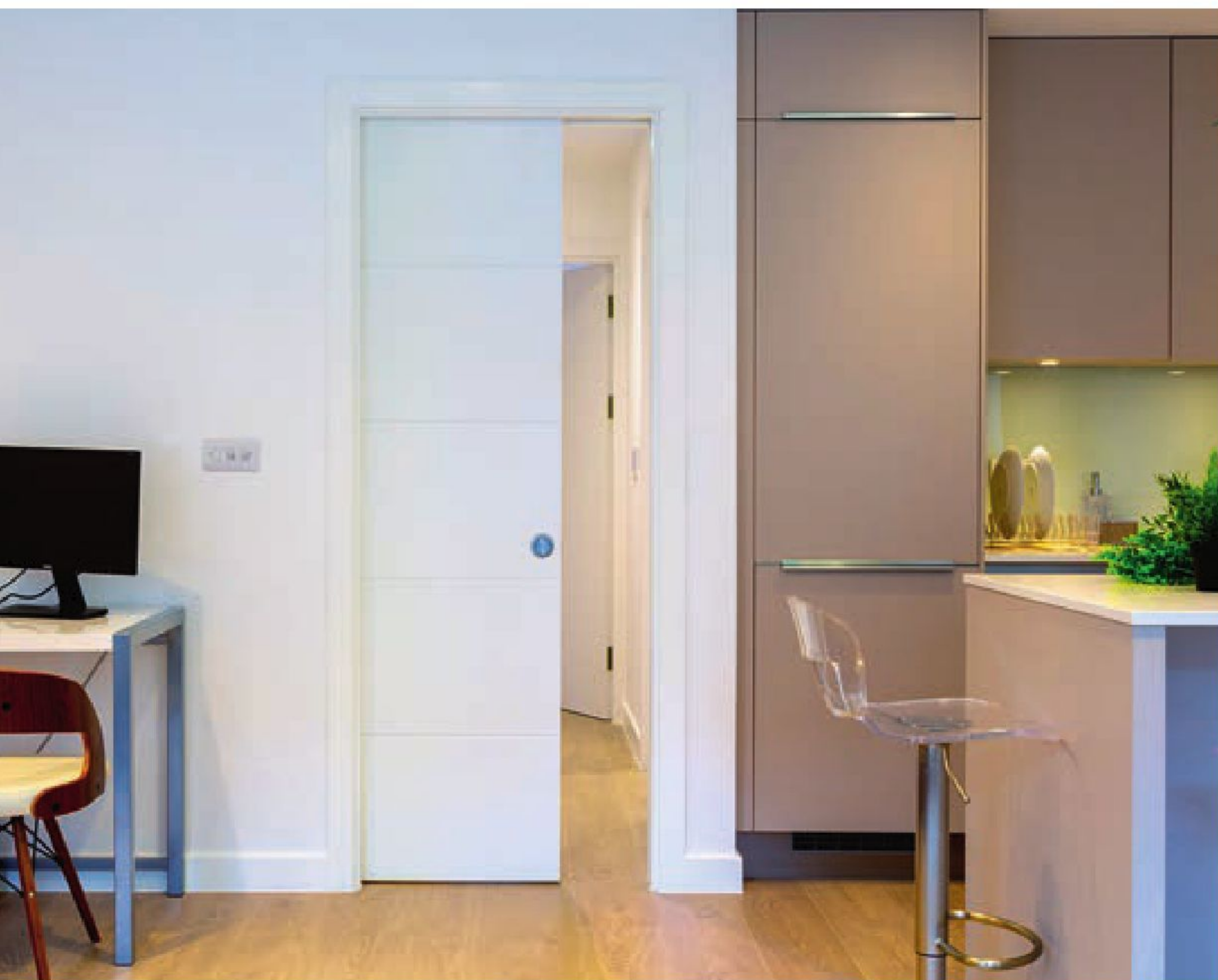
natural brightness. If you want to make a strong visual statement, you might consider choosing an oversized model, particularly if you're building a contemporary property. Adding a burst of colour is another way to ensure your entrance stands out; try selecting a shade that contrasts with the rest of your home's external materials palette.

Glazed doors

Nowadays, the distinction between doors and windows is becoming blurred thanks to glass doors that can span wide apertures and offer a useful entrance. These designs can help you take advantage of panoramic views, encouraging daylight to flood into the interiors and providing a connection between the house and garden. From traditional French doors through to modern designs that span vast distances, there's plenty to consider when specifying this part of your project. Whatever style you opt for, it's a good idea to opt for a supply-and-fit contract to ensure that the units achieve optimum performance.

Bifolds If you're hoping to provide clear access between indoors and out, bifolds are ideal. They can be drawn back to near-enough the full extent of the aperture, whereas sliders generally only open to 50%-66% of the gap. The need for

Above: Tilt-and-turn models can be useful behind a kitchen sink, where it's hard to reach over to operate a casement; this timber set is by Dale Joinery (www.dalejoinery.co.uk)



Above: A pocket door system, such as this smart white offering from Todd Doors (www.todd-doors.co.uk), can work well for zones that have limited floor space

multiple panels means sightlines will be thicker when the system is shut, so views from the inside aren't as clear. Opting for a strong frame material (such as aluminium) will reduce this issue.

If you intend to use the opening for regular access, bifolds provide optimum convenience. An independently-operated leaf can be integrated into the multi-panel makeup – essentially acting as a standalone back door within the glazed span.

Due to the folding nature of these designs, you'll need to ensure there is ample room to stack the system when it's open. You can choose to have the leafs racking fully inwards or outwards; this decision will depend on the layout of your home. For example, bifolds that open up onto a narrow balcony may be best oriented internally in order to maximise the outdoor space.

Sliders These glide in front of one another, rather than stacking back-to-back, meaning they don't

hog any floorspace. Although this doesn't allow you to open up the entire span of the gap to the outdoors, sliders are capable of hosting extra-wide panes of glass and can even be designed to slot back into the wall cavity – perfect for when you want to create a clear aperture.

Lift-and-slide mechanisms are available to smooth the motion of opening the doors. These designs raise the leaf on its track when moving, letting you glide it effortlessly, regardless of how big the pane is. With less complicated mechanisms and fewer materials than bifolds, sliding doors tend to offer good value for money (especially standard fit designs). However, the exact specification will of course have a big impact on the cost.

Alternatives If you're working on a modestly-sized project or a tight budget, don't rule out French doors. Whilst they won't offer the wow factor of sliders and bifolds, they still provide garden access and boost light levels.

Pivoting doors will provide a distinctive look and, thanks to their minimal frames, you'll be enjoying uninterrupted views, too. These designs swing open from one floor-to-ceiling pivot rather than being hinged to an adjacent frame.

Money matters

Fenestration can swallow up a big chunk of a self builder's budget. If finances are tight, then be aware that using lots of glass, especially in custom sizes, costs. Don't wait until your architect has created plans full of huge swathes of bespoke glazing and then find out you can't afford it. There are lots of ways to save money, from basing your design around standard-sized units to having a row of three smaller rooflights instead of one big one. Prices can also rise if access is poor, or if specialist equipment is needed to install any window panes that are especially large.

Quick guide Choosing a supplier

First things first: visit showrooms and ask questions. Having the chance to see the products in real life is absolutely essential. Be wary of ordering directly from overseas online-only manufacturers unless you're very sure they are au fait with UK Building Regs. Many suppliers have diversified into offering a one-stop service for front and back doors, windows and sliders or bifolds, making it convenient to have one point of contact and possibly offering cost savings for large orders.

Getting lead times right is important to consider, since it's key to a smooth construction phase, and Steve Bromberg of Express Bi-Folding Doors asserts that lead times are shorter when you buy a package of fenestration from one source.

Make sure anything you buy comes with an insurance-backed guarantee, which will offer protection if the company goes out of business. Certain specifications may take longer to produce than others, so give your supplier a clear spec early on to ensure your build programme stays on track.

The best suppliers companies can be very busy, so ask for a good indication of lead times upfront and a firm delivery date once you've placed an order. Generally speaking, you should expect to wait eight weeks for your order to arrive. If you're buying something off-the-shelf, lead times should be reasonably short. For anything bespoke, there will inevitably be a longer wait – check with your supplier.

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Choosing a heating system

Having the right setup in place will give you a comfortable home through all the seasons. Here's where to start when picking the best heating system

Whatever shape, size or ethos your new property embodies, a reliable and user-friendly heating system is essential for keeping your bills and carbon footprint as low as possible – and planning it from the start of your project will help to create the most efficient setup. From the appliance powering it all and the controls that adjust the temperature, through to the emitters working to disperse warmth into rooms, there's lots to consider. So, here we're outlining the basics.

The importance of hot water

In modern homes, domestic hot water (DHW) is likely to be a major component of total heat demand – so it's vital to factor this in. We've got better at insulating buildings and space heating requirements have fallen, but the amount of hot water we use has remained constant. DHW is delivered at 50-60°C, while underfloor heating in a well-insulated home can be run at 40°C or less. This can have a big impact on your choice of systems. Heat pumps, for example, run less efficiently when they are required to raise the temperature to a higher level – so their coefficient of performance will drop if providing hot water rather than just space heating. Biomass boilers, or simple stoves with back boilers, can deliver higher temperatures at a lower environmental impact – but they have their own pros and cons.

Gas boilers

The conventional boiler remains the most popular way to heat new homes; it's familiar, user-friendly,



efficient and cost-effective. There are two main options for self builders – system and combi. System units power stored water in a cylinder with a built-in pump and expansion vessel to supply mains pressure to several outlets. Combi boilers don't require a cylinder, as they heat the water up on demand directly from the supply, but aren't ideal for larger households, as pressure drops when they try to supply multiple taps, showers etc.

You might be concerned that a gas boiler isn't the most eco-friendly heat source, but it could actually be the best option for your home if it's built in a way that means it has a very low heating demand. Installing renewable solutions might be less cost-effective and eco-efficient than powering your heating system cheaply with the mains gas connection. This is why it's best to understand the space heating requirements and thermal efficiency of your home ahead of picking a product.

Biomass heating

These boilers provide an all-in-one, year-round space heating and hot water solution. They run on wood-based fuels (logs, chips or pellets), which are considered to be carbon-neutral (if responsibly sourced). Timber harvested for this purpose must be replaced so that the equivalent CO2 emitted

Above: The Worcester Bosch Greenstar I System boiler is suitable for small to medium sized homes (www.worcester-bosch.co.uk)

This white double vertical column radiator is available from Bathroom Takeaway (www.bathroomtakeaway.co.uk)



during combustion is reabsorbed by new trees as they grow – so where your fuel comes from is important. If you're building in a smoke control area then you need a DEFRA-approved appliance.

Domestic biomass boilers are most commonly fuelled by wood pellets. As they have a higher energy density, they require fewer deliveries and less space to store than chips or logs. It still takes work to feed the appliance, but pellets can be used in automated hopper setups, making this type a reasonably straightforward alternative to a gas boiler. The pellets can be delivered loose direct into the hopper, or supplied in sacks which you need to manually handle. The ash that's produced is relatively small by volume and makes a useful addition to the compost heap.

The caveat is that fitting a biomass boiler tends to cost several times the price of an equivalent gas appliance. If your setup qualifies for the Renewable Heat Incentive (RHI), you will receive cashback of 6.88 pence per kWh of heat generated (at the current tariff rate) – which can offset the price of the fuel and allow you to start to make inroads on cost of installation.

If you own a small, well-insulated home, you may be able to opt for a woodburning stove for space heating, with a back boiler to provide your domestic hot water. Combining this with solar thermal panels to cover your household's DHW need in summer may well give you the lowest-

Radiators or underfloor heating?

Radiators The classic option, these emitters are simple to control, offer a quick burst of heat when needed and come in an array of styles. A key downside is they hog wall space. Once you've calculated how many radiators are required, think about where they're best placed for efficiency and practicality (ie not in the way of furniture).

Underfloor heating Transforming your floor into a heat emitter could improve efficiency as well as free up wall space. Warm water flows through pipes underfoot at a lower temperature than in radiators, so these systems are great for new homes with good airtightness and thermal performance. The low flow temperature makes them a great option for pairing with a renewable heating source.

Right: Underfloor heating piping is laid beneath the floor to provide warmth underfoot; this setup is by Nu-heat (www.nu-heat.co.uk)



carbon solution. However, you'll need some kind of fossil fuel backup for times when you're not running the stove, because the sun isn't always strong enough for full hot water demand.

Heat pumps

Another technology that can provide an all-in-one heating system, heat pumps use electrical energy to concentrate low-grade warmth to a temperature where it can be used for space heating and domestic hot water around the home.

Air source heat pumps (ASHPs) cost more to install than a gas boiler (but less than biomass), and are currently similar in terms of the running costs. Ground source heat pumps are more expensive again, but slightly better in terms of overall performance as the temperature of the energy source (the earth) stays relatively stable.

The performance of this tech will be determined by the amount of kWh of heat it delivers for each kWh of electrical input. For instance, depending on the system you might get around three units of heat for each unit of electricity. The appliances work at their best in tandem with low-temperature distribution systems such as underfloor heating, which is common in self builds.

When comparing CO2 emissions of heat pumps to those of natural gas, it would be tempting to simply look at the annual figures for the carbon intensity of electricity, divide this by the coefficient of heat pumps, and conclude that they provide a saving compared to the carbon intensity of gas. However, it's important to bear in mind two things:

- Carbon intensity is expressed as an annual figure. In the winter, when space heat demand is at its highest and the UK's solar fleet is all but inactive, the electrical power required to run your heat pump is more likely to be met, at least in part, by fossil fuels.
- The performance of an air source heat pump drops markedly in winter, and all pumps are less efficient when providing DHW – which as mentioned earlier, can represent a high percentage of the total heat demand in a new, well-insulated house.

So if you're off the grid, heat pumps are a fit-and-forget option and generally less work than biomass boilers – coming in higher in carbon emissions, and similar in running costs. They are also eligible for the RHI (find out more at www.self-build.co.uk/rhi).

Solar thermal panels

These can of course be used to provide hot water when it's warm enough (about half the year) and

NIBE's F2040 8kW air source heat pump comes in a compact design (www.nibe.co.uk)



can be combined with standard gas boilers (not combis), heat pumps or biomass boilers. They operate on the basis of stored hot water, which has the advantage that more than one shower or tap can be used at full pressure at the same time – which you don't get with a combi boiler.

Going fabric first

If you're self building, you have the chance to reduce heat loss to an absolute minimum. According to Build It magazine expert Nigel Griffiths, the best solution for a comfortable, efficient living environment is to build in such a way that a house requires as little heating as possible. "You can actually achieve levels of airtightness and insulation that are so high, you can rely on the warmth generated from normal occupation (ie from our bodies, cooking, lighting etc) to maintain a pleasant temperature in your home," he says. "In this scenario, the provision of fresh air becomes a significant source of heat loss –so you'd install a suitable mechanical ventilation and heat recovery (MVHR) system to recover that warmth. However, you'll still need to provide domestic hot water."

Relatively few of us will be self building to Passivhaus or similar ultra low-energy standards, however, so specifying the right heat source becomes a critical choice. "I always advise looking at a gas-fed boiler, as this can be a cost-effective and surprisingly low-carbon option," Nigel says. "But if your property is off the grid or you want to fulfil demand with a renewable heat source, there are a couple of strong contenders to consider. As a rule, the best route is to look at a biomass boiler or heat pump to deal with the basics, and supplement these with solar thermal panels for your hot water."

Electrics & lighting: the basics

Find out how to connect your home to power and get your electrical and lighting installations sorted

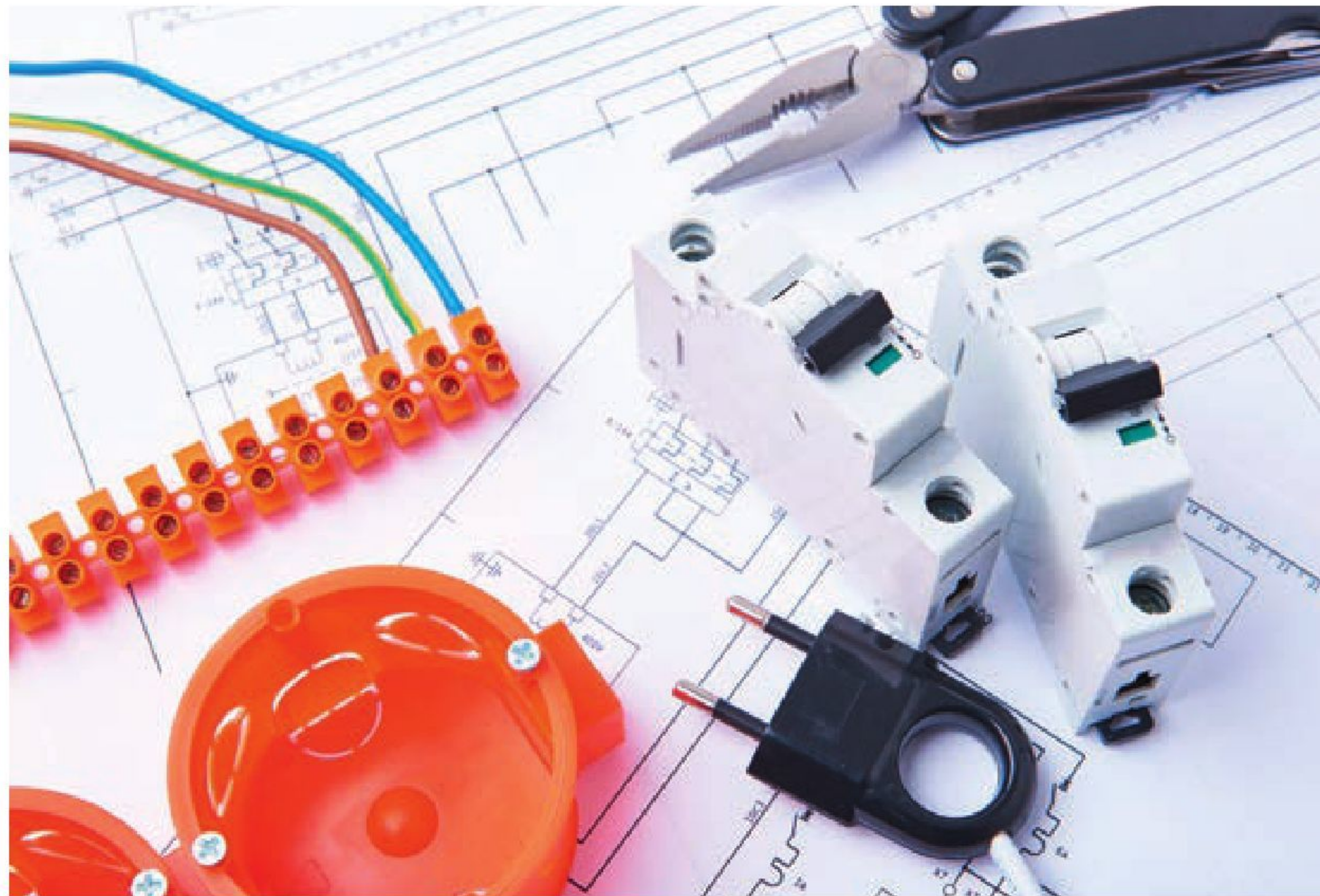
Pretty much every self build home needs a mains electricity supply to provide the power and lighting modern lifestyles demand. Even if you're planning to install solar photovoltaic (PV) panels backed up with the latest battery technology, you're unlikely to be able to go completely off-grid. So here's the basics to help you get connected and plan your installation.

Getting power on site

The supply of electricity to individual properties is handled by a number of distribution network operators (DNOs) across the country. All of them, regardless of region, are legally bound to provide new supply services at fair market prices within acceptable timeframes. So the first thing to do is get in touch with your relevant DNO and submit their application form.

One of their engineers will then undertake a site survey and determine what needs to be done. They will then give you a quote that's valid for 90 days, with payment due upfront should you accept it. So most self builders only proceed once they're confident about their construction timetable. If the quote expires, you'll need to reapply. Once you've accepted the quote, the works must be completed within 12 months – but in practice you'll be asked to nominate your preferred dates. Typical lead times are around eight to 10 weeks.

If you plan to knock down an existing structure to make way for the new house, the work will involve terminating the existing meter and fitting a temporary supply elsewhere on the site. This should be somewhere out of the way, yet fully accessible, so that trades have access to power during the build. Once the house is complete, this will need to be re-routed to a permanent meter.



With serviced self build sites, the power is usually brought into a utilities box that you can access during the works. But bear in mind you'll still need to arrange bringing the electricity into the house, via a suitable consumer unit. This can be done via an accredited contractor.

If there's no existing mains supply, speak to the DNO as early as possible to get cost clarity. They'll need to assess the best way to get a supply to site. Very rural locations might involve extensive trenches or new telegraph poles, and this is where the biggest price hikes tend to be. Going to the DNO early means you can at least try to reflect excessive costs in your offer for the plot.

As part of the connection process, the DNO will provide you with a Meter Point Administration

10 key considerations

A full electrical installation includes much more than power and lighting circuits. Some of the elements self builders often forget to account for before calling in quotes include:

- Making sure the consumer unit is in an accessible location.
- Provision of TV aerials & outlets.
- Data cable for audio-visual.
- Accommodating hidden speaker wiring.
- Locations for smoke and heat detectors.
- Installation of security alarms.
- Supplies for electric underfloor heating and ventilation systems.
- Dedicated supplies are needed for high-load appliances (such as cookers, immersion heaters and electric showers).
- Lighting in wet zones must conform to special requirements, while power is usually limited to low-voltage shaver sockets.
- External power and lighting.

Getting the work done

You'll need your electricians on site in two main chunks: at first fix stage (once the house is weathertight, but before the plasterboard goes on) to do the infrastructure works; and then again at second fix to fit faceplates, light fittings and commission the setup.

As a rough guide, you can expect them on site for around two weeks for first fix; and another two for second and final commissioning. Your payment terms will usually fall in line with those, with the final balance due when certification is achieved.

Coordinating their time on site with other trades, and ensuring each party is communicating, is vital. You don't want cables running where the ventilation ducting is supposed to be, for instance. And the electrician will need to engage with the likes of your plumber to cross bond and earth pipework; and the plasters to ensure backboxes and recesses for light fittings are accommodated.



Above right:
Using a variety
of light sources
will help to zone
areas in open-
plan spaces.
This design
is by Brilliant
Lighting (www.brilliantlighting.co.uk)

Number (MPAN). You'll need this to deal with your chosen energy provider (the company that will be billing you for use going forward). This is also the firm that will fit the meter itself.

Electrical design

A single-phase supply will be sufficient to meet the anticipated demand from most new homes; but your electrician can help you calculate this. If the requirement is higher than standard, then you may need a three-phase setup.

Most self builders will work with their architect or house designer in order to identify their basic requirements for sockets, kitchen appliances, light fittings and other outlets (see the box on page 71 for the areas that often get forgotten). The installation of household electrics is governed by Part P of the Building Regs, which dictate that you must have the work carried out by a qualified electrician. The most straightforward route to compliance is to engage a Part P registered professional who can self-certify their work.

The key things that affect the budget will be the number of lighting and socket points. It's

a good idea to mark up your plans with your requirements and produce a schedule of what needs to be included. This will enable your potential electrician or main contractor to quote accurately, rather than using provisional sums that end up rising later as you add more outlets.

If you're planning to integrate smart home technology, now is the time to involve a specialist. The wiring topology for this kind of installation is completely different to standard electrics – so it's always best to work with a dedicated home automation company. Many self builders are moving down this route, and it looks set to become the new normal over the next five years.

Planning your lighting

Good lighting can transform a house into a home, but getting the balance right can be difficult. Open-plan kitchen-living areas are likely to be used differently at different times of the day, for instance, and the lighting design will need to respond to that with a suitable mix of ambient, task and access fittings. Crucially, these also need to be easy to control.

The best way to get it right is to seek advice early on, so the design for each room can be carefully considered before you're surrounded by the chaos of a building site. Even in a fairly conventional four-bedroom house, you're likely to need in excess of 100 light fittings – and potentially 25 or more switches (if you're going for a traditional electrical installation). And that's before you get onto considerations such as which lights should dim; how to highlight key architectural features; and what colour of light (should it be warm or cool?) will work best with your other interior design choices.

What are the connection costs?

There's no standard price for getting power onto a building plot. Average costs are often banded about at around £1,500 or so – but in reality, this is just a provisional sum and all new connections must be individually priced, for the reasons described earlier. One critical issue that can lead to delays and therefore extra costs will be your project timetable: generally, it's best to allow a four-month period from the point of submitting your application to getting a supply (temporary or permanent) on site.

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Smart tech basics

It's becoming commonplace in our homes, so plan your smart technology early to get the most out of your setup

Smart home technology is a diverse area and the number of gadgets available is growing day-by-day, whether they're aimed at enhancing your lifestyle, saving money or improving security. But the best examples all have one thing in common: they do their job in a way that can be easily integrated into your routine, often without you having to even lift a finger to swipe a screen.

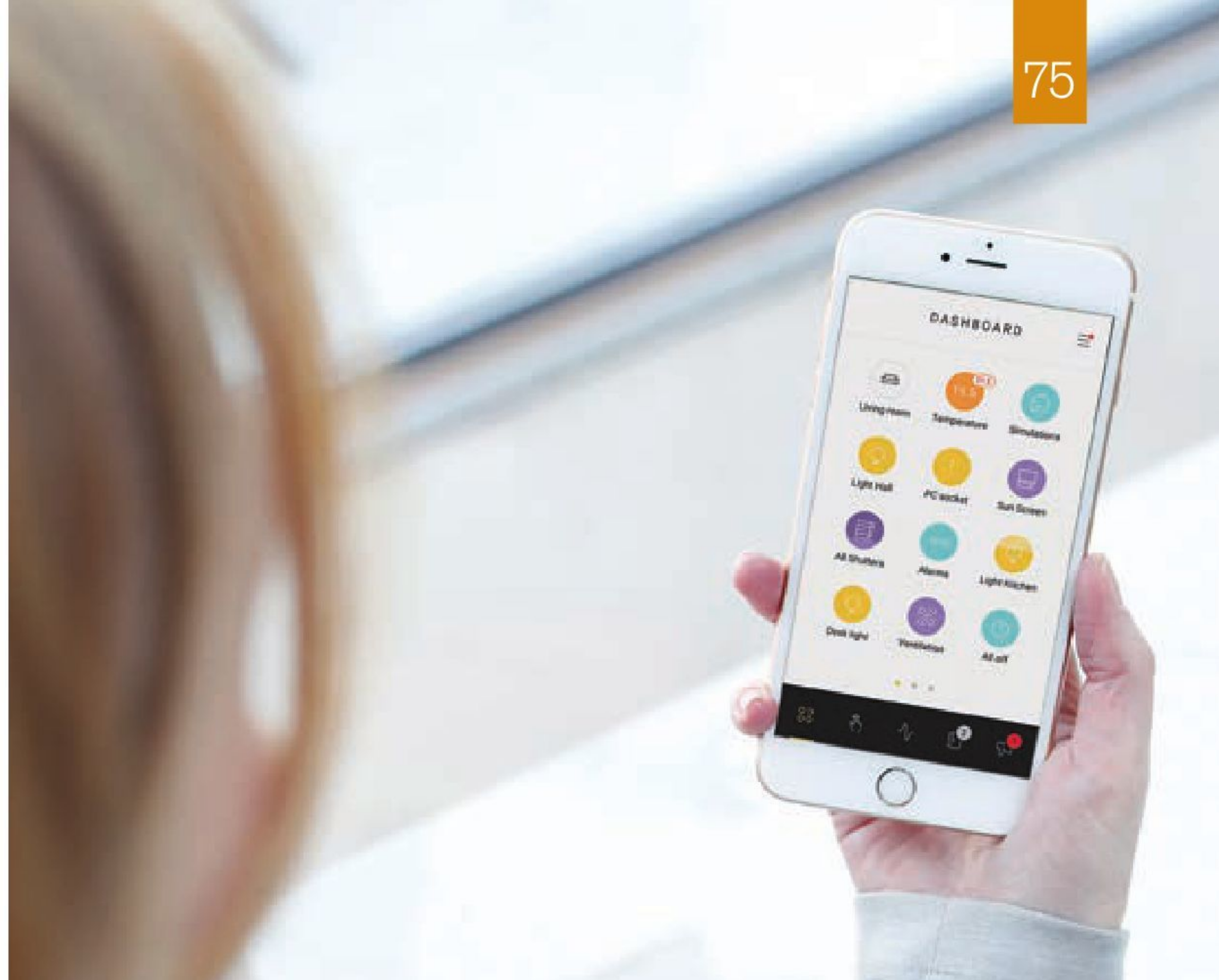
"There are isolated benefits, such as intelligent thermostats that can help cut your bills or clever locks so you can open the door to someone from afar," says Philipp Schuster from Loxone (www.loxone.com). "But a real smart home makes life easier and gives you more free time. If you have to get out your phone and open several apps every time you want to adjust a setting, you might live in a connected home, but it certainly isn't smart."

Wouldn't it be nice, for instance, if when you locked the front door on leaving the house, all the lights turned off and the underfloor heating dropped down to an energy-saving background temperature? What about if emergency lighting were to switch on when the smoke alarm trips? Or perhaps, when you pop into the ensuite at two in the morning, your home was intelligent enough to know the system should only come up to 10% brightness to avoid dazzling you, and to suppress the fan so you don't wake up your partner?

All of these things – and more – are possible with modern smart technology, as long as the setup is carefully designed and realised from an early stage. "If you want to get a smart home right, you need to do three things: plan early, be realistic with your budget and put the infrastructure in properly," says Andy Moss from Moss Technical (www.homecontrol.uk.com). "If you succeed with all three, you'll have a future-ready abode."

Planning your setup

If you've gone for a fully-integrated smart home, the brains behind it will be the rack in your plant



room – connected back via the core cabling, which must be of the right spec. This is where compatibility and good design come in. It's all very well being wowed by different manufacturers' products and apps, but you need to work with your technology installer to ensure it will fit seamlessly with the overall setup.

Phones are okay for occasional use, such as when you're away from home or out in the garden, but clunky for whole-house control. The ideal route forward is to work with your integrator to select the best interfaces for each room. But if you start removing light switches and other easy ways to interact with your property in favour of app control, you're probably overdoing things.

Above: Moss Technical's Niko home control can integrate with pretty much every system in your home, including the heating

Smart tech elements

Heating Having complete control over your heating and hot water setup could mean maximising efficiency and lowering bills.

Lighting Change the ambience in a room at the click of a button thanks to carefully planned layered lighting and pre-set schemes.

Security Sensors, cameras and access can all be controlled remotely to keep your home as safe and secure as possible.

Audio-visual Cinema-quality television experiences, integrated speakers playing the same music in your kitchen and garden – it's all possible with the right AV setup.

The ability to interact with your house simply by speaking to it used to be the stuff of sci-fi TV shows; but the likes of Alexa are giving us a taste of the future. While we won't be chucking out our keypads and switches any time soon, voice tech is coming on leaps and bounds. It complements tactile controls, and makes a lot of sense for some users. "It's particularly good for assisted living, especially given our ageing population," says Andy.

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Finishing your project

Before you start unpacking, there are a few last checks needed to make sure that everything is as it should be

When all your hard work has finally paid off and you're approaching the end of your self build journey, it's hugely exciting to be at the stage where you can start planning your move in. But before you do, you'll need to dot the i's and cross the t's. This means making certain that all the necessary steps have been taken to secure what's known as formal completion – as well as putting measures in place to check your new property's been finished to a standard that you're happy with.

Final certificates

Formal completion basically means receiving sign-off from your local authority to confirm that your project accords with the planning consent, the house is safe and meets the minimum standards laid out in the Building Regulations. Typically, your main contractor, surveyor, project manager or package house supplier will sign off the property and apply to the local authority for a completion certificate. If you've project managed the scheme yourself, then you're responsible for arranging this.

The completion certificate is the single most important document you'll be issued with over the course of your scheme. This is the official written record showing the house has been built and finished to a satisfactory standard – so you should lodge a copy of it with your solicitor. It's also the trigger that allows you to apply for a VAT reclaim.

It is possible to move in before the house is 100% finished. To do this, you'll usually need to arrange an inspection with building control to get a habitation or temporary occupancy certificate that confirms the basics (hot water, toilets etc) are in place and the house is a safe place to live in. This will bridge the gap until you receive your formal completion certificate.

You'll collect a number of other important documents during your project, all of which should be filed for safekeeping. These will include various



benchmark certificates (showing that domestic heating appliances meet the required standards) and final safety certificates from the Part P registered trades (eg for electrics). You'll also need an Energy Performance Certificate (EPC), which details how efficient the house is.

Above: Caroline Buckingham self built a new contemporary home on the Isle of Wight

Snagging

A self build is by definition a bespoke item, with a greater or lesser degree of hand building and finishing involved according to the structural system you've selected. As a result, there will undoubtedly be small defects that need sorting out along the way. If you or your project manager stays on top of things, most of these issues should be resolved as work progresses.

There will always be some minor elements – known as snags – identified as the build reaches its conclusion. This might include things like unfinished edges, sticking windows, poorly hung doors and paint splashes. Snagging is the process of getting your builder to rectify these outstanding glitches at the end of the project.

Snagging basics The key to success is to have a comprehensive list of all the things that need

Snagging checklist

You'll probably have a good handle on the main niggles around your new property from having regularly visited the site. Once everything is in place and finished, the trick is to collate any queries or comments into a room-by-room checklist. Your architect or designer may be willing to help, or you can find a number of free snagging templates by searching online.

Here are a few key areas to get you started:

EXTERIOR

- Claddings and finishes: neat, clean and aligned
- Gutters: secure, with no gaps between the fascia and the gutter
- Gulleys and drains: water flows correctly
- Outdoor lights: sealed and working
- Turf: evenly laid, no gaps
- Patios/decking: stable and level
- Fencing and gates: correctly fixed and functional
- Garage doors: working and secure

GENERAL

- Walls and ceilings: evenly painted, free from blemishes and neatly finished at covings
- Doors/windows: open, close and lock smoothly
- Mouldings: well-fitted with no gaps
- Floor coverings: properly installed
- Staircases: no gaps or creaks, plus the balusters are secure
- Loft: access hatch operates well
- Take meter readings

HEATING & ELECTRICS

- Power sockets: properly seated and working
- Light switches and fittings: operating with correct polarity
- Heating system: functional, with all controls and emitters performing properly
- Fireplaces/stoves: well-fitted and flues working

KITCHEN

- Cooker, hood and appliances: working and undamaged
- Sinks and taps: operating with no leaks
- Cupboards and drawers: well-fitted, plus able to open smoothly
- Worktops: level and unmarked, with neat joints

BATHROOM

- Sanitaryware: well-fitted, secure and silicone sealed; no chips
- Toilets, showers, basins and taps: functioning with no leaks
- Bath panels and enclosures: fitted and aligned
- Tiling: level, evenly spaced and properly grouted
- Extractor fans: working
- External power and lighting

sorting out before you settle the final bill. Most self builders will hold back 2.5%-5% of the agreed contract price to cover snags. This is an accepted part of the industry, but the retention needs to be pre-written into your contract with the builder – as with the small works agreements available from the likes of the Joint Contracts Tribunal (JCT).

As an example, say you've signed up to a £300,000 package with your builder to take the project from groundworks to completion – in this case, a 5% retention for snagging would equate to £15,000. The idea is that this should be enough of an incentive for the builder to come back and sort out issues, usually within a six month liability period. The upshot is that they get their money and you get what you paid for – everyone is happy.

If, for whatever reason, they don't finish the work to your satisfaction, you'll have a lump sum in the bank to pay someone else to remedy the situation – or you could net a little windfall by sorting it out yourself. Bear in mind that if you've project managed the build yourself and hired individual trades, then you'll need to negotiate the snagging process with each one. Exactly when that happens – and who is responsible for certain faults – can be up for debate, especially if something has suffered minor damage after it's been installed.

Checking the work Your snagging inspection should take place at an agreed date after the completion certificate has been issued. At this point, you know the house already meets the Building Regulations, so there shouldn't be any major issues to address. Usually, the process takes the form of a walkaround with your contractor – with both parties taking notes of defects as they go. It typically takes a couple of hours for a three-bedroom house. If possible, it's good to have your architect or designer in tow as they may be able to help negotiate any contentious points.

Remember that this is your chance to have genuine faults corrected – it should not be viewed as a means to get the builder to do more work free of charge. This means that if they've followed the drawings for elements such as light switch positions, door hanging etc and you change your mind, you'll have to pay a fair rate for the job.

One of the issues around snagging can be subjectivity: what might be permissible in the eyes of your builder might not match up to your own ideal. Industry standards aren't exactly tight when it comes to things like how level plaster should be. The best way to overcome this kind of problem is to ensure your quality expectations are fully mapped out and agreed in the original contract.



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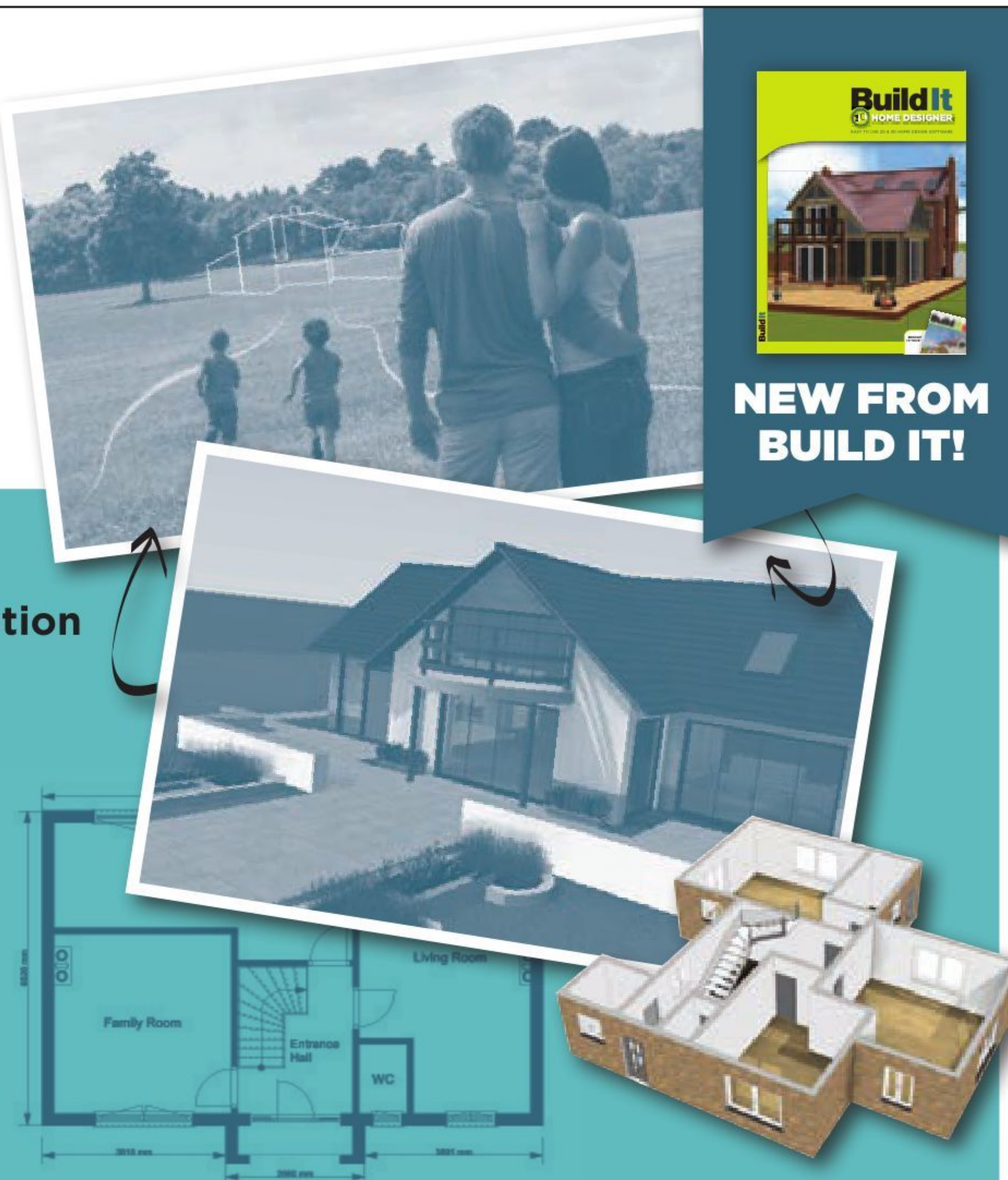


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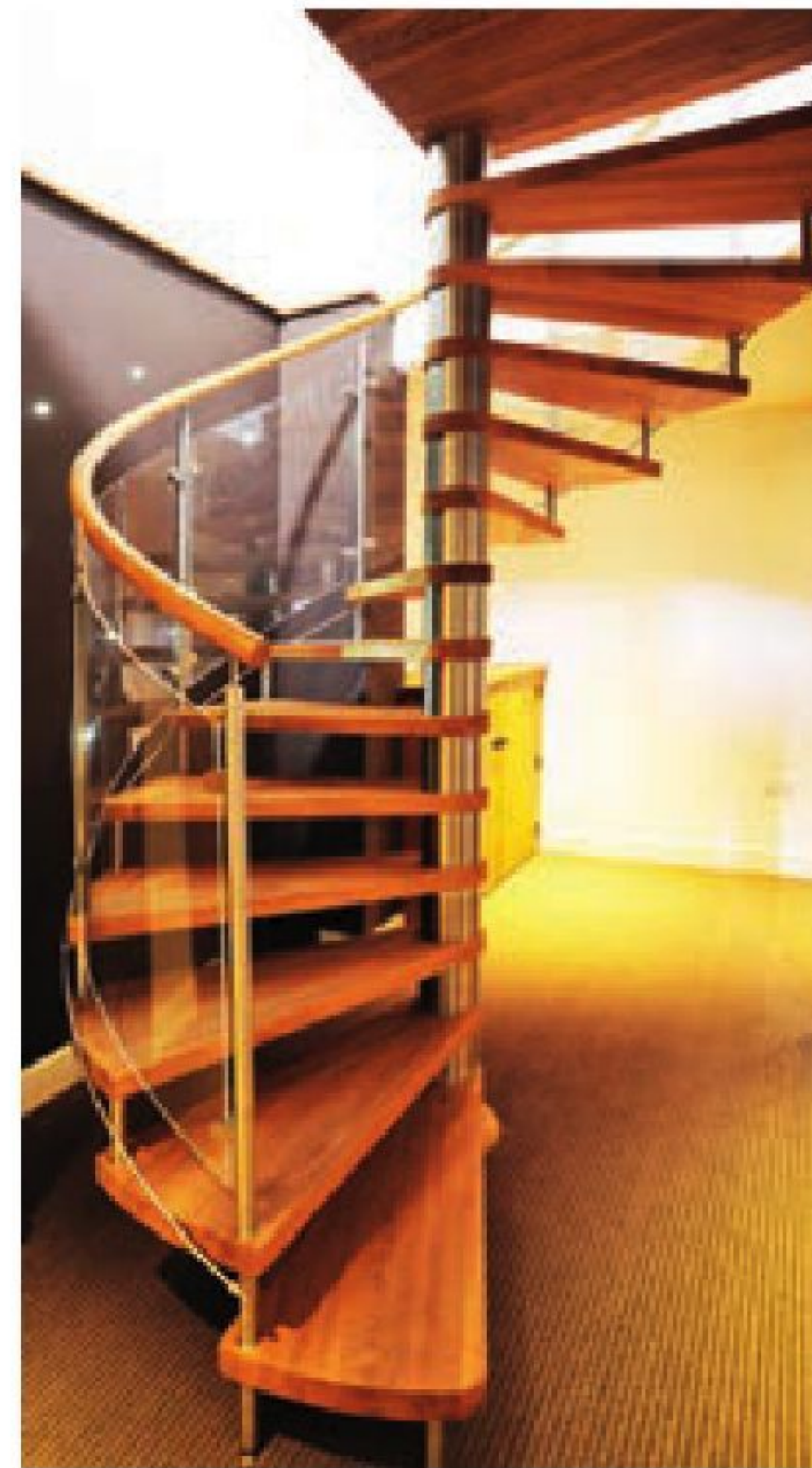
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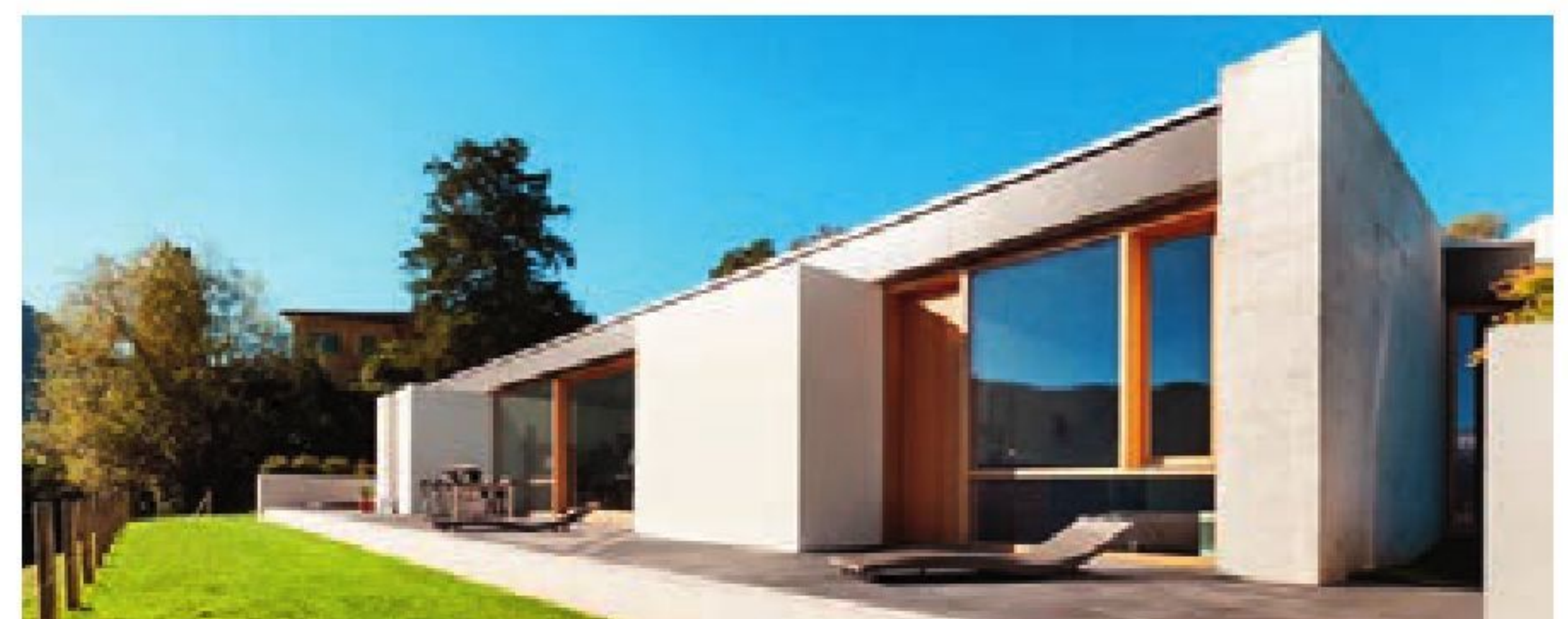
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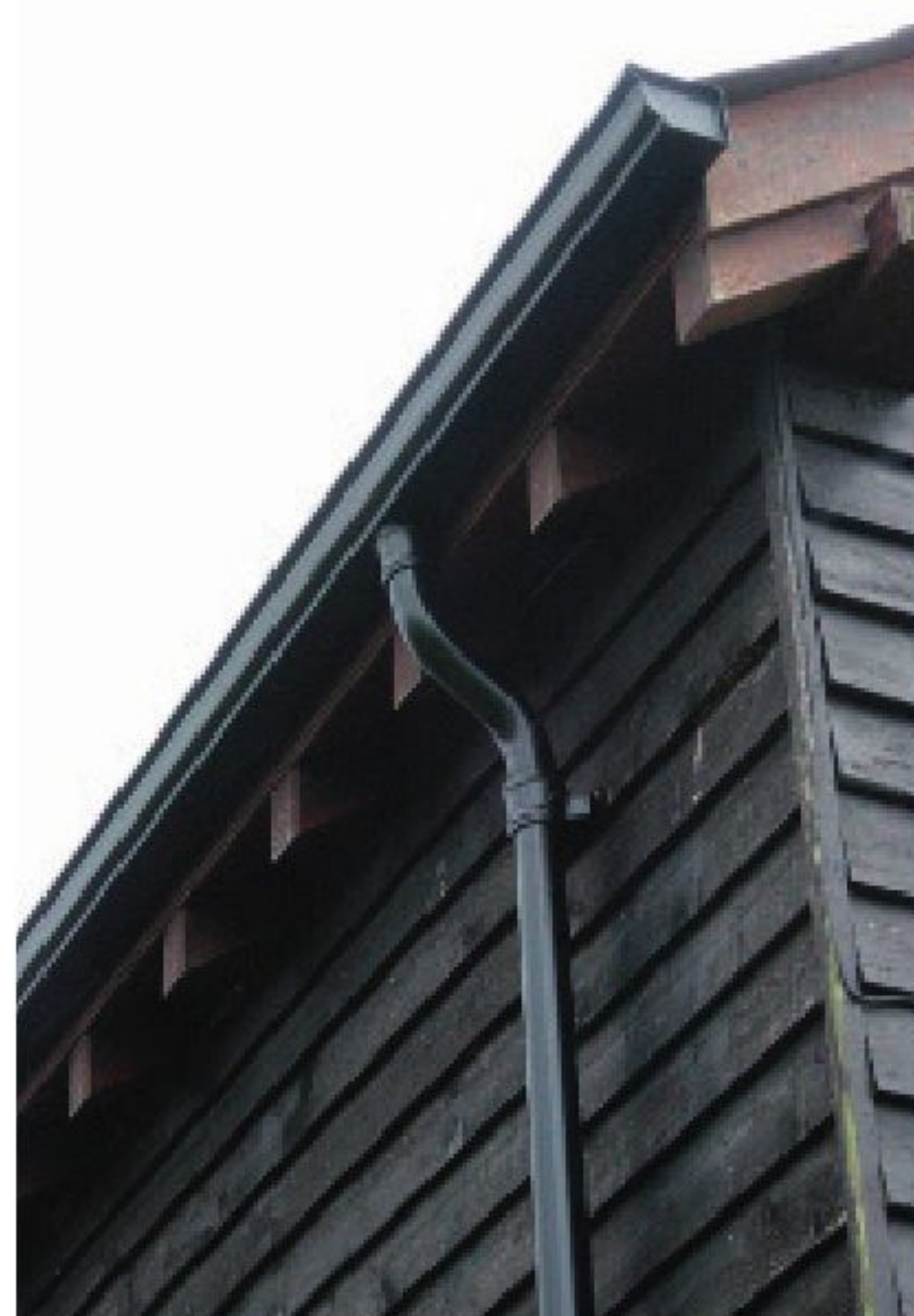


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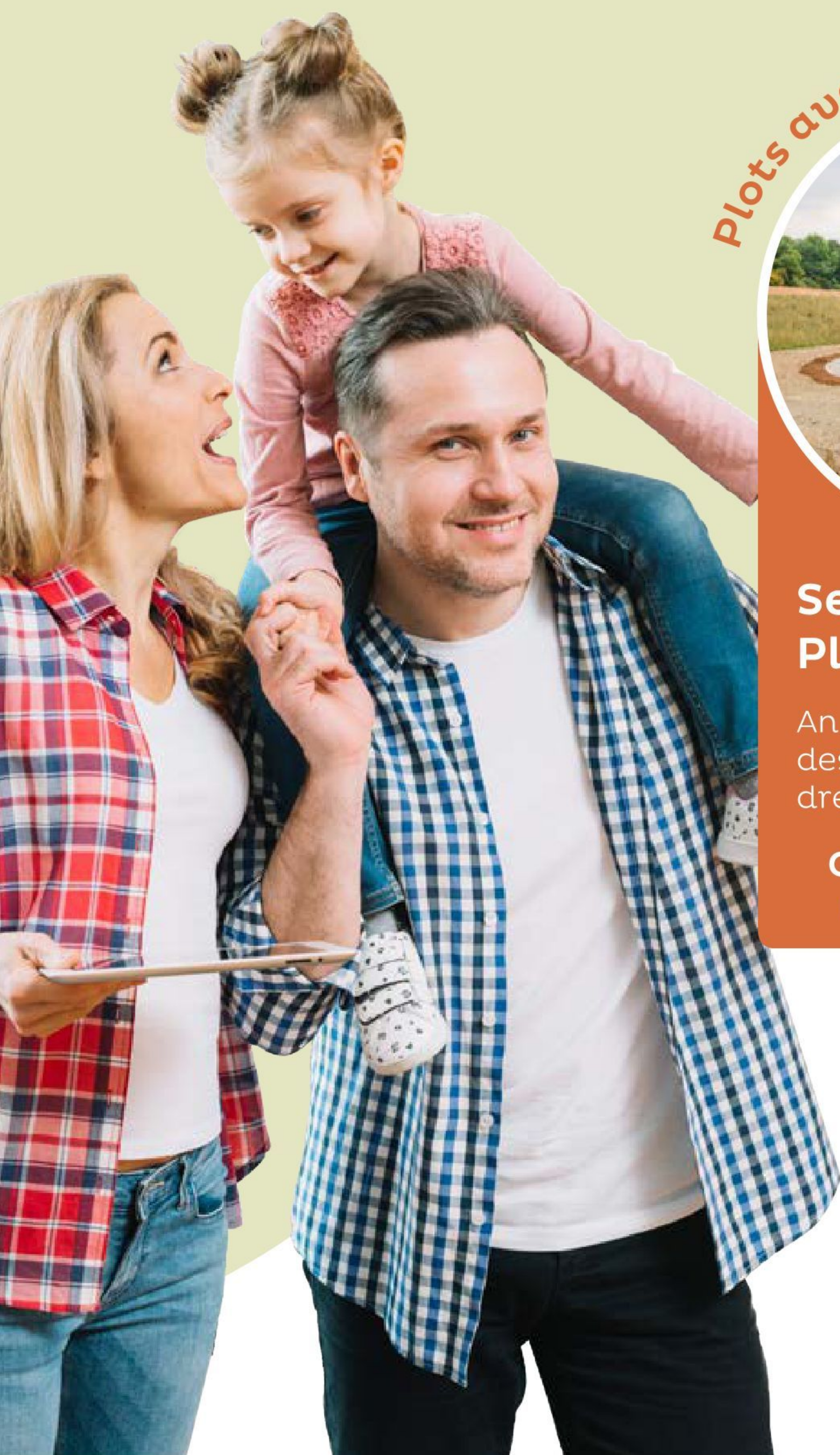
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