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Welcome...

It's not every day that a feel-good story is splashed all over the news, but that's exactly what a humble cottage in Co Galway managed to do when it burned down and an entire community came together to rebuild it in true meithal style.

The result is a four-week self-build using traditional blockwork construction – see page 70 for our version of events.

Still no news unfortunately on the locals only front; a planning restriction self-builders in ROI have been coming up against in rural areas. The Department of Housing press office told us that no meetings were scheduled for the working group "at present due to other pressing business commitments". But fear not, the meetings will resume "as soon as possible". We've been waiting over a decade at this stage (see what fellow self-builders have to say about it on page 128).

And for those who haven't heard yet, we're excited to announce the launch of The Selfbuild Podcast which showcases expert advice and self-build experiences from homeowners. You can listen on iTunes, Spotify or Soundcloud. See page 129 for more details.

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Astrid

Astrid Madsen - Editor
astrid.madsen@selfbuild.ie

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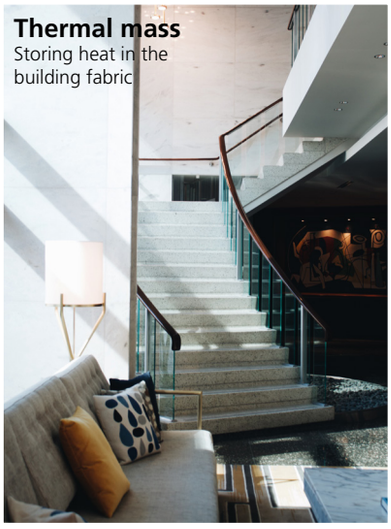
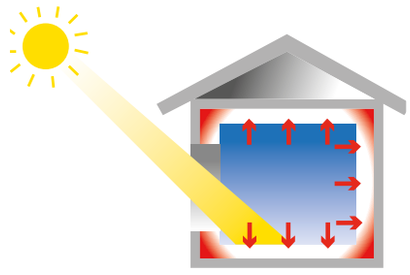
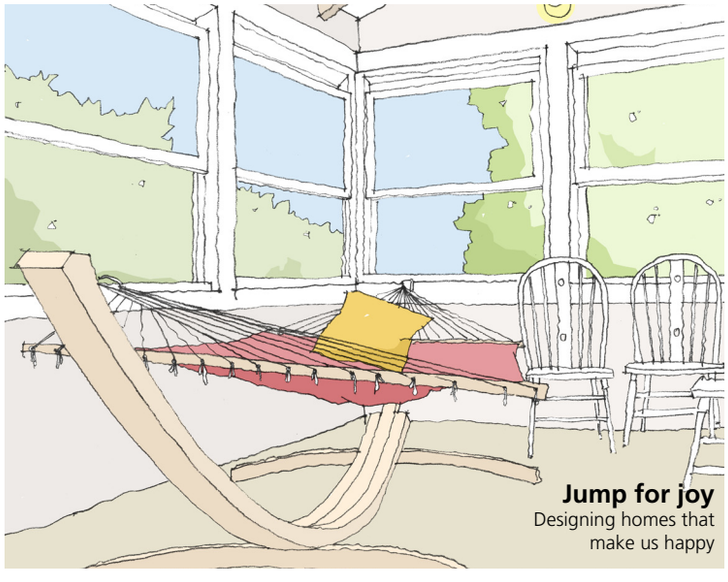


Thermal mass
Storing heat in the building fabric

Overheating
Homes built nowadays can get uncomfortably hot



Garden pods
The millennial alternative to the humble shed



Jump for joy
Designing homes that make us happy

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SELFBUILD: THE ALL-IRELAND
All articles equally cover the 32 counties; when we refer to the Republic of Ireland the abbreviation is ROI. For Northern Ireland it's NI.

Contributors

Peter Bonsall

Peter is an engineer working in the timber and renewable energy sectors.

Dave Brown

Dave is a Value Added Tax expert based in Devon, UK.
davebrownvat.com / tel. 01626 361140

Patrick Daly

Patrick is a lecturer in the School of Architecture at the Technical University of Dublin where he specialises in teaching low energy building design.
pd@patrickdaly.net / patrick.daly@dit.ie

Vivienne Hanna

Vivienne project managed her own family build and has been repurposing furniture for over 30 years. She is a busy mum who also offers self-build advice, specialising in cost effective interior solutions.
facebook.com/brocantebelfast

Thomas Holden

Tom is Roadstone's National Technical Manager, Concrete Products.
roadstone.ie

Keith Kelliher

Keith is a quantity surveyor with over 20 years' experience and is the founder of Kelliher & Associates Quantity Surveyors.
quantitysurveyor.ie

Marion McGarry

Dr Marion McGarry is an author, historian, part-time Galway Mayo Insititute of Technology lecturer and freelance illustrator. She is the author of The Irish Cottage published by Orpen Press.
@marion_mcgarry

Rob McOwan

Rob is a financial advisor based in Dublin.
financialexperts.ie / mobile 0868961223
twitter @robmcowan

Leslie O'Donnell

Les is an engineer and architectural designer who runs Landmark Designs, a CIAT registered practice in Co Tyrone.
landmarkdesigns.org.uk /
NI tel. 8224 1831

Fiann Ó Nualláin

Award winning garden designer, author and broadcaster, Fiann has a background in fine art, ethnobotany and complementary medicine.
theholisticgardener.com /
@HolisticG

Debbie Orme

Debbie is a freelance writer and editor, who writes about business, healthcare, property, maternity and the over 50s. She also ghost writes autobiographies.
debbie.orme@talk21.com /
NI mobile 077 393 56915

Marcus Patton

Marcus is torn between being an illustrator, an architect, an historian and a musician.

John Scanlon

John Scanlon BSc (Hons) MCIAT MCABE is the director of JS Design - Architectural Solutions specialising in residential architecture, both new build and renovation.
jsdesign.ie / mobile 087 2037 237

Andrew Stanway

Andrew is a project manager with over 30 years' experience. He is also a writer and the author of Managing Your Build published by Stobart Davies.

Come meet more experts at our Selfbuild Live event in Dublin in September
Turn to page 86 for more details and FREE tickets

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Published by SelfBuild Ireland Ltd. 119 Cahard Rd, Saintfield, Co Down BT24 7LA.
Tel: (NI 028 / ROI 048) 9751 0570 / Fax: (NI 028 / ROI 048) 9751 0576 info@selfbuild.ie / selfbuild.ie

Cover Photo
Grant Ritchie for Unique Home Stays
grantritchie.co

Editor
Astrid Madsen
astrid.madsen@selfbuild.ie

Design
Myles McCann
myles.mccann@selfbuild.ie
Shannon Quinn
shannon.quinn@selfbuild.ie

Marketing
Calum Lennon
calum.lennon@selfbuild.ie

Subscriptions
Becca.Wilgar
becca.wilgar@selfbuild.ie

Business Development Manager
Niamh Boyle
niamh.boyle@selfbuild.ie

Advertising Sales
David Corry
david.corry@selfbuild.ie
Nicola Delacour-Dunne
nicola.delacour@selfbuild.ie
Lisa Killen
lisa.killen@selfbuild.ie
Maria Varela
maria.varela@selfbuild.ie

Accounts
Karen Kelly
karen.kelly@selfbuild.ie

Sales Director
Mark Duffin
mark.duffin@selfbuild.ie

Managing Director
Brian Corry
brian.corry@selfbuild.ie

Chairman
Clive Corry
clive.corry@selfbuild.ie

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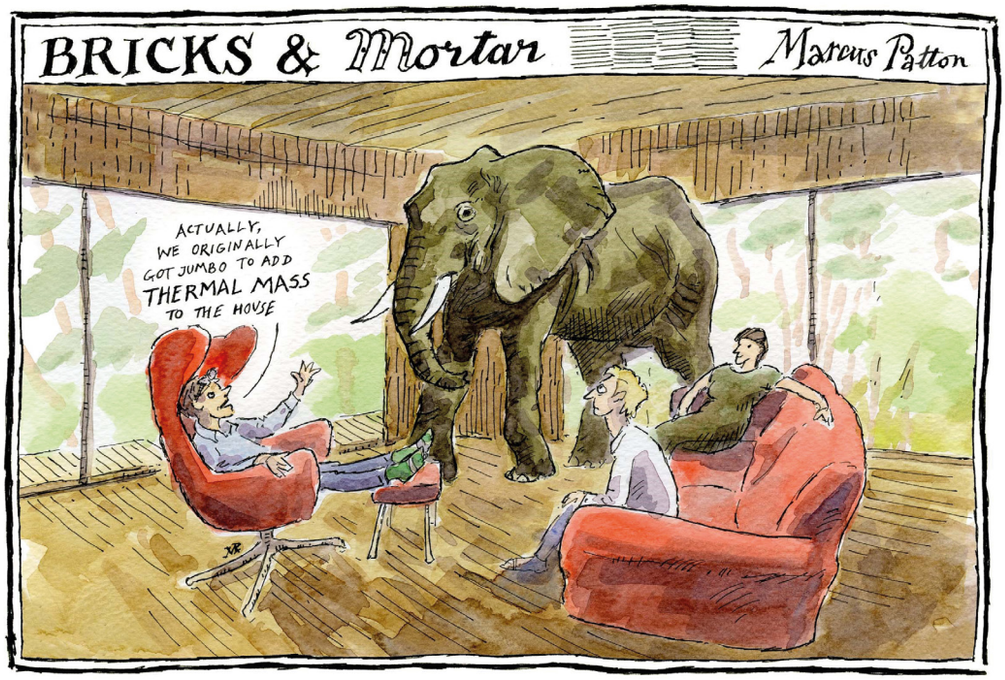
NI budget brings rates increase

Domestic rates are increasing for inflation plus 3 per cent in NI, according to the NI Budget for 2019/2020 published in March and introduced by the UK's Northern Ireland Office (in the absence of local ministers). You can receive a 4 per cent discount if you pay your bill in full on or before 10th May 2019.

Slow on the uptake

After many years debating which financial incentives would help homeowners carry out energy upgrades in ROI, Selfbuild has learned that while the Sustainable Energy Authority of Ireland (SEAI) is continuing to pilot financing models to help homeowners pay for expensive home improvement work, there are still no plans to introduce tangible measures in the near future.

There have been small trials, with around 260 homes retrofitted in total, but the SEAI is not committing to any of the funding models it has trialled. The most appealing, the SEAI says, is the 'one stop shop' approach. An example is Superhomes, a scheme administered by the non-profit Tipperary Energy Agency that does the energy assessments, paperwork for grants, appoints the contractors and oversees the work.



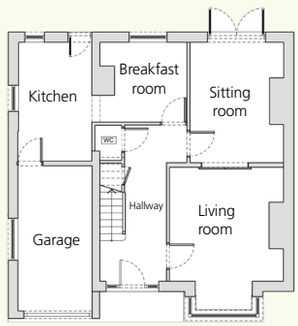
The physics behind thermal mass on page 92

Two-up two-down redefined

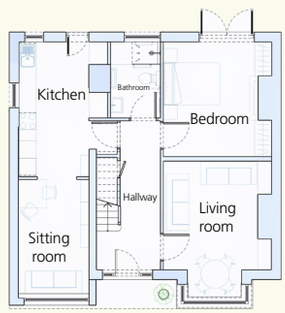
The idea to split the homes of older residents to allow them to rent the upper storey, and adapt the ground floor, was the brainchild of Michelle Moore who set up non-profit **Ava housing**, formerly known as the Abhaile project. The first renovation took eight weeks to complete without the need for planning permission at a cost of €62,000; the building work finished in November 2018 and the upstairs tenant moved in February of this year. Ava Housing has funding from the Department of Housing to renovate five more homes this year in Dublin, with hopes to expand the scheme nationwide.

To express your interest or find out more go to **avahousing.ie**

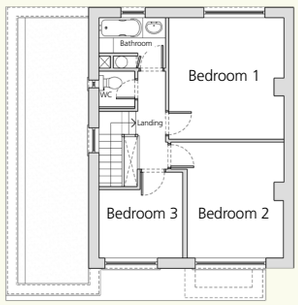
Ava Housing founder Michelle Moore with directors Ciarán Ferrie and Dermot Bannon



Original Ground Floor Plan



New Ground Floor Plan



Original First Floor Plan

New First Floor Plan

November date for **NZEB**

The new ROI energy regulations in the form of **Part L (energy)** and **Part F (ventilation)** are to come into force in **November** with a transitional arrangement for those who get planning permission on or before the 31st of October 2019

The new building regulations are expected to be signed into law on April 19th, Sean Armstrong of the Department of Housing announced at the SEAI Energy Show in March.

The new rules will apply to all **newly built homes** and all homeowners that get **work done on more than 25 per cent of their house** as of the 1st of November 2019.

For those who are granted planning permission before this date, work can be carried out to current Part L and Part F regulations (2011 and 2009 editions respectively) but work will have to be substantially complete, up to wall plate level, within a year.

The building regulations will require that all newly built homes are near zero energy; this will mean more insulation and airtightness measures along with better controls in installing mechanical ventilation systems. Armstrong told delegates at the Energy Show that 40 per cent of all new builds now install mechanical ventilation and that not all of the installations are done "very well".

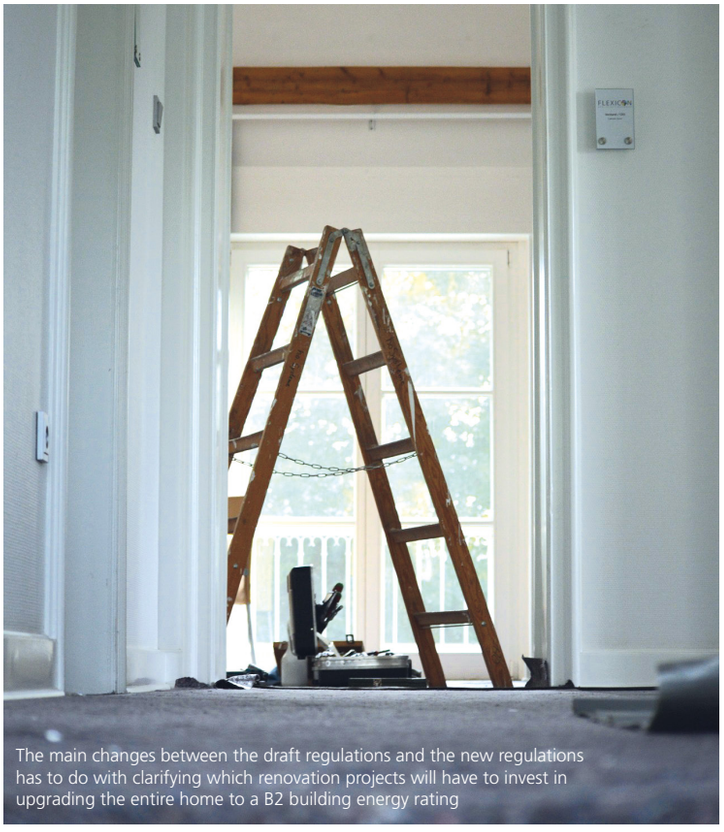
For existing houses if you do up more than 25 per cent of your home you will have to **renovate the entire house to a B2 Building Energy Rating standard** (125kWh/sqm/yr) or follow a suite of measures which include replacing the boiler. Anyone who builds a new house, or who sells or rents one, must currently get a Building Energy Rating done to show how well it performs in terms of energy. The rating is on an A to G scale, A being the best.

The B2 threshold for major renovations, flagged by the department for years, is based on "cost optimal" calculations by consulting firm Aecom; this is the threshold at which the department says it remains affordable to do the work for noticeable gains in energy bills and comfort.

The calculations continue to show the cheapest way to comply with the building regulations when installing a heating system will be gas and photovoltaic panels; when aiming for the highest levels of energy efficiency the heat pump becomes more cost optimal. The next set of cost optimal calculations is to take place in 2023.

'The building regulations will require that all newly built homes are near zero energy; this will mean more insulation and airtightness measures...'

As for fears that the new building regulations would add a lot to the cost of house building, especially at a time when there's a tight housing stock, consultancy work by Aecom in September 2018 shows on average a 1.9 per cent difference in cost between building a new house to the NZEB standard versus to the regulations that are currently applicable.



The main changes between the draft regulations and the new regulations has to do with clarifying which renovation projects will have to invest in upgrading the entire home to a B2 building energy rating

The final versions of Parts L and F weren't published as Selfbuild went to print, but according to Armstrong there aren't any substantial changes to what was published in the draft regulations last year.

The main change has to do with the addition of two tables to give examples and to further explain what 25 per cent of the surface area of a dwelling means. In other words, provide guidance so that designers know which renovation or extension projects will have to invest in a B2 upgrade.

For instance all homes that carry out an external wall insulation upgrade will have to comply with the regulations and upgrade the entire dwelling to a B2. Same if you're replacing your floor or roof, but if you just change your roof covering there is no statutory need to carry out the B2 upgrade.

Some of the participants voiced concerns that the 25 per cent rule would be hard to police but there are no plans to change the building control structure to enforce the regulations. The good news is the National Standards Authority of Ireland is further developing standards for heat pumps and for a ventilation validation scheme.

The full updated DEAP software that's used to do the calculations for Part L is expected to be released this summer.

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Contractors get the **green** light

Last year Selfbuild revealed **half of the contractors** eligible to work on the ROI grant scheme for energy upgrades in the home were **high risk.** This year that situation has been reversed.

The **Better Energy Homes grant scheme** is government funded and is administered by the Sustainable Energy Authority of Ireland (SEAI). The grants are for insulation measures, heating upgrades, and solar thermal panels.

In order to qualify for the grant you need to get an energy assessment carried out by a Building Energy Rating assessor; there are roughly 500 of these registered with the SEAI for domestic properties.

The SEAI also has a register of vetted contractors for the Better Energy grants who are subject to a **Quality Assurance Scheme and Disciplinary Procedures (QADP) system.**

Statistics from this QADP seen by Selfbuild show that about a third of contractors working on the energy grant scheme were considered high risk in 2018 (in the orange or red category), a significant fall as compared to the 2017 figure of 54 per cent.

It's on the back of **inspections** that contractors are graded on a green (good performance, low risk), yellow (medium performance, moderate risk), orange (poor performance, high risk) and red (very poor performance, very high risk) scale.

The number of contractors deregistered in 2018 was 220 as compared to 213 in 2017, and 1,585 contractors were registered as of the 18th February 2019 as compared to 1,542 the same time the previous year.

In 2018 the SEAI call centre handled close to 55,000 customer contacts (calls, email and webchat) for home energy grants as compared to 47,000 the previous year. Complaints constituted less than 0.2 per cent of all correspondence received, the same ratio as in 2017.

We've put the following questions to the SEAI about the quality assurance scheme.

Do homeowners get the inspection report on their property?
Where an inspection identifies defects requiring reworks then the contractor and homeowner are both notified.

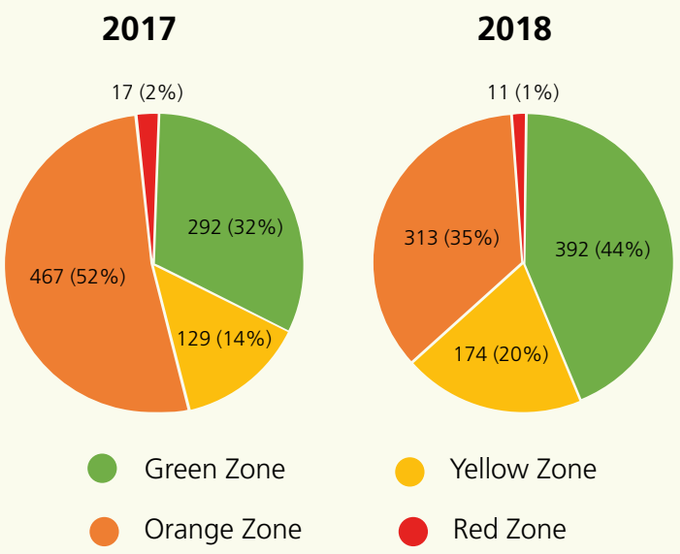
Worst case scenario, what is the remedy for a homeowner who hired a contractor off the SEAI list and is involved in the grant process but realises the job wasn't carried out correctly. What is the process in that case and who pays for the remedial work?
The contract for works is between the homeowner and contractor. SEAI always recommends that homeowners have a written contract for the works and we provide a model contract for this very purpose: seai.ie/resources/publications/Model-Contract.pdf

Where a homeowner is dissatisfied with the works then this is a matter solely for them to address with their contractor. The model contract includes terms to address such a scenario.

Are homeowners who use a contractor in the Orange or Red zone informed of the fact that their contractor is categorised as such? For homeowners who sign up to the grant scheme, are there plans to have contractor ratings published for them to access during their contractor selection process?
Homeowners are not informed. There are no plans to publish contractor ratings.

There are also grants for installing photovoltaic (PV) panels and the SEAI has a list of approved contractors but they are not part of this quality assessment scheme; is there any quality assurance system in place for them?
This is a pilot scheme, with a key objective to build the capacity and quality of the supply chain. The first stage in developing our quality assurance framework is actually defining the appropriate standards for works, which were published at scheme commencement. When grant claims first commenced in the Autumn [of 2018] we commenced inspections, with every installer's first job being inspected in what is called an accompanied inspection. These are particularly useful when we want contractors to understand the approach to inspections and for them to learn from actual quality issues identified. We will shortly migrate the PV installers to the existing QADP approach.

Performance of SEAI contractors under the Better Energy Homes scheme



Contractors in numbers

In addition to the 1,500 odd contractors on the Better Energy Homes scheme for insulation, heating controls and solar thermal panel installation, there is the heat pump list of contractors which is still in its infancy but was at the time of going to print recording 190 vetted installers. The PV pilot grant scheme has 65 contractors listed on the SEAI register.

The deep retrofit pilot grant scheme deals with contractors directly on an individual basis and there is no database.

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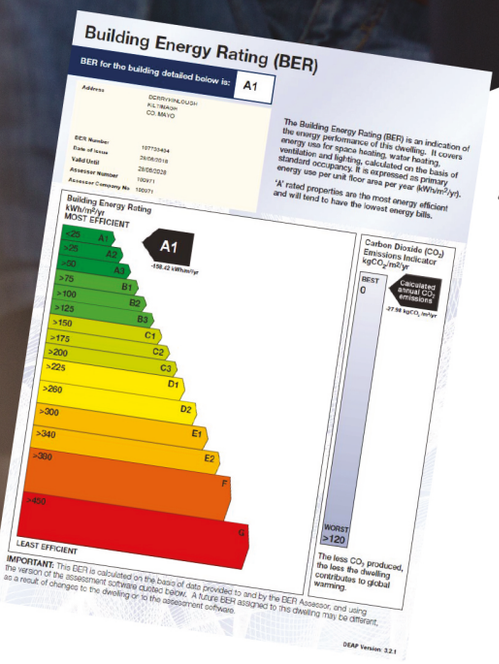

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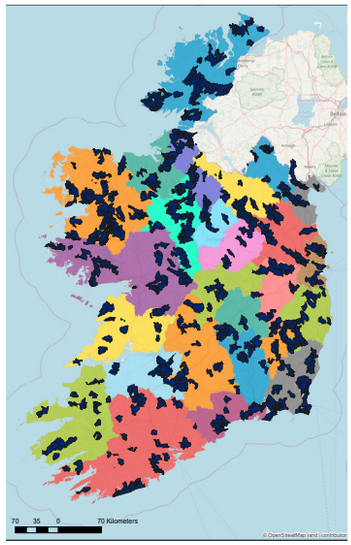
Details of new **grants** for **wells** and **septic tanks**

For those of you who are interested in getting your **septic tank** replaced in ROI, this updated high risk area map (right, also available on selfbuild.ie) will clarify which regions qualify for the extended wastewater grant scheme. In these high risk areas, in order to qualify for the grant you need to have had your septic tank tested by the local authority and have failed the inspection. Only then can you get the grant and there is no way for you to request an inspection. The good news is there is no means test. In all other areas the same process applies, the only difference is the grant is means tested.



The level of grant support is also being increased to 85 per cent of the eligible costs of installation/upgrade or €5,000 (up from €2,500/€4,000), whichever is the lesser. This represents an increase of 25 per cent and 100 per cent, respectively, relative to the current maximum grant levels.

Under the current scheme for **wells** a person is eligible for a grant if they are providing a piped supply of water to a house for the first time or carrying out improvements to a seriously deficient existing piped supply of water to a house. The vast majority of grant applications are for improvement works.

Currently a grant of €2,031 per house or 75 per cent of the approved costs, whichever is the lesser, is available. The minimum grant threshold for an application is €635. Eligibility for a grant is currently not subject to a means test. The dwelling must be a minimum seven years old. If a grant is approved, another application cannot be made for a further seven years.

The new rules are as follows:

- A maximum grant for rehabilitation works of €3,000, which represents an increase of 47 per cent on the current maximum grant amount.
- Where the local authority agrees that the most appropriate solution is to provide a new well, the maximum grant payable would be €5,000.
- Recognising the role of the grant in improving quality, the water quality treatment element (typically filtration and UV filtration) will qualify for 100 per cent funding up to a maximum of €1,000.
- Up to 85 per cent of other costs would be met, subject to the total combined maximum costs of €3,000 for well rehabilitation or €5,000 for a new well. Applicants would not be able to avail of both grant amounts i.e. they would not be able to avail of €3,000 for well rehabilitation as well as the €5,000 for a new well.
- The qualifying age of a house before an application can be made is to remain at seven years. The period before a further application can be made is also remaining at seven years. As an additional feature, applicants would be permitted to make a second application if the maximum grant was not fully utilised within the seven year period. This might include, for example, cases where some significant unforeseen or emergency issue arises after the first application.
- A minimum grant threshold will remain – but will be raised from €635 to €750.

Radon concentrations low in passive houses

Initial findings into radon levels in well insulated homes show that passive house buildings perform better than their neighbours' homes built to minimum standards.

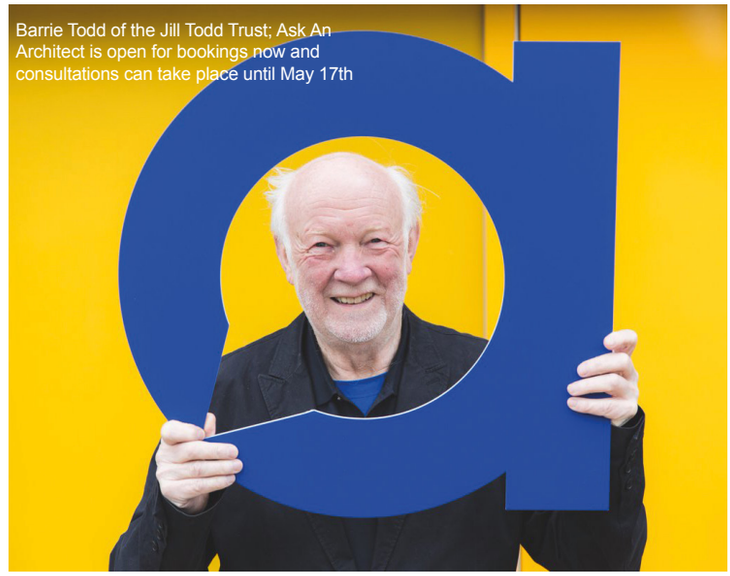
The study's lead researcher Barry Mc Carron also tells Selfbuild he believes that balancing the mechanical ventilation with heat recovery system (MVHR) to +/-10 per cent as required in the German PassivHaus standard, is a determining factor.

The initial research findings, (less than 50 per cent of the sample size has been analysed), provide useful data in relation to indoor air quality. "Indoor air quality and the prevalence of overheating are attracting an increasing amount of research attention across Europe but post occupancy monitoring of indoor radon concentrations is severely underrepresented, especially in Ireland and the UK," states the report entitled A Pilot Study of Radon Levels in Certified Passive House Buildings.

Help is on the way

When looking for help with your new build or renovation project, many self-builders would advise hiring an architect. If you're in ROI, check out the **RIAI Simon Open Door 2019** event – you can book a one hour session with an architect for a rate of €95 and have all the proceeds go to the cause of fighting homelessness. You can resereve your space on simonopendoor.ie to book a consultation between Saturday 11th May and Sunday 19th May.

If you're in NI, a similar initiative called **Ask an Architect** supports the Friends of the Cancer Centre and the Jill Dodd Trust; bookings can be made on askanarchitect-ni.com for a minimum donation of £40 and consultations can take place any time until the 17th May.


Barrie Todd of the Jill Todd Trust; Ask An Architect is open for bookings now and consultations can take place until May 17th

Ode to **architecture**

The **2019 Architectural Association of Ireland (AAI) Awards** never disappoint and this year was no exception. Here are the winners…

Selfbuild has featured two of the houses recognised by the AAI this year, Urban Agency's Rustic House (Winter 2018 edition) and t o b Architect's Killan Farmhouse (Spring 2019 edition), but there were plenty more projects on display to get your creative minds going for your very own project.

One to make the Awards category was the Downsize/Extend up project in Co Dublin by Carson and Crushell Architects with a budget of €300,000 and built by R&U Ltd. The renovation reduced the footprint of the house to increase the garden area and building's thermal efficiency (the 1950s suburban bungalow was extensively refurbished to the PassivHaus standard).

Only the original four outer walls remained, wrapped in rendered insulation; the glazing is flush and shutters recessed. The extensions consist of protrusions, new dormers and the dining area bay window, all wrapped in fibreglass with two tone glazing frames. Wall corners, reveals, gutters and ridge tiles are rounded for simultaneous robustness and a softening of silhouette. "While interventions are formally abstract, they are not entirely distinct from the original form," says architect Donal Carson. "This creates a unified domestic appearance and internal atmosphere."

Two projects by Clancy Moore Architects got a Special Mention, Conversion of a Warehouse to a Family Dwelling and Addition and Renovation to a Victorian Family House. Also recognised in this category was GKMP Architects' Vaulted House.

Photography by Aisling McCoy

Carson and Crushell Downsize/Extend up project

Photography by Fionn McCann

Bottom three images: conversion of a warehouse to a family dwelling by Clancy Moore

GKMP Architects, Vaulted house. Photography: Alice Clancy Architectural Photographer

Photography by Alice Clancy

Addition and renovation to a Victorian family house by Clancy Moore Architects

Party Proof Paving

What are your first thoughts when visualising an outdoor space for your new home? Perhaps you imagine an area that allows for outdoor dining, for the kids to play on, or perhaps an area for entertaining guests?

With any outdoor space comes inevitable mess, spilled wine, ketchup, animal paw prints... the list continues, and cleaning up after accidental spills can end up taking up a substantial amount of time. With this in mind, Tobermore have extended their EasyClean paving range. Following the success of Mayfair with EasyClean, Tobermore's Beaufort paving range with a contoured natural stone appearance is now available with EasyClean –technology that enables spills to be wiped away with ease.

Tobermore's EasyClean is a new concept for the modern home (and the first of its kind in the UK). EasyClean flags are treated with stain protection technology during the manufacturing process allowing for built in protection, preventing spills from penetrating the surface of the paving and allowing for them to be wiped away with ease.

As well as protecting against stains, EasyClean takes the work out of caring for paving, allowing you to spend more time enjoying your outdoor space and less time cleaning. Caring for EasyClean paving is a straightforward process as its coated surface allows for dirt and debris to be washed away without the need for vigorous scrubbing or power hosing.

EasyClean paving stays looking fresher for longer and is less susceptible to weathering, moss and greening than traditional paving so you won't have to clean it as often.

EasyClean is the perfect paving product for those who wish to keep their outdoor space as clean as the day they bought it. For information visit your local Tobermore Paving Centre in Tobermore, Bangor, Dublin or Cork or call our sales office on NI: 028 7964 2411 ROI: 048 7964 2411

*Feature image Mayfair, insert image Beaufort

tobermore.co.uk

Tobermore

Buzzing

We often spend a lot of time thinking about our windows, as the 'eyes of the house', but the front door is as important in setting the tone. If not more.

Not only that, the front door is vitally important if you're aiming for energy efficiency and of course, security.

The good news is there's a new product range on the Irish market exclusively available in NI and ROI from **Bee-Spoke Enterprises Ltd.**

These are the **RK Door Systems** quality aluminium doors that come with Secure By Design and PAS24 security certification as well as a five point lock as standard. Finger scan locking is also available.

The doors are filled with insulation and reinforced, but their weight does not impact on the overall aesthetics and the new pivot door range is available in all finishes including bronze, copper, polished concrete and timber.

For a front door that puts a smile on your face every time you enter your home, check out the range on **beespokeltd.com**

Victory!

Luxury Vinyl Tiles have come a long way since they were first introduced on the market and no doubt the culmination of all the years of engineering is the **Heritage Collection** by **Karndean**, exclusively available in NI and ROI through **Ambience Flooring** in Belfast.

The Heritage Collection, inspired by the architectural tiled floors of grand Victorian and Regency villas and townhouses, offers everything from striking monochrome designs to beautifully blended traditional patterns reflecting both the classic elegance of historic homes and the boldness of contemporary trends.

Hard-wearing and waterproof, each

individual tile comes with bevelled edges for a highly realistic look but, unlike the original Victorian floors that required regular waxing and buffing, your Karndean floor will be easy to maintain, resisting spills and stains.

For more about the range see **ambienceflooring.co.uk**

Fast track

The UK is well known for opening up the electricity and gas markets to competition. The initial focus was on the retail market, whereby we as end-consumers could choose from different price plans/companies.

But up until recently if you wanted **a new electricity connection** your only option for all the works was the owner of the network infrastructure – and this is still the case in ROI (all works are carried out by ESB Networks).

But if you are building in NI, the good news is you now have a choice. NIE will still do the final connection but the majority of the works can be completed by an Independent Connections Provider.

Electricity Worx, an Independent Connections Provider, can carry out the work potentially saving you both time and money.

For more about bringing in a new electricity line to your home in NI contact Electricity Worx, **electricityworx.com**.

For more about ICPs see **nienetworks.co.uk/Competition-in-Connections**

Calor BioLPG delivers a new lease of life in a 200-year-old home.

Sometimes a new heating installation is about more than switching to a cheaper or cleaner alternative, sometimes it changes someone's life. For one recent customer of Heat Services Portlaoise and Calor BioLPG, the switch has substantially taken away their pain.

Mary Gorman, Abbeyleix, lives in a 200-year-old house which was until recently heated by a coal powered back boiler. She describes the house as having been warmish, but to achieve this, she was spending upwards of €80 a week on coal.

Warmth is more important to Mary than most. She suffers from chronic arthritis and is acutely sensitive to any cold. What you or I would consider a small draft could cause Mary substantial pain.

In 2018, Mary's son was getting his house, located down the road from her own, changed to Calor LPG. Mary engaged the team from Heat Services in a chat and liked what she heard.

Heat Services are a family owned business run by husband and wife team, Veronica and Neil Dunne. With a staff of 10, Heat Services install and maintain gas systems in Laois, Offaly and into parts of Kildare and Kilkenny. Heat Services have worked with Calor for 25 years and they encouraged Mary to talk to Calor about BioLPG.

BioLPG is Ireland's first renewable gas, available to customers anywhere in Ireland. Because BioLPG is virtually the same as conventional LPG, it works in conventional LPG boilers and appliances. Mary went with BioLPG, because she wanted to do something for the environment.

"It was a no brainer. You have the choice of doing something cleaner, of course you would do it."

Despite the age of the property, the installation was relatively straightforward. When completed, the impact on Mary's health was immediate.

"I love it. The consistent warmth has eased my pain so much. Not only is LPG much easier than maintaining a solid fuel system, the heat is instant. It's warmer too, when I need it to be. It has changed everything for me."

There are probably very few switches that will achieve as much as this one did, but it is a story that Calor and Heat Services are very proud of.

For more information on Calor BioLPG go to www.calorgas.ie/biolpg

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Calor BioLPG. A small choice we can all be proud of.

See more at calorgas.ie or call 1850 812 450 (ROI), 028 9045 5588 (NI).

CALOR
BioLPG

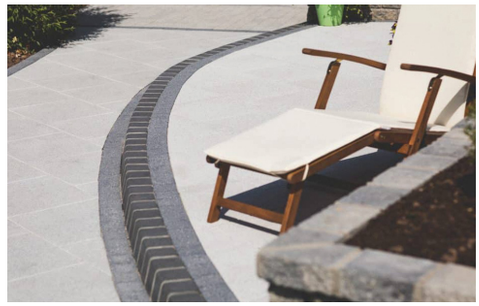
Innovation at the core

If you like the look of stone but are looking for a robust and cost-effective alternative, you'll have come across high quality concrete paving – a solution that has the added benefit of virtually no lead-time.

Keeping at the top of the innovation curve is paving and walling manufacturer **Tobermore** which has just invested £4 million in a new factory to make high-value decorative paving slabs, including **Braemar** which has natural aggregates that emulate the distinct aesthetics of natural stone.

Braemar is manufactured as both a block paving and paving flag product, in Ground and Ground Textured finishes, thirteen size options and eight vivid colours that come together to offer endless laying pattern concepts.

"Our block paving and paving flags undergo a special manufacturing process called PrimeTop which creates a dense, hard wearing surface layer on many of our paving ranges, resulting in enhanced

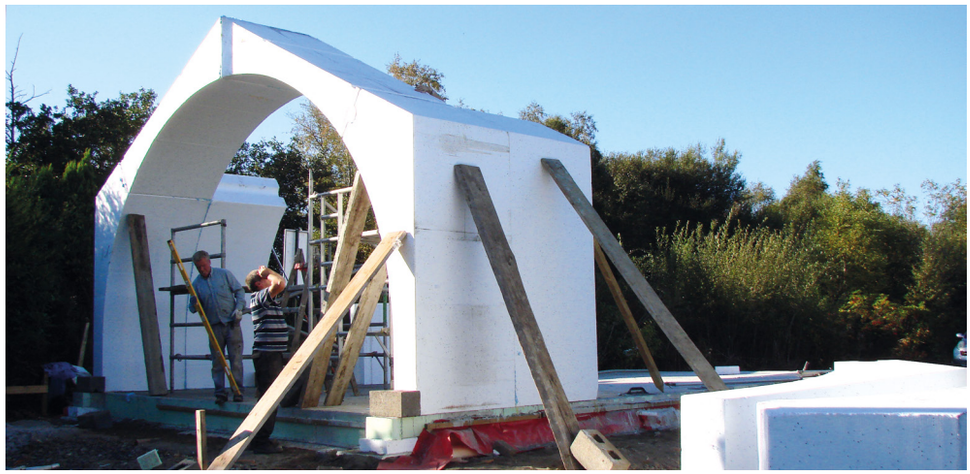


colour retention and wear characteristics," says Craig McBride, Technical and Product Manager at Tobermore.

"Additionally our Eff Stop process, an advanced vapour curing technique, combats instances of efflorescence by treating each batch of paving to a 12-hour steam bath, penetrating moisture deep within the concrete and controlling the rate of drying in the paving."

For more about the range visit **tobermore.co.uk**

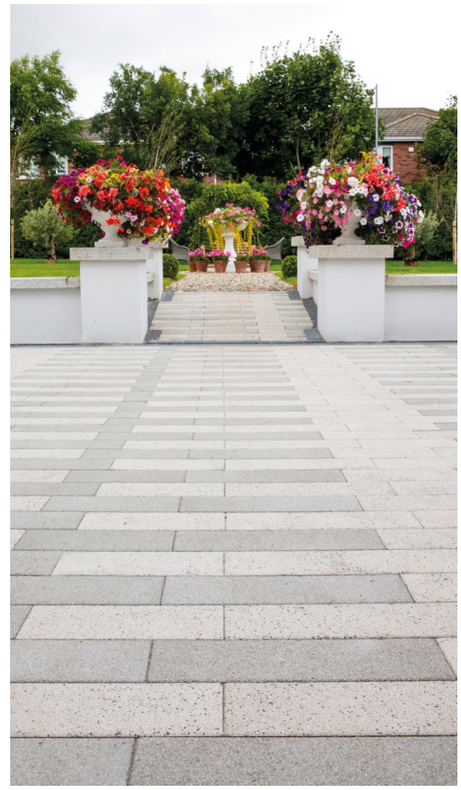
Seeing is believing



Many self-builders choose to get the walls and roof of their house built off-site because it means the structural components of their home are precision engineered to deliver the U-values and airtightness stated on the plans, minimising human error. A striking example is the M3 system, made of self-supporting EPS reinforced with glass fibre, exclusively supplied by **passivehousing.ie** in both NI and ROI. For you to see an example of how it's done, they're running an **open day** every Saturday on a house that started construction April 15th in Co Kildare. Just ring passivehousing.ie in advance to let them know you're coming. The house will take just 18 weeks to build so don't delay!

passivehousing.ie, mobile 086 8068786 (NI drop the first zero and prefix with 00353)

Paving the way



It can be hard to visualise what your choice of paving slabs will actually look like but now thanks to **Roadstone's** new **interactive tool** you can see how the Roadstone range fits in within a garden or patio configuration.

The company has also just launched two new products to meet the needs of Irish self-builders.

The **Milan** is antiqued to give the appearance of natural Irish granite and is available in three colours (pictured above). The antiqued finish has the added advantage of giving superior slip resistance.

The **Sablé paving flag**, meanwhile, is a concrete flag with a natural appearance that comes in three colours Diana, Klio, and Dore. The flags are also sealed to enhance colour and provide resistance to algae and lichen growth.

For more about the Roadstone product range and to use their interactive tool visit **roadstone.ie**

NEW BUILD

The great escape

Self-build mortgages can be hard to get if you plan to build a holiday home but for Helen and Daniel Smyth the lure of the sea proved too strong to resist.

Words: **Astrid Madsen** Photography: **Dermot Byrne**

Eight years ago we bought a holiday home in Wexford," says Daniel. "It was an old farmhouse, that had originally stood on about 50 acres of pasture land. The previous owner had retired from farming and sold off most of the land leaving the house, yard, outbuildings and five acres. It was perfect for us, as it fit into our longer term aspiration to move down to Wexford and set up a small holding."

"We love Connemara but it's just too far away to use regularly for short breaks," adds Helen. "We wanted a home relatively close to a town with good shops and facilities and our site is only 6km from the centre of Wexford town. Despite that, it has a very rural feel, located 500m from the nearest public road and surrounded by the farmland with which the original house was associated."

"We both love being close to the sea and Wexford is ideal for fishing, kayaking and beach days in the summer. Several of our siblings on both sides of the family have second homes nearby so the children have lots of opportunity to entertain themselves."

Inspiration

"The house that was on the site was probably about 100 years old, with thick mud and rubble walls and very small windows, originally thatched it had been extended over the years and a second floor added," says Daniel.

"It was a functional building, offering protection from the elements, but it did not take advantage of its wonderful location at all as well as being damp and barely insulated at all."

Holidaying in the house over the years, it became clear to Daniel and Helen that a renovation would be too difficult and that they would be better off starting from scratch. "We've had maybe 10 previous houses and apartments, mostly period ➤

properties in the UK, and in three of these did major refurbishments and extensions so we had a good idea of how the building process works, but we'd never done a complete new build before, so it was exciting," says Helen.

"We wanted to balance having a house that would cater for just the family and feel homely while also being able to entertain larger numbers including the many family dogs (seven at the last count). While we wanted an open layout we also wanted to ensure we wouldn't feel lost in a cavernous space when it was just us in the house."

"As we were thinking about getting started, we attended the Selfbuild Live exhibitions for inspiration and advice and it was at the second of these that we first talked to Fergus our architect."

"That's what kicked off the design process, Fergus came to site and he agreed there was nothing of merit worth saving," adds Daniel. "His style is very modern, he

'As we were thinking about getting started, we attended the Selfbuild Live exhibitions for inspiration and advice...'

had spent a lot of time in Germany and took some ideas from there, particularly in the integration of outside and inside spaces. We looked at his portfolio, it showcased lots of glass and plenty of space. We were hooked."

"We're both big fans of some of the property programmes on TV, so perhaps we were influenced in our decision to undertake a build ourselves by that," says Helen. "Judging by these shows it seemed that with a new build something always goes wrong that should have been foreseeable, so we spent a lot of time getting the design right in the first place."

Top of the list was the location. "We wanted to enjoy the views, the sense of space and stillness while in the house. Fergus' initial design with its double height and a single space for most activities really appealed to us."

"While we mostly share the same tastes, Daniel's emphasis is on style: minimalist and perfection. For me this can sometimes be unpractical and feel a little sterile and unwelcoming," Helen adds.

"Over the years Daniel and I have worked out what suited both of us. Hideaways, nooks and crannies; these were all important in the design. There were four iterations of the plans; the original one was very grand. We backed down on some of the design features in that version and thought about what we really needed in the house and where we wanted everything. It took about two months of to-and-fro, during which Fergus helped a lot, bringing both our requirements to the fore so that both of us loved the final design and neither felt compromised."

"The main living area is double height and basically a rectangular block with a standalone cube in the middle, on top of which is a mezzanine playroom for the kids," says Daniel. The circulation space in the kitchen/dining area is a fantastic space for people to chat and mingle; but because we didn't want it feeling huge and impersonal, we have smaller cosy areas too."

"We also thought a lot about the lighting plan so that we could use it to create different atmospheres in different parts of the space."

Family home

For it to function as a family home, basic practicalities had to be factored in. "For this house, particularly considering its rural location and the fact that we have two mud-loving dogs, the emphasis was very much ➤

Q&A

Would you do it again?
We view this is as our final home, it suits us so well, so we're not even considering it. We are also undergoing phase two of our project, reroofing the barn next to the house to provide a games room and possibly a little bar area, and that's keeping us busy.

What's your favourite thing about the house?
Apart from the wonderful peace and solitude of the location, we love the way the house just works whether it's the immediate family here or a large gathering. Everything is just where it should be. I like the look on people's faces when they see the height, the character of the house.

What would you do differently?
We didn't put any blinds in the bedrooms yet; in the summer the light starts to come in at 4am which is a bit early to wake up so we will be adding some form of shading there. There are no curtains in the kitchen but that's the look we love.

on durability and practicality. We have a utility room for the wellies and a convenient outside area to hose everything down after a day at the beach," says Helen.

"In terms of upkeep all of the main circulation areas are floored in large-format ceramic tiles which are easy to clean and don't scratch. Similarly, we selected Swiss laminate flooring for the main living areas and bedrooms which is of commercial grade durability and again is not liable to wear and tear, water damage, and so forth."

"We also used only washable paint, kitchen surfaces are totally heat and stain proof. All of this makes it a lot less stressful when we have a large gathering at the house with kids and dogs tearing about."

"In the past we've made choices of, for example, flooring or worktops which, while they may have been stylish, were not terribly practical," says Daniel. "For instance, in one property we had beautiful cherrywood worktops fitted, but they were a nightmare to maintain so we went with stone this time for an easy life."

"We also put considerable thought into how we would live in the house as we got on in years, so we specified walk in shower areas, wheelchair access, a mostly single-level design, minimum door openings and so on. I think Fergus was surprised at how involved we got with this aspect."

"On our wish list were three wood burning stoves, we have one in the sitting

room, a double sided one in the kitchen/dining area, and one in the bedroom – which is wonderfully cosy in the winter. As for the external finishes we chose a stone-clad finish for the main part of the house which matches as closely as possible the colour of the local stone from which the old outbuildings are constructed."

"This is paired with some cedar clad ➤

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elements which we are going to try to keep in their as-new colour rather than letting them silver with age."

The sunroom was an unexpected delight. "Even though we weren't keen on having this originally, Fergus persuaded us it would be nice to take advantage both of the views down the length of garden and to follow the path of the sun which ensures the sunroom receives marvellous light from first thing in the morning until late evening," says Helen.

"This is where a good architect earns their money. It was actually a pleasant surprise the first time we saw it glazed. We use it all the time; after dinner we go straight to it to relax in."

Unforeseen cost overruns

"While I don't believe it would have been possible to get permission to build where we did if it had been a greenfield site, the fact that there was an existing farmhouse already there meant that neither we nor Fergus anticipated that there would be any significant issues with the planning office in Wexford," says Helen.

"We were demolishing an old house and some of the associated outbuildings with a total floor area equal to the new build, and on roughly the same footprint, so in that respect it should have been a straightforward process to get planning permission."

"We were therefore extremely surprised when our first application was rejected at the recommendation of the Environmental officer."

"His objection centred around the fact that the percolation tests we'd had done as part of the application process were unsatisfactory due to the heavy clay soil in the area and, despite the fact that there had been a septic tank in use with the old house for many decades, there was no part of our land deemed suitable for installing a new packaged system."

"It seems that environmental controls in Wexford have been dramatically tightened up in recent years having previously been somewhat less strict."

"We didn't have the option to connect to the mains but a zero-discharge willow bed located in a field near the site allayed his concerns. We engaged the help of a specialist to design it; this involved excavating a large hole in one of our fields, approximately 40m by 5m, lining it, installing drainage pipework and filling it

with specific grades of sand and soil."

"Finally several hundred willow cuttings were planted which will disperse our wastewater through the process of evapotranspiration. It took six months and added €15,000 to the project. Thankfully the council contribution was minimal so that offset the cost somewhat," adds Daniel.

"Then, after spending a year through planning, we started digging the foundations and realised the site used to have water running underneath and the soil – a patchwork of clay, silt and sand – wasn't loadbearing," says Helen.

"This meant the strip foundations we'd originally budgeted for wouldn't work. The entire project came to a halt for a couple ➤

Q&A

Apart from the build issues, what surprised you?

What took us most by surprise is that because the house is all open plan, sound reverberates. It does get noisy with hard surfaces, you can hear the TV up and over the mezzanine. It wasn't what I was expecting but as we add more soft furnishings and decorations we'll get around it.

What single piece of advice would you give a budding self-builder?

Success is all in the detailed planning, going over the plans again and again, really thinking through everything that is going into the house. Changing things on paper at the design stage is cheap and easy, but making changes during the build can be a costly exercise.

With 3D models we were really able to get a clear vision of what the house would look like and we walked miles through various shops, and searched many websites to find the fixtures and fittings we wanted – usually before Justin our builder needed to know. The delay over the foundations did help us as we had time to really think and re-think before making any spend.

If I can squeeze in a second tip: get more money than you think you will need! Even with the tightest fixed price contract unforeseen events can still trip you up.

Tips

Shop local. Our architect and builder were local – we felt that was important. We got our windows from an excellent window company nearby; same with the kitchen. We did the rounds of all the usual mid-range suppliers of German kitchens but were not inspired by any of them. Eventually we talked to a local firm that specialises in fabricating their own kitchens from scratch, rather than assembling pre-designed components selected out of a catalogue. We were very impressed with the high-end results they could achieve for the price, and the fact that they can make literally anything you want allowed us to specify some unusual elements, such as 10 foot wide handle-less drawers. This ensured we got the crisp and uncluttered look we really wanted.

Duplicate. The house has two almost identical bathrooms, one ensuite in the master bedroom and the other as a family/guest bathroom; this saved on cost.

Listen to the professionals. If you are paying for professional advice, use it. While we had our own strong thoughts on the project and had done a lot of research, we used the experts we employed. Detailed input from Fergus, Justin, Feidhlim and other engineers and specialists involved was hugely useful and ensured we got the result we wanted.

"...given the degree of detail in the tender pack, we were surprised at the quotes that came back, the highest being more than double the price of the lowest."

of months while we considered our options with a geotechnical specialist and our structural engineer. They recommended either drilling pilings to support the foundations, or building the house on a raft foundation to spread the load over the underlying soil."

"The quotes for a piled foundation came in extremely high so our only option was a reinforced concrete raft foundation built on top of several meters of carefully constructed substrate using specific grades of infill material," says Daniel. "This all took three to four months to do and added just over €50,000 to our build cost but we had to bite the bullet or abandon the whole project. We couldn't change the location of the house from a planning point of view."

"Then there was the water connection; the old house had a well located in the stockyard. Despite all efforts to filter and purify it there was no getting around the level of iron in the water which had, over the years, stained everything in the old house it came into contact with on a regular basis," says Helen.

"A call to the council one day revealed that a connection to the mains water system was possible, but we would have to run a pipe about 450m from the site to the nearest water main. Our neighbour was very accommodating in allowing us to dig across some of his farmland and so we avoided the misery of living in a lovely new house with funny-coloured and undrinkable water. This all added about €3,000 to the project cost, but it's definitely been worth it."

Onwards and forwards

"We had investigated the option of timber frame, as it's a quicker method to build with but in the end we went with concrete block walls; it was a personal choice in that we preferred the feeling of solidity and durability. We pumped the cavity with EPS beads to maximise insulation" says Daniel.

"In the early stages of the design we

entertained fantasies about using natural Welsh slate for the roof, but unfortunately this idea had to be dropped in favour of engineered on the basis of cost. We had a lot of roof to cover and the investment in slate would have meant compromises in other areas."

"Because we're based in Dublin, and both of us work there, we couldn't take a very hands on approach to the project," says Helen. "After having put together the construction drawings and dealt with the tendering phase, Fergus acted as project manager hiring all the professionals we needed on our behalf."

"Fergus sent the tender out to seven or eight builders and, given the degree of detail in the tender pack, we were surprised at the quotes that came back, the highest being more than double the price of the lowest."

"Fergus advised us regarding the reputation of each of the builders who responded. The contractor we finally chose, Justin, had worked on several projects with Fergus before, and we thought this was important in terms of effective communication and teamwork."

"In early conversations with Justin we felt very comfortable. We also, by way of reference checks, had Justin show us around two previous houses he had built in the area and were greatly impressed by the quality of his work. His price was competitive too, so we'd found our main contractor."

"Once construction got underway there were only very small tweaks to do with moving a wall to make the master bedroom bigger and the walk-in wardrobe smaller. There were other changes initiated by the structural engineer, such as additional steel reinforcements to the roof, and strengthening some gable walls about which we had no choice," says Daniel. "At one point we discussed lowering the ceiling height to reduce cost, but it would've ruined the ambiance and I just know it's something we'd have kicked ourselves about ever after, so we stuck to the original design."

"In the end having a main contractor take responsibility for the build, working to a fixed price, with the architect overseeing the project and ensuring that everything was done to the agreed specification before stage payments were released worked very well for us," adds Helen. "Once the building was out of the ground and the build proper was underway, we got weekly progress photographs and were only consulted on a few detailed questions."

"As I say, we have seen any number of TV programmes where the heroic but slightly over-optimistic self-builder takes on too much and ends up in trouble. The approach we took probably cost a bit more, but it really did take so much of the stress and hassle out of the build process."

"A year after completion we carried out the final snagging and there was really nothing out of the ordinary, just some minor cracks in the plaster as it dried requiring some filling and painting. We've been in for two years now and can't wait to move into the house permanently."

Energy considerations

"In order to meet our target U-values for the building we opted for triple glazed uPVC units. We've always avoided uPVC windows in the past as they've traditionally been fairly heavy looking and ugly compared to aluminium frames," says Helen.

"That said, uPVC has come a long way since the early days and the frames we settled for are in a nice charcoal grey with woodgrain patterning and matching slim-profile sills."

"If I'm pushed, I'd have to say that I would have preferred aluclad windows but, given the amount of glazing the build required, the marginal improvement in appearance really couldn't be cost justified."

"We get excellent solar gain because of the orientation of the house. With all the glass facing the sun, it heats up all day long in bright weather. In the summer it never gets oppressively hot; leaving the doors open provides plenty of ventilation on the hottest days."

To meet the building regulations Helen and Daniel chose a gas combi boiler, fed off an LPG tank installed in the old stockyard, with a photovoltaic (PV) array instead of a heat pump.

"Because of the renewables requirement of the current building regulations, we have a 7kW PV panel system installed – unfortunately using local wood in the stoves doesn't count as a renewable," says Daniel. "At the moment this simply feeds the electricity mains supply. Our electricity bill is €30 in standing charges per quarter and a little on top for our net usage after deducting the contribution from the photovoltaics but the panels cost €6,000."

"We're at the house every other weekend and to date we've had the tank filled once in two years and it's currently half full," says Daniel.

There's also underfloor heating throughout to free up wall space. "The only niggle I would have with it is that it's designed to run more or less constantly at a fairly low temperature and in cold weather it has to be running for a day or so to really start raising the temperature of the house. Fortunately the three woodburning stoves can get things warmed up in a hurry if we pop down to the house for a weekend mid-winter," says Helen.

More photographs available at **facebook.com/selfbuild**

Project information

Find out more about Helen and Daniel's **new build** project in Co Wexford...

SIZES, COSTS & SPEC

Site Cost: €105,000 **Build Cost:** €425,000
Floor Area: 2,600 sqft **Plot Size:** 5 acres

U-values to Part L 2011 standards; cavity walls 150mm filled with EPS beads, PIR insulation for pitched and flat roofs, floor insulation 110mm + 30mm PIR, 30mm perimeter insulation.

SUPPLIERS

Architect
Fergus Flanagan Architects, Wexford Town and Dublin 2
fergusflanaganarchitects.ie

Main contractor
Justin Keane Construction, Glynn, Co Wexford

Kitchen
Michael Farrell Kitchens, Wexford, michaelfarrell.ie

Windows & Doors
K&K Windows, Gorey, Co Wexford, kkwindows.ie

Willow bed
Feidhlim Harty from FH Wetland Systems, wetlandsystems.ie

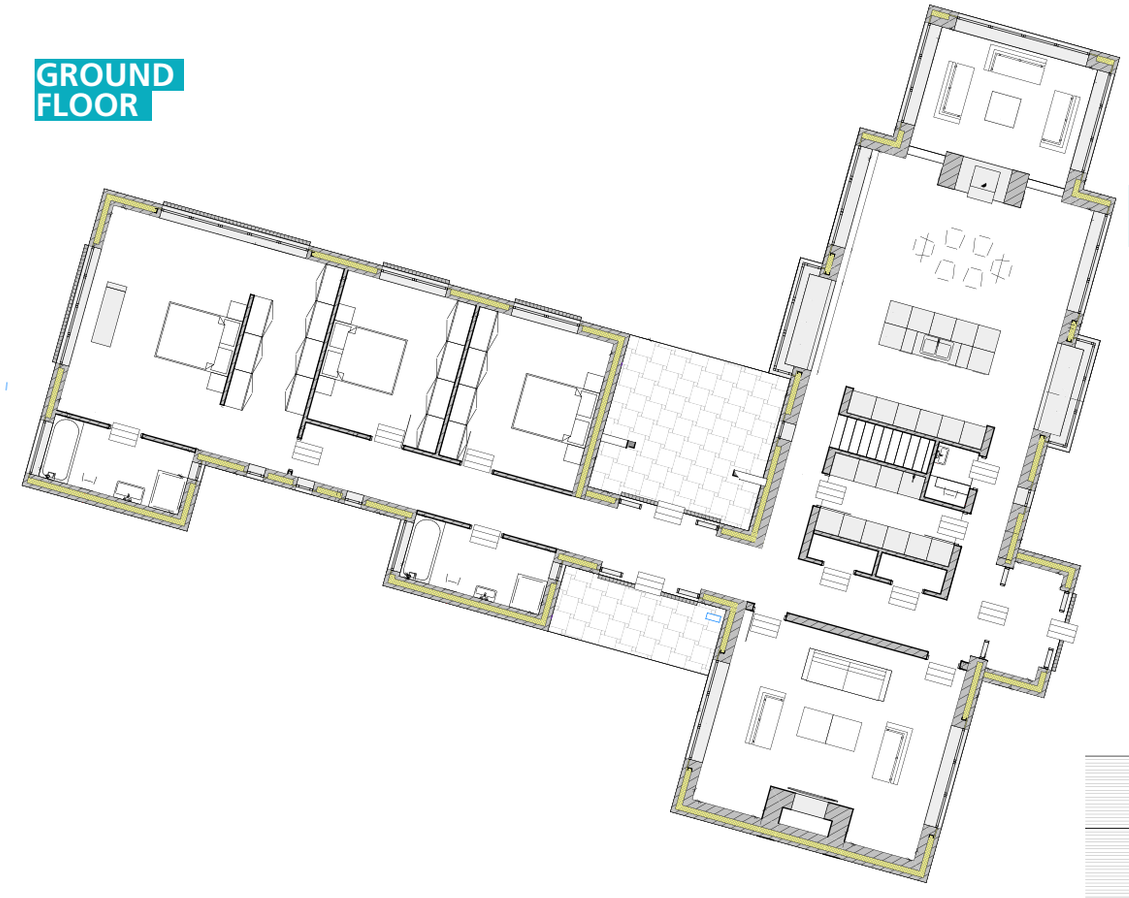
Stairs and Balustrades
Clonmines Joinery, Wellingtonbridge, Co Wexford, clonminesjoinery.ie

LPG
Calor Gas, calorgas.ie

Stone cladding
Z-Stone by LBS, lbsproducts.com

Photography
Dermot Byrne, dermotbyrnephoto.ie

GROUND FLOOR



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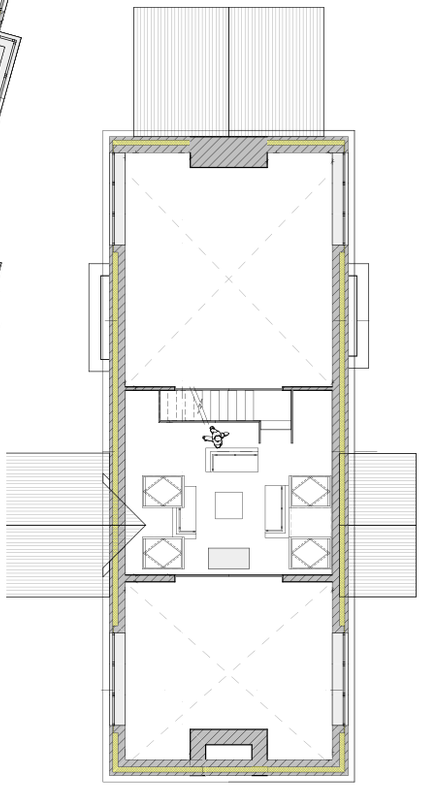

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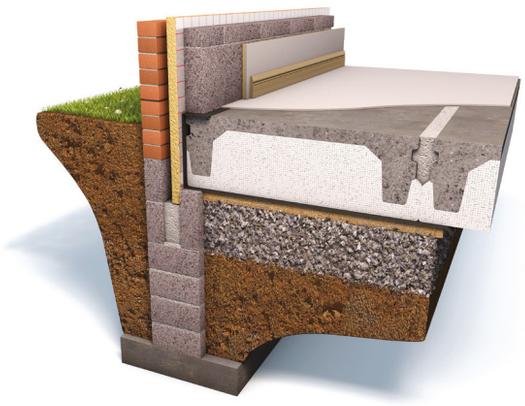

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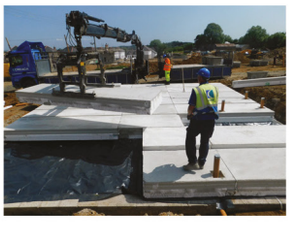

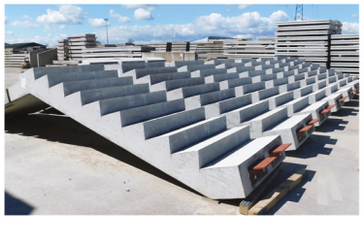

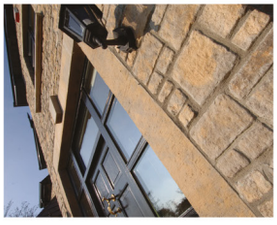

INNOVATION IN CONCRETE

NEW BUILD

Simple does it

Ken Gill's rectangular design is low cost and energy efficient

Words: **Astrid Madsen** Photography: **Paul Lindsay**

In the coldest two weeks of January 2019 Ken only had to turn on the heat in the house for an hour. "Any bit of sun that gets into the house through the windows keeps the house warm," he says. Even though Ken is very happy with this result, and it's one self-builders often strive for, it was not the one at the forefront of his mind when he first undertook the project.

Decades ago, when Ken moved away from home and sold up the farm, he kept part of the land. That's because he knew that one day he'd eventually be building on it to retire to with one side facing the sea and the other a mountain.

"The rural location appealed to me and at the same time it's only 10 minutes away from the village. The neighbours are close yet the location is private," he explains. ➤

He came back a bit earlier than originally planned. "My mum got sick and I needed to be near her," says Ken. But building on this dream plot wasn't easy.

"The planners don't like houses in prominent places. It was even more complicated to convince them because we're in an Area of Outstanding Beauty. Following an unsuccessful planning application I hired an architectural practice; the new design and application were lodged and approved in just under a year."

Ken also had to apply for a discharge licence for the packaged onsite wastewater system he installed. "We got it tested recently and the water that comes out of the system is 95 per cent pure," he says.

Decisions, decisions

"Because I waited five years to build the house, because of the planning delays, it gave me time to do lots of reading," says Ken. The more he read the smaller and more energy efficient his house got.

"I stuck to a rectangle in part because it's an exposed site and complicated roof designs such as one with valleys will funnel wind in. It's also the cheapest way to build." ➤

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Q&A

What would you change?
The site is an acre which means I have a very big lawn to cut! The only thing I'd change in the house is the light switch in the guest bathroom; it's on the opposite side of the door handle. It's a bit awkward to turn on but it's only used once in a while.

What's your favourite part of the house?
I love the windows, they offer tremendous views. Sitting looking out; you can see so much. The house is designed so the south facing side offers views to the sea. That's the living area. To the north are the bedrooms. I just love living here!

Would you do it again?
I would even though I don't plan to because I built this house to retire in.

What would you tell a budding self-builder?
People say it's stressful but it wasn't for me. It actually was a pleasant and easy experience. The foreman for the timber frame company told me not to worry; his mantra was: everything gets sorted. And he was right. It always gets built in the end. But it's true that I was very fortunate in that I could rely on word of mouth for the tradesmen. I knew the people I was getting were good.

'I choose a quick construction method, timber frame and roof timbers with wall panels formed on site; it only took two to three days to build.'

As for the fibre cement cladding, Ken came across the finish in Scotland. "I wanted a low impact visual aesthetic and black is a colour that would have been traditional on farms. Sheds would have been tarred in the past and this contemporary version reminds me of them."

The fibre cement cladding is fixed with stainless steel bolts to prevent rusting from the salt spray. The choice of windows also had to factor in the seawater. "Aluminium oxidises quickly so we couldn't go with alu-clad; instead I chose timber," explains Ken. "The windows do streak occasionally. I made sure they were accessible so I could clean them myself with the ladder.. They are all triple glazed and I chose a grey black colour – exactly what I wanted."

For Ken, timber frame seemed like the most straightforward way to get an energy efficient house. "I chose a quick construction method, timber frame and roof timbers with wall panels formed on site; it only took two to three days to build."

"When the time came to figure out how I was going to build the house I was sure of what I wanted. I didn't want anything I didn't understand or that hadn't been tried and tested. I wanted the house to be well insulated and economical to heat. It gets so cold in mobile homes, which is where I was living during the build, that this became a bit of an obsession."

Getting the timber frame and cladding to site was also logistically easier than blockwork. "I had to arrange with the neighbour access through his field to bring the timber frame sections to the site; he kindly allowed us to bring in a lorry on his land and crane it in. I wouldn't have been able to do it without him."

The design fed off two core ideas; the first one of course was the views. "The only way someone can look in is if they're on a boat," says Ken of any privacy concerns.

"I'm very lucky in that there's only me, (and the dog), I had no one else to please when designing the house," continues Ken. "I like the fact that you don't notice the building. It wasn't built to impress, it was built for me. A lot of my neighbours thought I was crazy, that I should be building a family home."

The second aspect was about getting the flow right. "By reading an awful lot I knew I didn't want corridors, so I kept the passageways to a minimum. I think design is ➤

mostly about analysing how you are going to be living in the house."

Ken doesn't think the rectangular shape limited his options. "By sticking to a rectangle, you get no surprises during the build and yet I think you can still do a lot with the layout," he adds.

"You can get creative with an open plan design, without doors or corridors. Because the airtightness is very good we didn't need to factor in airlocks; in older houses you'd have a porch to keep the draught out of the front door and you'd have corridors to close rooms off from one another. You don't need any of that with an energy efficient house."

Sequenced

"After many years of wrangling we eventually got planning permission in January 2016; after that I chose the timber frame company in March and we started work on site the last weekend in May. Things hadn't picked up by this stage, it wasn't until the following year that building took off again so I was in a buyer's market," explains Ken.

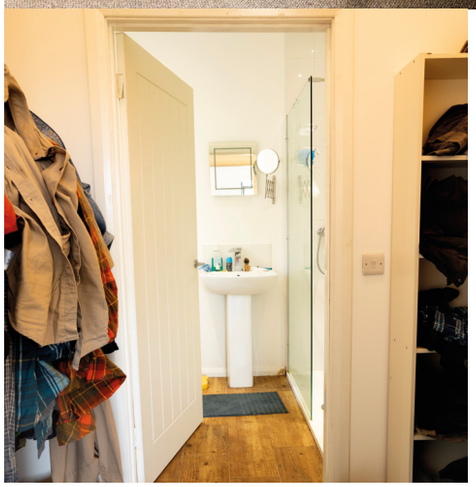
"I got the timber frame package priced around; the architect had some contacts ➤

Tips

Think single storey. For my three bedroom house the bungalow style is more than enough; it gets more expensive and complicated to add a second storey. As I had the double height windows I used wall hangers and a lower ceiling to soften the effect. That's a good set up for entertaining.

Dryline. I didn't want to skim coat the plasterboard so went for what's referred to as drylining; the plasterboard sheets are butted against each other and sealed with a mesh which you can simply paint over.

Stud finder. To hang just about anything on timber frame walls, you need to find the studs. I use a plastic bag with a magnet in it to find the plasterboard nails.



and we went to two to three timber frame companies. I chose the one whose pricing was right and the one I had the best rapport with; we understood each other for the design."

"I did the foundations with a local contractor; the timber frame company gave us diagrams and we followed them to pour the foundations. The substructure is your biggest unknown because you never know what you're going to hit. We were lucky in that we sit on good gravel which saved me money not having to buy any for the groundworks."

The timber frame company helped tweak the plans too. "I felt the bathroom was too big for my purposes so we made it smaller and put in a walk-in wardrobe instead."

"After they craned in the wall sections, the timber frame supplier put in the windows, insulation, plasterboard, and the fibre cement cladding. I brought in a local electrician and plumber and sourced the bathroom fixtures and fittings. I also chose a flat pack kitchen."

For the bath, Ken had his heart set on one that was square in shape. "I wanted a Japanese style bath because there's always something sticking out of the water if you're lying down, and I just get cold." The bathroom also has a walk-in shower.

The big question during the build was what to do for the floor coverings. "I wanted terracotta but that was really expensive; I went to the tile store and they convinced me to try wood effect porcelain tiles. I had my doubts because my mum had used these to disastrous results. I thought long and hard because I was aware any kind of covering could get bleached from the sun. I thought laminate might wear too quickly so I used the wood effect tiles throughout the house. This helped save on cost and has worked out really well; I'm very pleased with it."

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Project information

Find out more about Ken's **new build** project in Co Down...

BUILDING SPECIFICATION

Walls: Vertical black fibre cement corrugated wall sheets on timber counter battens to provide ventilated void on breather membrane on OSB board on external timber frame kit on airtightness membrane on timber counter batten on 40mm PIR insulation on 12.5mm plasterboard, U-value 0.16 W/sqmK

Floor: Sand/cement screed on vapour control layer on 150mm graphite EPS insulation on 1200 gauge DPM on 150mm cast in situ concrete slab on 225mm thick bed of compacted hardcore, U-value 0.14 W/sqmK

Roof (fink truss over the kitchen, utility and guest bedrooms): Vertical black fibre cement corrugated roof sheets on timber battens on breather membrane on trussed rafters on 400mm mineral quilt insulation laid at ceiling level on airtightness membrane on 12.5mm plasterboard, U-value 0.11 W/sqmK

Vaulted roof (monopitch roof to suit double height and corner glazing): Vertical black fibre cement corrugated roof sheets on timber battens on breather membrane on vaulted trussed rafters with glass mineral wool between 40mm PIR insulation on airtightness membrane on 12.5mm plasterboard, U-value 0.15 W/sqmK

Windows: triple glazed, aluclad, argon filled, overall U-value 0.8 W/sqmK

SIZES & COSTS

House size: 124sqm

Plot size: 0.56 acres

Total project cost: £115,000

SAP (EPC): 85 (B)

Airtightness: 0.9 m3/h.sqm @50Pa

SUPPLIERS

Architect
Gareth Boyd of 2020 Architects, 2020architects.co.uk
Timber frame company
Kilbroney Timber Frame insulated with 'Earthwool' frametherm Roll 35 between studs, kilbroneytimberframe.com
Fibre cement corrugated sheets
Neptunas SVK by Rilco, rilco.ie
Floor insulation
Kingspan Aerofloor Platinum, kingspaninsulation.com
Kitchen
IKEA, ikea.co.uk

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EXTENSION & RENOVATION

Fill in the blanks

A cost-effective extension pulled this typical 1950s semi-detached Dublin suburban house back into shape

Words: **Astrid Madsen** Photography: **Dermot Byrne**

We bought the house 10 years ago; the same person had lived in it since it was built in the early 1950s. It was a three-bed semi detached end of terrace house," explains Emma Blain who lived in it for a year with husband Andy Macken before adding a new kitchen and renovating.

"A couple of years later we realised it was still a difficult living space, we needed a new bathroom and utility, so we did a small renovation on the existing wetroom and did up the bathroom upstairs."

"For the first child this living arrangement was fine," continues Emma, "but we wanted to make the house bigger by the time the second was born. We got plans done up; I had an idea of an extension at the back that would have meant getting rid of some garden space."

"But there wasn't time to get the project done before the second was born, and we didn't want to undertake it while she was a newborn, so we shelved the plan for a year. It gave Andrew time to find our architectural designer; Andrew is the fussier one so it made sense for him to take on that task."

"With two children, we had lots of stuff. We had a small living area and one living room so the mess was everywhere. As kids get bigger so does the mess!"

"We could have moved to a bigger house but every home we looked at needed some renovation job. We love our area and wanted to stick to it; close to school, family, friends, transport, neighbours, shops. There's a good sense of community so we ➤

decided to stay put and renovate where we were."

"We did need more space but the question was how much we could get in on a reasonable budget. We thought we'd maybe be able to add a playroom; we didn't think for a second we could get an extra bedroom. We hadn't realised the potential."

Design is key

"We didn't have a scrapbook or have very fixed ideas about anything; all we wanted was a nice house that would work for the family," adds Emma.

And that's what their designer delivered by adding an extension at the back for an extended living area, another at the side (ground floor playroom with master bedroom above), and a reconfiguration including a downstairs toilet and larger laundry room.

"When we saw the plans with everything we wanted, it was an exciting time," says Emma. "We barely made any changes to the architectural design we were presented with. The only place that hasn't been affected by the upgrade is upstairs; the north facing bedroom is the coldest room of the house."

"I especially liked how it blended but contrasted the two-storey extension to the original house. We had a choice of two looks at the back around the flat roof: we could have had cedar wood cladding only around the edges but we chose to go the whole way around."

"I loved that aspect of the design. It's different yet still complements the house. We have tall trees and the cedar just blends in really well." They chose to stain it with multiple coats as opposed to letting it weather to a silver colour.

The couple had to get planning permission but it was a straightforward process. "What we didn't realise was that we would need a soak pit. There are a lot of homes in Dublin with hard paving and drainage is causing problems. Even though we don't have any hard surfaces around the house we had to add the soak pit which cost us an extra €1,000 to get it built and tested by the engineer."

The choice of builder was largely based on recommendation. "We tendered to six builders including one who did up the house of a friend of ours. Very few got back to us, only two or three; it was getting busy again. The one we had put forward offered the ➤

best price."

"During the construction phase we had to move into my parents' house, both retired, who live nearby. The irony is their neighbours next door started work on their house so we moved to another building site, which was noisy from 7am to late into the night."

"We started the job in March 2017 and spent the summer in my parents' holiday home in Donegal," says Emma. "We moved back in September."

"It took longer than we wanted it to; the schedule did slip behind. Maybe living on site would have helped keep the build moving along. It took six months when we originally thought it would take four. It slowed down towards the end but we couldn't move back in with small kids until it was completely finished."

The couple were involved in the process with site visits and there were few surprises as they had budgeted for the drainage issue they came up against.

"We did random spot checks, every few weeks. The biggest change was an idea

Andrew had which was to extend the porch at the front of the house. It didn't require planning permission as small porches are exempt and we put cedar wood around the edge. It added a meter to the hallway. It makes a big difference, there's more light and space. For everything else we were very pliable."

All work and all play

The house had been upgraded in the past but they chose to revamp it for one last time with this building project.

"We had a shiny cream kitchen with walnut top which lasted really well: we sold it online as it was in perfect condition," says Emma. "But this time we wanted a more classic look. Not traditional, just something timeless enough that I wouldn't want to replace it in five years' time. We went with handle-less units and chose granite for the worktops. There's a different colour on the peninsula than at the hob which provides contrast."

"The granite in the cooker area has a worn feel and is very tactile; above all it's so ➤

By adding a porch, the hallway was brightened up and extended by a meter

Q&A

What surprised you?

We were pleasantly surprised by lots of things; the biggest good surprise was the patio area and how much garden space we were able to retain. We didn't lose anything. We still have space for the trampoline and vegetable patch and toys. We actually use the garden a lot more and we have people over more often. The kids can bring their friends with us knowing the garden is a safe space. With the trees in the summer, we don't feel like we're in the suburbs; it's not as constricted as it used to be. On the patio we added granite planters which bring the space together; the roof overhang works well to keep out the summer sun and allow the winter sun into the house.

What's your favourite part of the house?

Because it keeps the entire house tidy, the playroom. I love the kitchen as well; it's full of life, always warm with the garden south facing. As soon as a ray of sunshine hits it, it gets warm. Sometimes you don't realise what you want until you actually have it.

What would you change?

As part of the renovation we added a new boiler system, with a gas combi boiler for hot water. There's underfloor heating downstairs. As a result the hot press with boiler in it was made redundant. We couldn't have done it at the time, from a financial point of view, but I would like to make the bathroom upstairs bigger by knocking through to that hot press.

Would you do it again?

Probably not; the idea from the beginning was not to do it again and I can't say I really enjoyed it.

Tips

Don't get obsessed about things that are not so important. I was worrying about getting the right table for the dining area and finding furniture for the playroom but these things fall into place.

Keep it local. Not all kitchen places were accommodating; the local company we ended up choosing was lovely to deal with. They were always happy to talk and had suggestions and ideas. If you can keep it local, logistically it makes things easier towards the end.

Look at friends' places with children of similar ages: different needs for different stages.

Get a full length larder fridge. We had half and half before and this provides so much more space. We have a separate freezer as well. It makes planning for food during the week much easier.

Shop around for light fittings early on; we have spots downstairs but found it difficult to choose lampshades.

easy to use and clean. There is not a mark on it. I also love the fact that everything is accessible and our designer's idea to incorporate the window seats with built-in cupboards. For once in my life I have enough storage space."

"The laminate flooring was another decision we're glad we made; with the children it's so much easier on the upkeep than wood and it's softer than tiles or other hard wearing floor finishes."

"We used to have semi-solid wood floors and they marked easily. It was our supplier who persuaded us to go with the laminate, it's amazing the difference of what's on offer now as compared to seven years ago when we did our first big renovation," says Emma.

"The laminate looks like wood and is a dream to clean. The floors don't scratch, stain or mark. Plenty of scooters and toys being dragged around have tested them and there's not a scratch."

Then came the playroom challenge. "We were adding a playroom that was to be north facing so we knew it would be dark and off the hallway. It was one of my

'We didn't have a scrapbook or have very fixed ideas about anything; all we wanted was a nice house that would work for the family.'

obsessions on the plans: it looked so small and rectangular I thought I better figure out how to make it work. In reality it was much bigger than I thought and it's actually the perfect size."

"I looked for ideas online and found the ideal image of built-in shelves. I costed it for a carpenter to make to measure and it was quite expensive; then I realised I could get the sections in a flat pack store which I did. ➤

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I built it in one afternoon and went with a grey beechwood effect."

"In previous play areas we had devised for ourselves we'd chosen strong colours which did get irritating after a while. This was part of the reason why we decided to book a colour consultation. The interior designer was brilliant; we would have spent far too much time figuring it all out without her help."

"We weren't looking forward to have to choose the colours and this made the job much easier and quicker. With the children running around making paw prints I'm glad our walls aren't all white!"

"As for the reclaimed timber in the bathroom, it was hard to get," says Emma. "What we came across was too new looking so we had to ask our builder to find it for us which he did in a salvage yard. The sink and tap were sourced from a large store and weren't expensive."

Sometimes the success of a project boils to knowing when to call in the experts and when to do it yourself.

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Project information

Find out more about Emma and Andy's **extension and renovation** project in Co Dublin...

SIZES

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After: 158sqm

SUPPLIERS

Architectural technologist
Joe Fallon Design, Dublin 14 and Bunclody, Co Wexford, tel. 01 514 3688/053 93 77633, joefallon.com

Blinds
Mounttown Curtains and Blinds, Glenageary, Co Dublin, tel. 01 2808379, mounttownblinds.com

Kitchen
BeSpace Kitchens and Bedrooms, Stillorgan, Co Dublin, tel. 01 2108364, bespace.ie

Countertops
Murphystone, Sandyford, Co Dublin, tel. 01 2956006, murphystone.com

Flooring
Mulveys of Dundrum, Dublin 14, tel. 01 2964358, mulveys.com

Photography
Dermot Byrne, dermotbyrnephoto.ie

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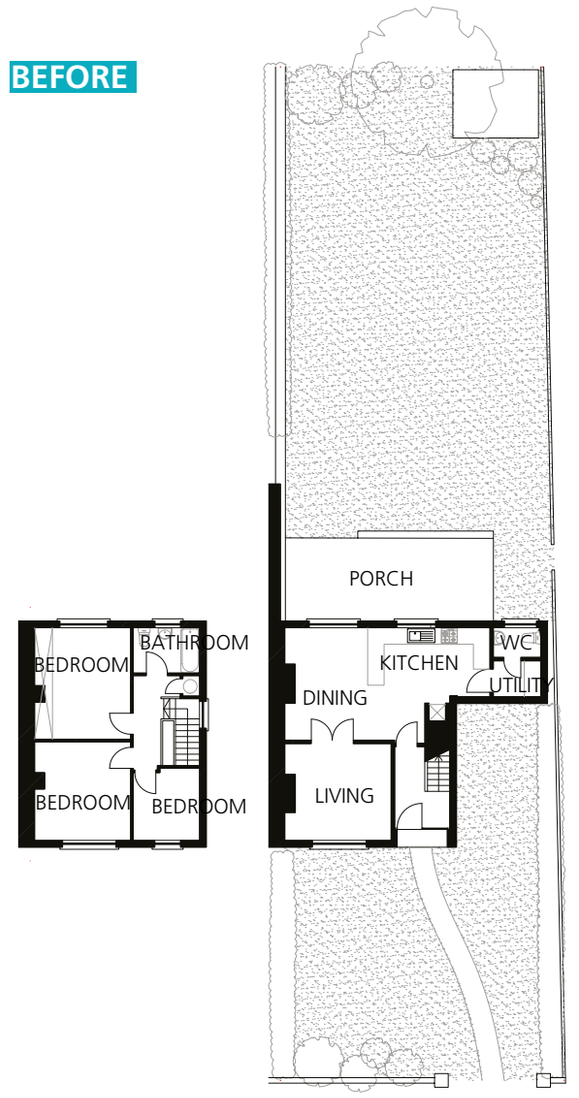

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MAJOR RENOVATION

Reboot

Finding the perfect site with dream views is everything, especially for an avid gardener like Rhona Irvine of Co Down. The trick in this case was to give the semi derelict house that was sitting on it a new lease of life.

Words: **Astrid Madsen** Photography: **Paul Lindsay**

"We had been living in the area for the previous 10 years, in a small semi detached house and we were on the lookout for a bigger garden," explains Rhona.

"It was difficult to find but a site eventually came up; the house wasn't very attractive but it had views from the Lough to the Isle of Man and Slieve Donard, spread over 1.5 acres. The location was just too good to pass up so the possibilities with the house became our focus. It wasn't clear right away what we could do with it and its 1970s façade."

"I work in the National Trust, so I'm interested in history and I simply couldn't work out how to change the house or extend it. Because of the shape it didn't come ➤

Before

naturally to me. With a blank canvas the possibilities seemed endless."

"The architectural practice we chose is well known locally and I was aware of John's projects which I really liked. He and Claire very quickly came up with the perfect idea: to keep the house as the hub for the bedrooms/bathrooms and to rebuild the barn beside the house as a new living area fully benefitting from the views."

"It seemed like the perfect solution. The overall footprint of the buildings isn't changed apart from creating a link between the barn and the existing house, with a utility room and hallway. This allowed us to integrate the garden as another room in the house; the muted style gives centre stage to the views. They're the star of the show."

"We actually started very early with the landscaping; the hedging came first with a mixed native hedge. In my opinion planting is what makes that house. The setting is ideal to create a woodland jungle at the end of the garden, a sanctuary for birds, hedgehogs and foxes. There's also a paddock for horses at the back."

"What was a bare field is now a garden; a neighbour of mine said we'd never be able to turn it into a garden. It's a challenge I was happy to take on! It's a lot of work but I enjoy it, I find it therapeutic."

"The design I came up with for the front of the existing house was cross shaped, a bit like parted hair, with four square beds. The boxed hedges add to the character and complement the roof rafter tails."

Planning and building

"I had no concept of what the barn would look like; again this is where the architect's style shone through. Even the kitchen gels with the overall theme with black panelling outside and inside."

"But there were delays because the planners said we were extending the ➤

'I had no concept of what the barn would look like; again this is where the architect's style shone through...'

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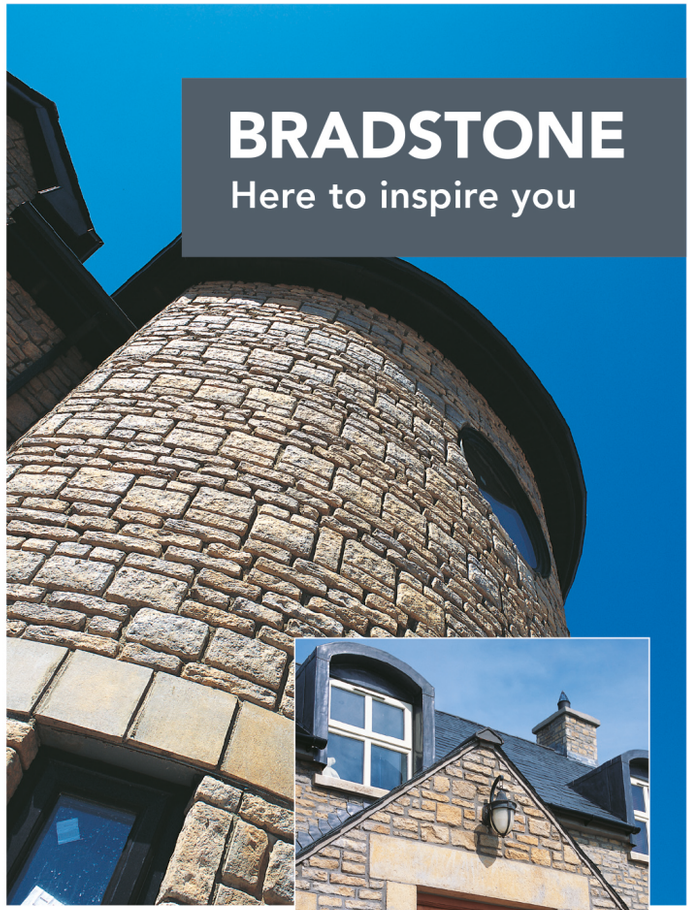

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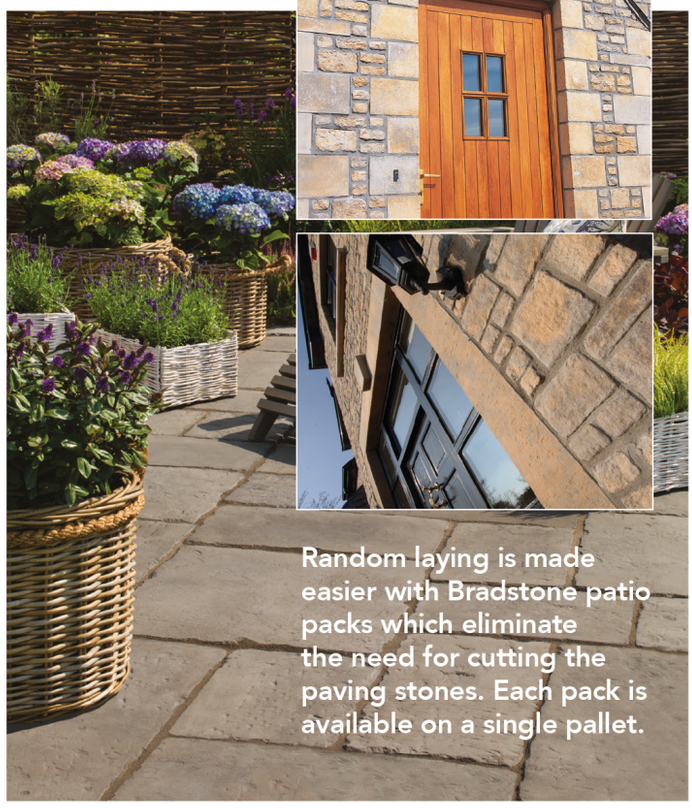

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curtilage of the building with our patio area. It was very frustrating and set us back by quite a bit; the category we were applying for changed as a result, which meant more money."

"In the end because of the levels we didn't make the patio as big as they were on the plans; I commandeered delaying us laying the patio and I'm glad we did. It's a space that's really enjoyable now and we use every inch of the house and surrounding garden area."

"Renovating the existing house seemed much easier when we defined its use; I had ideas in my head of wooden sash windows. For the extension we eventually decided to go for tilt and turn uPVC instead and I have to say they look very well are great for cleaning. We went for wide window sills at garden level."

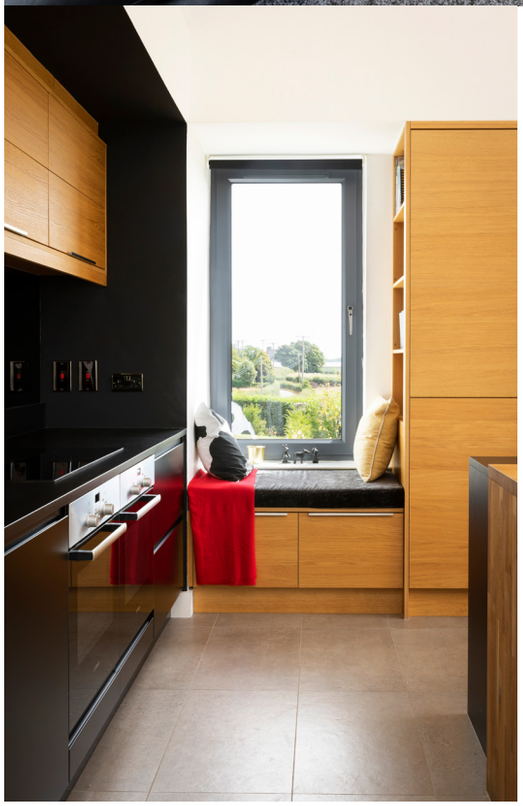
"When the time came to go to tender, we didn't have much knowledge of who to go to price the project. People we knew

'With a renovation there are a lot of unknowns; the roof was taken down and considering the state the walls were in, we simply didn't know what to expect.'

mentioned a couple of contractors and we chose someone we had never heard of before. We went with a fixed price contract and along the way introduced some changes: one was due to having to go back to the planners to get permission to change the ridge height."

"We wanted the 1.5 storey sloped ceiling to be habitable so we had to reapply for that portion. It had taken us a year to secure planning permission for the initial planning application but this change was thankfully much quicker to agree to."

"With a renovation there are a lot of unknowns; the roof was taken down and considering the state the walls were in, we simply didn't know what to expect. Quite a lot of it was rubble so we built it back up again from the level where it was sound. We ➤



Tips

Keep the number of materials to a minimum. We have light oak wood throughout the house and have kept the type of wood consistent throughout. It's a very muted scheme to allow the panoramic views take centre stage.

Open up to the garden. We love how connected we feel to the outside; the link between the barn and existing house helps to achieve this and in summer the large glazed doors just stay open all the time.

Don't fret. I fussed over what tones and colours we might use; at the time it seemed like there were so many things to decide. But I eventually realised these aspects were less significant than I thought they were; they can always be changed. It's just about getting on with it.

Q&A

What would you do differently?

We have an oil boiler on various thermostats for different zones of the house but I would like to have more controls. That's the only thing I'd change. The stove is fantastic and it can get very hot as the house is so well insulated.

The insulation strategy was vital to get right and that was really well managed; in the existing house the outside ground level was above finished floor level so we had to sort out the levels to prevent any damp. We put in new floors and reduced the ground height outside. We also have underfloor heating throughout downstairs. The house is now very cosy everywhere and there are no issues with damp.

In the summer time the house is a dream but I think we could fine tune the heating system for the winter to cut on costs. I'm only starting to get used to keeping the underfloor heating on all the time, just being controlled by the room thermostats; using the controls is a learning process.

What single piece of advice do you have for renovators?

Get involved with the project; you will enjoy living in it more if you do. Towards the end it becomes all consuming. Enjoy it, it's thrilling!

Would you do it again?

Absolutely. I wanted to do it all over again as soon as it was done and even think I had a bit of end-of-project blues!

Were there any surprises?

When we re-roofed an outhouse barn we were hit with a £9,000 bill for asbestos which was an unexpected cost. It felt like wasted money but there wasn't much we could do about it.

What's your favourite part of the house?

I love the kitchen and how much cupboard space we have, all flush into wall, which means no dusting above the cupboards.

had a structural engineer advise us. One of the chimney breasts had to be brought down and put back up again too."

"It's very helpful to have an architect by your side to do the project management," adds Rhona. "I could have tried doing it myself but with an existing building you will always come across a lot of unknowns. The structural aspects were dealt with by John and Claire entirely."

But that's not to say Rhona wasn't very hands on. "I was there for the decisions in relation to finishes and smaller aspects like that," she says. "For instance I was glad to be able to keep a wall exposed in the hallway to preserve a bit of the history of the house. You have to be present to make decisions like that."

Budget cuts

"I'd drop in to the site every day on my way home and would be on site once a week for any questions the builder might have for me or that I may have for him. He was very amicable and good at keeping us informed via a messaging app for choosing things like door handles."

"The builder also made some suggestions; for example he pared back the staircase design to make it more affordable.

The stairs are fabulous from a design point of view; they're very simple but simple is actually hard to get right. Originally they had LEDs which we cut out of the budget."

"In the new part of the house the main change we made to cut on costs was to get rid of one of the two big sliding doors – we realised we would only really need the one," explains Rhona.

"In the barn area, to keep costs down we took the rooflights out. We were worried it would be less bright as a result but I wouldn't want any more light living in it now. We did compromise to save but I think in the right places."

As for the kitchen the architect sketched out the layout complete with island unit and window seat, as well as the hidden cupboard to store everyday 'junk'. "The kitchen company gave us such a detailed spec, I was really impressed."

"What we came up against was finding a reasonably priced plain matt black worktop. I thought that would be easy but getting plain black is actually very difficult, especially because we didn't want it to become a big expense."

"The black cupboards are also all matt black. Matt can be hard to keep but all you ➤

need is to spray and wipe with kitchen roll as you would when cleaning a mirror or windows."

"On the other hand the concrete effect tiles are really easy to keep; we did toy with the idea of a polished concrete floor but we were too far in the process to get it done. I sourced the metro tiles in the downstairs bathroom which blend in with the old Victorian style sanitary ware we chose."

"If you were to ask me to decorate a traditional room, I'd go with a Chesterfield and choose period colours, easy! But for this contemporary build I had to turn to Claire the architect who directed us to design styles which we replicated with cheaper alternatives such as using flat pack furniture and refinishing them for a minimalist style."

Claire also took charge of the lighting scheme. "We debated whether to put recessed spotlights in the living area; the spotlights are good for reading and provide

'... we replicated expensive design styles with cheaper alternatives such as using flat pack furniture and refinishing them for a minimalist look.'

a warm effect. We also used hidden LEDs along the ridgeline and above the windows for a cosy feel."

"For the tones she also pointed us in the right direction with monochrome, we chose mostly greys and whites, throughout the house adding touches of colour with furniture. In terms of the budget we did splash out on some real designer items, especially for some of the light fixtures, and I'm not sure I'd do that again."

"It's funny how the experience has transformed the way I think, even the way I dress; I started to wear a lot of black and monochrome. It's even transformed the way I see design. I now love the contrast of traditional and modern."

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Project information

Find out more about Rhona's **major renovation** project in Co Down...

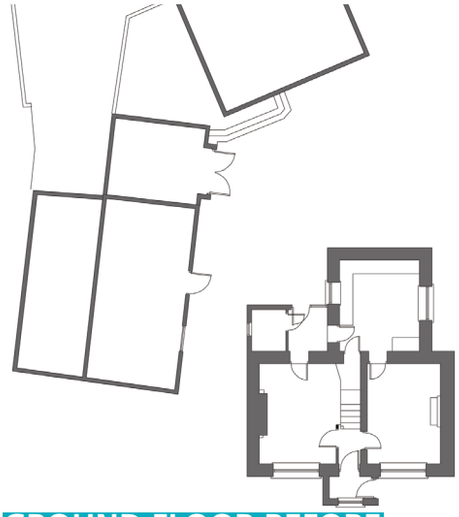
BUILDING SPECIFICATION

Existing house: floors concrete slab with 150mm PIR insulation and 100mm sand:cement screed. Existing stone walls thermally upgraded with proprietary system finished with plasterboard skimmed. Windows: double glazed uPVC sliding sash. Timber cut roof with 100mm PIR insulation between rafters and 50mm PIR insulation below rafter and finished with natural slate.

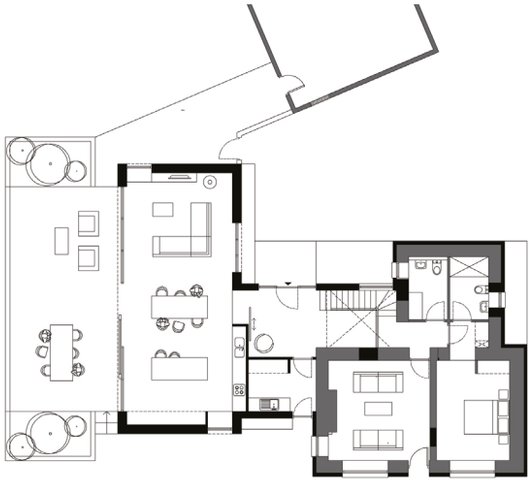
New extension: floors concrete slab with 150mm PIR insulation and 100mm sand:cement screed. Walls maonry cavity wall with 150mm blown EPS bead insulation. Windows double glazed aluminium. Timber cut roof with 100mm PIR insulation between rafters and 50mm PIR insulation below rafter and finished with standing seam zinc.

Heating: oil fired central heating and a secondary wood burning stove.

U-values: Walls 0.16 W/sqmK, floor 0.12 W/sqmK, roof 0.15 W/sqmK, openings 1.4 W/sqmK



GROUND FLOOR BEFORE



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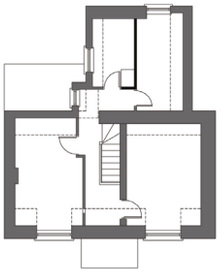

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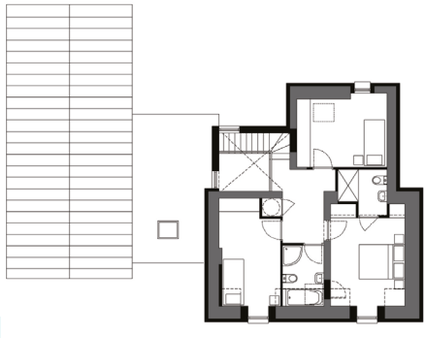

AFTER

SIZES

Size before: 105 sqm

Size after: 190 sqm

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Builder
Gareth Roddy Building Contractor, grbuildingltd.co.uk

Tiles
Ceramica Etc, Bangor, Co Down, ceramicaetc.co.uk

Sanitaryware
The Watershed, Bangor, macblair.com; Edwardian sanitaryware: Burlington

Flat pack furniture
IKEA, ikea.com

Fixtures
Tom Dixon lighting (Heals, heals.com), general Houseology, houseology.com, Soft furnishings: made.com and habitat.co.uk

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NEW BUILD

Modern-day meithal

The story of a community coming together to rebuild a family home following the same principles upon which houses were built in Ireland centuries ago – with the help of neighbours and local materials

Words: **Astrid Madsen** Photography: **Jeremy Zanni and Johnny Ryan**

When Jeremy Zanni and partner Melanie moved to Ireland and stumbled upon a traditional Irish cottage, it was love at first sight. "It was a magical house," says Jeremy, wistfully. "We bought it in 2004."

Since then the couple has taken great care of it; they replastered the entire walls in lime, removing a cement render, and had it rethatched four years ago.

As for the chimney they opted for a stove instead of open fires and so added a flue liner; the voids were backfilled with vermiculite. In March of this year, disaster struck and the couple lost their thatched cottage to two consecutive fires. They had added an extension to the house which the firefighters thankfully managed to save.

"The only explanation I have for the house burning down is that an ember somehow made its was up the flue and ricocheted off the flue cap onto the roof ➤

The thatched cottage before it burned down

The fire destroyed the old cottage but the extension at the back was saved by the firefighters

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and buried itself deep into the thatch," says Jeremy. "We'd been going through a very dry spell so not only was the thatch very dry, but so was the attic underneath."

The fire happened in two stages; the first saw the firefighters filling the chimney with foam and covering the entire roof with the same fire retardant. The next day the thatch still managed to catch on fire and the timber structure burned down, leaving just a central beam exposed and part of the wall structure.

For the first fire the family was awake and the firefighters worked into the night; for the second the ember took its time to turn into a blaze. "If it had happened two or three hours earlier, we would have been still fast asleep, we could have died, we were lucky," says Jeremy.

What the fire revealed was how the house was originally put together, and Jeremy documented as much as he could by taking photographs.

The way the chimney was constructed indicates it was at least 300 years old. "They had built the chimney structure a bit like a ladder with four wooden posts and noggins at regular intervals. That structure was filled with cob (traditional mix of mud, horse hair and straw) and what looked like braided straw. There was some turf in there to fill in some of the gaps."

The actual walls were mostly made of cob with some stone. Exposed, the adobe wouldn't stand a chance against the rain but at this stage Jeremy was already thinking of how he could rebuild the cottage using traditional materials.

"It would have taken me five years but I would have done it," he says. "I would have a thatched roof again although I'm not sure Melanie would have agreed." The couple hadn't been able to insure the house due to the high premiums, so rebuilding from that stream wasn't an option.

"We insured the house for as long as we could; every year the premiums went up. In 2010 they were asking us for well over €2,000 and that's when we had to stop."

But as fate would have it, they lived down the road of local TD Michael Fitzmaurice who took the proverbial bull by the horns.

"He told us we'd have a house in no time. At first I just thought it was a figure of speech, but he meant it," says Jeremy. "It only took four weeks to rebuild the entire house; he cracked the whip and had everyone organised to build a house to excellent standards. He asked me to take plenty of photographs of the construction to satisfy the engineer."

Michael acted as project manager, organising the tradesmen and materials to build a new foundation on the same footprint and a cavity wall structure pumped with EPS beads. Everyone working on site offered their services free of charge; there ➤

The walls were made of some stone but mostly cob (mix of mud, horse hair and straw)

The flue liner for the stove

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were at least two people from each trade helping out when they could. Six masons in total pitched in. Builder's merchants gave free materials, as did insulation and window suppliers.

Jeremy and Melanie's contribution on site was in many ways just as important, and that was to keep the kettle going. Others in the community, meanwhile, took it upon themselves to set up crowd funding campaigns. With so much money pouring in, it covered the extra materials they needed to build the house. What's left, Jeremy says, is being kept as a rainy day fund for the next time the community hits hard times.

And now, even though Jeremy is grieving the loss of his cottage, he's hugely optimistic about the experience he's lived through and for the future. They even found a good omen in the form of a donkey-shoe in the old cottage walls; it's been put back in a similar position in the new house. The couple also managed to salvage the central beam which they will be putting up above their new stove with the help of a carpenter friend of theirs.

This outpouring of goodwill has in fact spurred Jeremy on to get the word out – and the story did get national media coverage. A book and documentary are also in the works. "I like to think the cottage is 500 years old, which it very may well be, because that's how long it takes for the Phoenix to rise from its ashes. Maybe it was all meant to be."

For progress on the build and more images see facebook.com/TheFartownPhoenix

The donkey-shoe found in the old cottage walls put back in a similar position in the new house

The original cottage when it was first rethatched in the 1990s

Photography: johnnyryanphotography.ie

Melanie, Jeremy and their son Finn, along with TD Michael Fitzmaurice in front of the new house that took just four weeks to build

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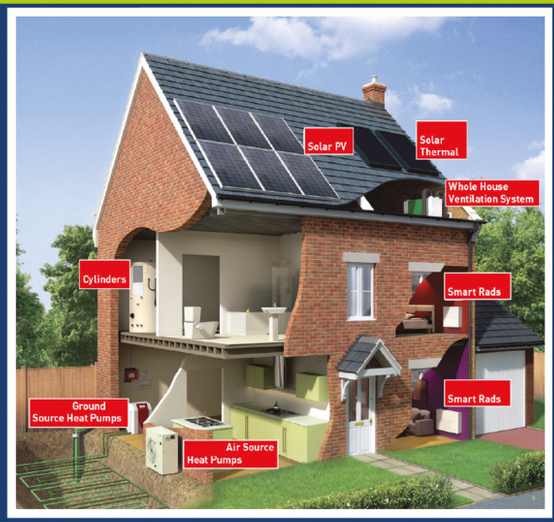

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How much will your walls cost?

In the last issue, we examined substructure and related costs depending on ground conditions; we now move on to the external wall element.

Words: **Keith Kelliher**

For cost purposes, external walls refer to the structure of the main external envelope of the property. In most cases it's the main structural element and also the area that's most visible and, along with the roof and windows, lends character to the build. The cost of external walls can inevitably be traced back to three main headings, those been height, makeup and finish.

The external wall will commence at the internal ground floor level of the property (the DPC level at which the substructure element stopped) and extend to the wall plate level of the roof construction.

Height of the walls

The height of the external wall structure will depend on a number of factors, including the number of floors. Intuitively you could think that the taller the building the more expensive it will be but that depends on the design and square footage. A sprawled design may require more wall material than one that is stacked. There are two other important cost aspects in relation to wall height:

Floor to ceiling heights. The internal floor to ceiling height will immediately have a direct impact on the cost of the external envelope. In terms of the building regulations, Technical Guidance Document F (ROI) outlines a minimum requirement for a floor to ceiling height of 2.4m (8 foot) but this can seem quite low. It is therefore not uncommon for properties to have 2.7m (9 foot), 3m (10 foot) or for striking effect, even up to 3.6m (12 foot). If you plan to use your roof space or convert it at a later date, in addition to making sure the joists are strong enough to carry the weight, there's a calculation you have to make for the acceptable ceiling height too. The situation in NI is a bit less straightforward (see p78).

Depth of the floor construction. The depth of any intermediate floor slab will generally be in the region of 225mm to 300mm but it can be more or less depending on the design. A 2.4m floor to ceiling will therefore have a requirement of circa 2.7m of blockwork in each lift to cater for the floor structure between floors.

We outlined in the last issue that we would use a 139sqm bungalow and a 139sqm two storey property for the purpose of identifying the impact of design and material selection on costs. To identify the impact of floor to ceiling height on costs we analyse both property shapes for three different floor to ceiling heights. The costs are based on a standard cavity wall construction with a 100mm outer leaf and a 100mm inner leaf of blockwork.

What the walls are made of

As one of the main structural fabrics of a building, the external wall element is a fundamental aspect to the calculation of the U-Value for any property. In ROI the new building regulations will require that the wall U-value be even more energy efficient than what was required in the 2011 edition. Therefore the design, material selection and thickness as well as the overall makeup of the external

Element	Qty	Rate	Element Total	Group Element Total		Qty	Rate	Element Total	Group Element Total
	Bungalow					Two Storey			
External Walls (at 2.7m lift)			€7,957.10	€7,957.10				€12,006.52	€12,006.52
Blockwork - Ground Floor	127.33	62.49	€7,957.10			96.07	62.49	€6,003.26	
Blockwork - First Floor	0.00	62.49	€ -			96.07	62.49	€6,003.26	
External Walls (at 3m lift)			€8,841.23	€8,841.23				€13,340.58	€13,340.58
Blockwork - Ground Floor	141.48	62.49	€8,841.23			106.74	62.49	€6,670.29	
Blockwork - First Floor	0.00	62.49	€ -			106.74	62.49	€6,670.29	
External Walls (at 3.9m lift)			€11,493.59	€11,493.59				€15,341.67	€15,341.67
Blockwork - Ground Floor	183.92	62.49	€11,493.59			138.76	62.49	€8,671.38	
Blockwork - First Floor	0.00	62.49	€ -			106.74	62.49	€6,670.29	

The above is based solely on the cost of the blockwork and takes no account of any openings, which in general block layers will measure through when calculating their costs. This calculation clearly identifies the impact of floor to ceiling height on cost whilst also detailing the differential in the external wall element of a property between a bungalow and two storey property with the same floor area.

Element	Qty	Rate	Element Total	Group Element Total		Qty	Rate	Element Total	Group Element Total
	Bungalow					Two Storey			
External Walls (at 2.7m lift)			€3,978.55	€3,978.55				€6,003.26	€6,003.26
Inner leaf only at 100mm thickness	127.33	31.25	€3,978.55			96.07	31.25	€3,001.63	
External Walls (at 2.7m lift)			€8,142.34	€8,142.34				€12,286.02	€12,286.02
Inner leaf only at 215mm thickness	127.33	63.95	€8,142.34			96.07	63.95	€6,143.01	

wall element is now part of a complicated calculation system that can vary greatly from property to property in order to achieve the required overall U-value.

As I outlined in the previous issue, the cheapest way to build a house is usually the way our grandparents did. However with the new building regulations coming into force, traditional methods such as cavity blockwork are finding it harder to compete with newer methods of construction from a cost perspective.

That said the most common method of external wall construction is still based around the traditional cavity wall method. Timber frame has seen a revival in recent years, especially for large scale housing developments where speed of construction and off site quality control are important aspects.

I am covering the three most common wall build up types but there are others including ICF (insulating concrete formwork) which is increasing in popularity and modular construction (steel frame).

Cavity wall construction In order to comply with building regulations the current cavity wall makeup will generally include an outer leaf, a cavity with at least 125mm of insulation, an inner leaf and a drylining or insulated plasterboard finish. The thickness of the internal insulated plasterboard will depend on the overall U-value requirement of the wall. The final cost of this item will depend on that selected thickness but on average the material cost of the plasterboard will increase by 10 to 12 per cent for every 10mm of insulation thickness.

The inner leaf of blockwork will generally be either 100mm or 215mm in width. Where the inner leaf is not carrying the load of a precast floor slab construction it will generally be 100mm wide but 215mm will be required where precast or similar floor construction is required to be carried by the wall.

This change alone will double the quantity of blocks in the inner leaf of a cavity wall as outlined above. A 100mm wide blockwork wall has 9.88 blocks per sqm but a 215mm blockwork wall has 20.22 blocks per sqm.

The cavity is then generally either fully filled or partially filled with 100-150mm thick insulation (either board or pumped-in beads). Again the exact makeup and ➤

thickness of this cavity will dictate the final cost of the insulation materials. The brand and thickness of insulation will vary in cost but on average costs will increase with every 10mm of insulation thickness by about 10 per cent.

The blocks themselves can be standard concrete, insulative concrete up to insulative clay and costs will vary according to this.

Timber frame and Structural Insulated Panels (SIPS) construction The inner leaf will be the timber frame structure which will be specifically designed by a selected manufacturer. The cost will vary depending on the design, member sizes and required U-value and differs greatly from company to company. Timber frame companies will cost their proprietary systems as a whole; the insulation is integrated in the wall construction makeup and this cost is included in the designed system. In standard timber frame you will get an option of different types of insulation, SIPS generally consists of OSB bonded with board insulation.

External wall insulation systems The inner leaf of blockwork is generally the only leaf and as such it is usually 215mm wide as it will form the loadbearing structure on which any floors and roof will rest. The wall is then externally insulated.

How the wall is finished

The outer leaf of a cavity wall is the main rainscreen element of the structure. It will generally not form part of any loadbearing aspect of the design and it can be finished in a number of ways. The outer leaf is most commonly a 100mm thick concrete block or a selected brick finish. Where a stone finish is required this will generally be installed to the front of a blockwork outer leaf.

The difference between the cost of an outer leaf of blockwork and brickwork will be substantial. Although a finished product (an outer skin of blockwork will require an additional finish, most commonly plaster) in itself, the cost of brickwork is expensive simply due to the quantity of bricks generally required.

Assuming the standard brick size you will get 60 bricks in every square meter. The cost of bricks can vary greatly depending on their makeup, colour and texture. In general bricks will range from €0.50 per brick upwards with reclaimed bricks costing multiples of that.

The below example compares the indicative cost of a 100mm outer leaf of blockwork with a coloured plastered finish (we will deal with plastering costs generally in a future issue of this series) and a brickwork external leaf on both of our sample properties. For the purpose of the example I have allowed for a brick at circa €0.65 per brick.

In a timber frame system the outer leaf will be installed in exactly the same manner as that of a cavity wall system but the blockwork will need to be tied in to the timber frame for structural stability.

Following completion of the timber frame kit erection, scaffold will be installed to the perimeter of the building and a selected outer skin of blockwork or brickwork will then be installed as outlined above. It is also possible to install a rainscreen on a timber frame kit using a cement board fixed directly to the timber frame finished in a plastered finish but at present this is not a vastly commonly used approach unless you want to finish the house with cladding.

In an external wall insulation system the outer leaf will in effect be the external insulation system. Costs on these systems vary greatly from manufacturer to

NI REGS

Floor to ceiling heights in NI

The old NI building regulations (1977) stipulated that the height of any habitable room in a building should be not less than 2.3m. As far as I know, that regulation was omitted in later versions and there is nowadays no specific minimum floor to ceiling height.

The exceptions are:
- level approach (for buildings other than dwellings) should have clear headroom of not less than 2.1m at any local obstruction.
- wheelchair accessible changing facility (for buildings other than dwellings) should have not less than 2.1m unobstructed height.
- All (fire) escape routes should have a clear headroom of not less than 2 m
- Stairs, ramps and landings should have a clear headroom of not less than 2 m

The general understanding is that the building must be fit for purpose and permit access for all users, etc.

I have designed roof conversions with 2.1m ceiling heights where space was restricted. You could in theory go down to 2.0m, but this would be less user friendly.

Les O'Donnell, landmarkdesigns.org.uk

Element	Qty	Rate	Element Total	Group Element Total		Qty	Rate	Element Total	Group Element Total
	Bungalow					Two Storey			
External Walls (at 2.7m lift)			€10,090.49	€10,090.49				€15,225.60	€15,225.60
Outer leaf only at 100mm thickness	127.33	31.25	€3,978.55			96.07	31.25	€3,001.63	
Acrylic plastered finish to blockwork	127.33	48.00	€6,111.94			192.13	48.00	€9,222.34	
External Walls (at 2.7m lift)			€17,132.52	€17,132.52				€25,851.36	€25,851.36
Outer leaf brickwork	127.33	134.55	€17,132.52			96.07	134.55	€12,925.68	

manufacturer and it is advisable to shop around.

Some manufacturers will only distribute their product to a restricted and controlled list of installers, which helps with quality control. The external wall insulation system is most commonly finished in plaster or brick slip finish. The cost of an external insulation system will generally be well in excess of that of other methods but it is seen by many as the optimal insulation and energy conservation system available on the market.

There are similar concerns in relation to cost for ICF wall finishes; discuss these with your supplier early on as a proprietary system may be required if you want a plastered finish.

Other cost components

External walls have openings for windows, doors and the like which will need to be factored into your costs. It is common for block layers to charge for their works "through openings". In calculating the quantity of blocks to charge for on a project, block layers generally measure a building as if no openings exist.

This method has been used for generations with the cost of the work in the openings being used to pay for the cost of forming the openings. Whereas the labour may be dealt with in that manner, the materials required must be selected and calculated based on need. These include but are not limited to items like:

- Window sills (concrete, granite, reconstituted stone, insulated)
- Lintels (concrete, metal (insulated or uninsulated) or steel as designed by the engineer on the project)
- Capping stones
- Quoin stones
- String courses (stone)
- Corbels (stone)
- Window head details (plaster or stone)
- Plinths (plaster or stone)

The selection of the materials for the above items will have a direct impact on costs for a project. Traditionally concrete was used for all of the above items but over time imported granite and stone alternatives have become commonplace but these generally come at a higher cost.

Due to concerns in relation to airtightness and thermal bridging, insulated products are becoming increasingly popular and have the advantage of being more lightweight and easier to deal with in terms of health and safety as well as quicker to install.

In order to pull this information together and to outline how again the various designs can impact on overall cost and budget issues on projects, the below example shows the comparison in external wall construction (excluding openings and accessories) costs of two properties of 139sqm floor area.

The two examples show the difference between a bungalow and two storey property with a standard cavity wall construction and plastered finish and the difference between the two properties using an external wall insulation system.

All rates have been left the same for the same works and it is assumed the specification of insulations and the likes are the same on both properties.

The difference between the cavity wall options is about €11,092 excluding VAT. Whereas this is a small difference when compared back to average costing models of €79.79 per sqm (or €7.41 per sqft) it must always be remembered that it is merely for one element of a project and in most cases it is the sum of these types of differences that cause projects to run over budget.

The difference between the external wall insulation systems are even greater but the example goes to show the clear danger of budgeting based on average costs per square meter or square foot. The difference between a standard cavity wall bungalow of 139sqm and an externally insulated two storey property of 139sqm is approximately €15,756 excluding VAT which equates to €113.35 per sqm (€11 per sqm) and that's before any accessories or scaffold are taken into account.

In the next issue, we will look at the element of Floor Construction and outline how again design and material selection can seriously impact on the bottom line of your budget.

Element	Qty	Rate	Element Total	Group Element Total		Qty	Rate	Element Total	Group Element Total
	Bungalow					Two Storey			
External Walls (at 2.7m lift)			€21,795.55	€21,795.55				€32,887.43	€32,887.43
Inner lead of insulated plasterboard	127.33	42.18	€5,370.86			192.13	42.18	€8,104.13	
100mm inner and outer leaf blockwork GF	127.33	62.49	€7,957.10			96.07	62.49	€6,003.26	
100mm inner and outer leaf blockwork FF	0.00	62.49	€ -			96.07	62.49	€6,003.26	
Cavity insulation	127.33	18.50	€2,355.64			192.13	18.50	€3,554.44	€13,340.58
Acrylic plastered finish to blockwork	127.33	48.00	€6,111.94			192.13	48.00	€9,222.34	
External Walls (at 2.7m lift)			€24,886.50	€24,886.50				€37,551.38	€37,551.38
Standard plasterboard to inner leaf	127.33	16.50	€2,100.98			192.13	16.50	€3,170.18	
215mm inner lead blockwork GF	127.33	63.95	€8,142.34			96.07	63.95	€6,143.01	
215mm inner lead blockwork FF	0.00	63.95	€ -			96.07	63.95	€6,143.01	
External Insulation System	127.33	115.00	€14,643.18			192.13	115.00	€22,095.18	

How land and houses are taxed

When you're building a house you usually have to pay stamp duty on the value of the site and in some instances, capital gains tax. Here's what you need to know.

Words: **Rob McOwan**

Stamp duty is the government tax levied for changing the documents that specify who owns a particular property. Property is defined as land, a new build or second-hand property, derelict or not. Normally, the only factor affecting the amount of stamp duty is the value of the property. Capital gains tax is imputed on any profit you make from selling an asset, and this may be something you may have to pay for your site depending on your circumstances and jurisdiction.

Remember that whenever a tax liability arises, HMRC (NI) or the Revenue Commissioners (ROI) have zero tolerance when it comes to its prompt payment. In addition, legal representatives of a person or business have little or no discretion on the calculation of payment or when it is due to be paid. Therefore, whenever either stamp duty or capital gains liabilities arise, it is best to take legal advice and then deal with any payment in a prompt and timely manner.

Stamp duty in ROI

For stamp duty purposes a residential property includes a derelict or uninhabitable house. A building such as a church, schoolhouse, shop or barn scheduled for restoration as a dwelling, may not qualify as a residential property for stamp duty purposes. Contact your local authority to find out if the property is considered commercial or residential.

In the case of a house, stamp duty is calculated on the base price of the house before the VAT is added.

If a site is bought in connection with (or as part of) an arrangement to build a house or apartment on it, then stamp duty will be charged at the residential property rate of 1 per cent on the total of the site cost and the building cost. Otherwise stamp duty will be charged on the site cost at the non-residential property rate of 6 per cent.

If you've paid the 6 per cent rate you may qualify for the Residential Development Stamp Duty Refund Scheme for up to two-thirds of the amount of stamp duty you've paid.

For a single dwelling unit to qualify for the refund the gardens, paths and driveways must not exceed 1 acre (0.4047 hectares). The written document transferring the land must be executed on or after 11 October 2017.

In order to claim a refund, you must do the following:

- File a stamp duty return
- Pay stamp duty at the non-residential rate of 6 per cent on the transfer
- Have received a stamp duty certificate
- Commence building the house on the

'Whenever either stamp duty or capital gains liabilities arise, it is best to take legal advice and then deal with any payment in a prompt and timely manner.'

land within 30 months after the date of the transfer
• Develop the required proportion of the land for residential purposes

A refund claim can be made after building work commences and it must be made electronically.

There is also a reduced stamp duty rate for those who are having land transferred to them for farming purposes; it's called consanguinity relief. When the relief applies the rate of stamp duty is 1 per cent but to qualify, you and the person who transfers the land must be related persons. Consanguinity is defined as being descended from the same ancestor as another person. You must also either farm the land for at least six years or lease it for at least six years to someone who will farm it with the intention of making a profit from it, with terms and conditions applied.

If you do not pay for the property, or the amount you pay is less than the market value of the property, then the transfer of deeds will be considered as a gift and gifted land is liable for stamp duty. However where a property is transferred on inheritance, no stamp duty is payable.

Generally speaking you don't have to pay stamp duty if you're transferring property between spouses, civil partners or cohabitants.

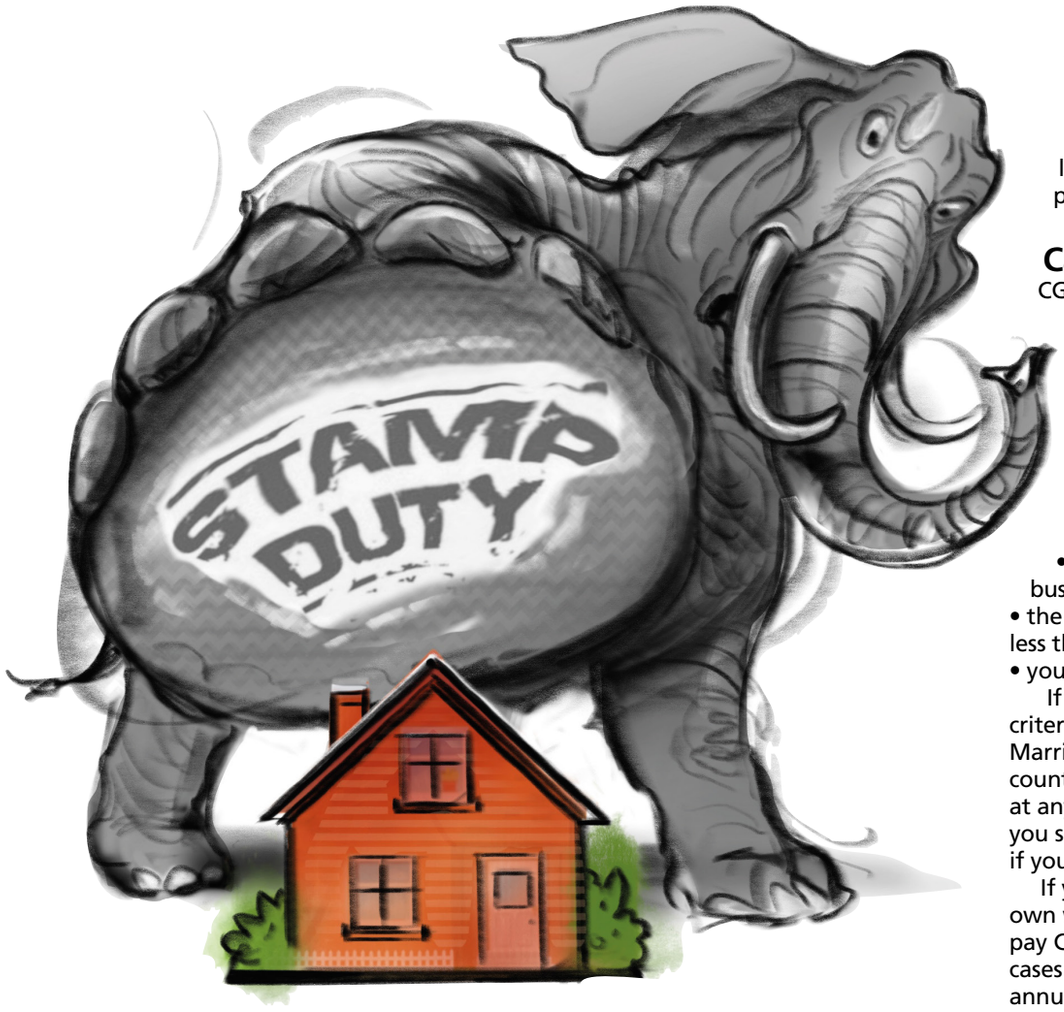
Capital Gains Tax in ROI

Disposing of an asset doesn't just refer to the sale of an asset for money. It includes any transfer of ownership by way of exchange, inheritance or gift. The standard rate of CGT is 33 per cent for disposals made on or after 5 December 2012. Here are the main points to know about CGT for self-builders:
• Transfers of assets between spouses and civil partners are exempt from CGT
• Transfers of assets between spouses and civil partners who are separated are exempt from CGT if they are made under a Separation Agreement or a court order
• The transfer of a site from parent to child for the purposes of constructing the child's principal private residence, where the site's market value does not exceed €500,000, is also exempt from CGT
• There is no CGT on assets passed on death. But when the person who inherited the assets comes to dispose of them, the assets are treated as if they had been acquired at their market value on the date of the death so CGT is payable at that point of selling it on.

Stamp duty in NI

In NI stamp duty is paid when a residential property costing more than £125,000 (or more than £40,000 for second homes) is purchased. It applies to both freehold and leasehold properties and whether you're ➤

Rob is a serial self-builder with personal experience of dealing with land transfer issues; he's been living in his self-built house (pictured) for just over a year.



'If you're moving house and are taking a while to sell your previous home, you will pay a higher stamp duty rate that can be reclaimed as long as you sell the property within three years'

buying outright or with a mortgage.

A first-time buyer does not pay stamp duty on a property worth up to £300,000. By definition a person is generally classified as a first-time buyer if they're purchasing their only or main residence and have never owned a freehold or do not have a leasehold interest in a residential property in the UK or abroad.

If a property is bought by a first-time buyer for £500,000, stamp duty is paid on £200,000. If a property is purchased for more than £500,000, the standard rates of stamp duty apply.

Some exemptions to having to pay stamp duty or filing a return:

- No money or other payment changes hands for a land or property transfer
- Property is left to you in a will
- Property is transferred because of divorce or dissolution of a civil partnership
- Buy a freehold property for less than £40,000

If you plan to use your new property as your main home, or as a mix of residential and non-residential, it's also exempt. If you're moving house and are taking a while to sell your previous home, you will pay a higher stamp duty rate that can be reclaimed as long as you sell the property within three years and claim the refund within three months of the sale.

Caravans or mobile homes are not liable for stamp duty unless they're permanent fixtures.

Capital Gains Tax in NI

CGT is not payable on your home but it is on land and inherited property. If you sell a home you do not pay CGT if the following apply:

- you have one home and you've lived in it as your main home for all the time you've owned it
- you have not let part of it out; this does not include having a single lodger
- you have not used part of it for business only
- the grounds, including all buildings, are less than 5,000 sqm in total
- you did not buy it just to make a gain

If you do not meet all these criteria you may have to pay some CGT. Married couples and civil partners can only count one property as their main home at any one time. The rules are different if you sell property that's not your home or if you live abroad.

If you dispose of an asset you jointly own with someone else, you have to pay CGT on your share of the gain. In all cases CGT is only paid on gains above an annual tax-free allowance of £11,700. Usually CGT is not paid on gifts to husband, wife, civil partner or a charity.

When you inherit an asset, inheritance tax is usually paid by the estate of the person who's died. There may be a need to pay CGT if the asset is disposed of at a later date.

The tax year is from April 6th to April 5th the following year. If they later sell the asset your spouse or civil partner may have to pay tax on any gain if they later dispose of the asset. Their gain or loss will be calculated from when you or they first owned it.

Disclaimer: This article is only a guide. Any decisions about payments, exemptions, reliefs or any other matter relating to reporting or payments need the benefit of professional advice before any decision is made. The article refers to information specific to self-builders for property and land; it does not deal with any other transaction, for example shares and insurance products. Note that the references to NI include England but not Scotland or Wales. NI stamp duty calculator is available on the HMRC website gov.uk/stamp-duty-land-tax/residential-property-rates. ROI's tax calculations are not as complex so you can manually calculate the standard rates. The Revenue website has guides and examples, revenue.ie

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PASSIVE HOUSE PERFORMANCE - TRADITIONAL BUILD COSTS

Claims denied

If you're building in NI, you'll be aware that you can claim the Value Added Tax back on materials. But a worrying trend has been emerging whereby claims are increasingly being denied.

Words: **Dave Brown**

Dave Brown is a VAT expert based in the UK who's come across an increasing number of DIY claims being rejected on the basis that they've been filed too late. He explains the situation.

Who qualifies for VAT back?

The DIY Housebuilders' scheme allows you to reclaim VAT spent on building materials and some other services, used in three specific types of building project:

- Building a new house, from the ground up. This would be a claim for materials alone, where 20 per cent VAT was paid on those materials.
- Converting a non-residential property into a house. This could be a typical barn conversion, or an office conversion. The VAT claim comprises VAT at 20 per cent on materials, as before, together with 5 per cent VAT charged on building works.
- Refurbishing a house that has been empty for more than 10 years. Again, 20 per cent on materials alone and 5 per cent on building services.

The term DIY is a bit of a misnomer as you don't have to do it all yourself. In fact, you don't have to get your hands dirty at all, you just have to be the one commissioning the work.

Extensions don't qualify for the scheme; the idea is that you are creating an entirely new dwelling. Professional services and direct costs for things like scaffolding, plant or tool hire also don't qualify.

Listed buildings used to qualify for zero rated VAT for alterations but that relief ceased in 2015.

On what basis can a claim be rejected?

There are three main reasons why a DIY VAT claim will be rejected. The first is that the build is unlawful, as in you haven't complied with planning permission.

This is a catch all as planning permission requires that you comply with the Building Regulations.

The second reason for rejection is that you're claiming not for a house but for a business, if say you've got your workshop at the house.

The third and by far the most common reason for rejection is that you've filed your claim too late*; there is a three month deadline to submit a claim from the point of completion.

What's the problem now?

This date of completion may sound like a moving target but before 2018, in my experience the DIY team at the HMRC (the tax office) relied on Building Control's Certificate of Completion for their completion date. It was quite simple and straightforward and above all, in line with HMRC's published guidance.

But since early 2018 I've become aware of HMRC decisions saying that completion can be deemed to be when a person moves into the house or when they start paying the council tax.

The problem, of course, is that many self-builders move in as soon as possible to save on rent, before the house is finished to building control standards, and as good citizens start paying their taxes then.

In a case in NI, the house still had insulation and airtightness measures to carry out in order to get the certificate of completion from Building Control; that DIY VAT claim was initially rejected on the grounds that these were not substantial works and the HMRC took an earlier date as their notional completion date.

Advice for those who plan to file a DIY VAT claim

I'd advise self-builders not to move in until they get their Certificate of Completion from Building Control, if they can avoid it.

If they have to move in before the Certificate of Completion is signed off on, then they could theoretically file their claim at this premature point in time. You need documentation to file a claim so they would need proof of their council tax payments.

However filing a claim early would mean the self-builder would be losing out on the rest of their claim. In other words, they wouldn't get VAT back for the building work that's yet to be completed.

Sources at the HMRC tell me they admit their guidance documents need to be improved but that could take 12 to 18 months to revise. In the meantime, self-builders will be making claims without knowing whether they'll be approved.

HMRC MANUAL

What is the point of completion?

The HMRC internal manual VCONST02530 attempts to explain what exactly is the point of completion, but this guidance isn't clear. The HMRC press office explained it like this:

"[A] building is normally considered to be completed when it has been finished according to its ordinary plans. This could be when the property is habitable and fit for purpose or when a Completion Certificate is issued, whichever happens first."

"It has always been HMRC's view that provided there are no outstanding planning conditions to be complied with and the house is fully functional (i.e. having a bathroom, kitchen, heating, etc.), then the house is considered to be habitable and therefore complete. Therefore a property could be considered complete before or after obtaining the completion certificate. Completion of a property is a matter of degree and must be considered on the facts of each case. The date of habitation or the date of the completion certificate is a good indication that a property is complete."

I would add that the way the guidance reads the Certificate of Completion is the prime document, so claimants who are losing out would seem to be doing so because they have been misled by HMRC. Not a satisfactory state of affairs.

Disclaimer: This article is for information purposes only. Always seek professional advice for your circumstances, which are unique.

* According to the HMRC press office UK-wide their DIY Team has received 19,514 claims from 2016 to 2018 and rejected 1,210. From the rejection rate the majority (at least 50 per cent) were rejected because the claims had been received late.

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RENOVATION

Re-treat

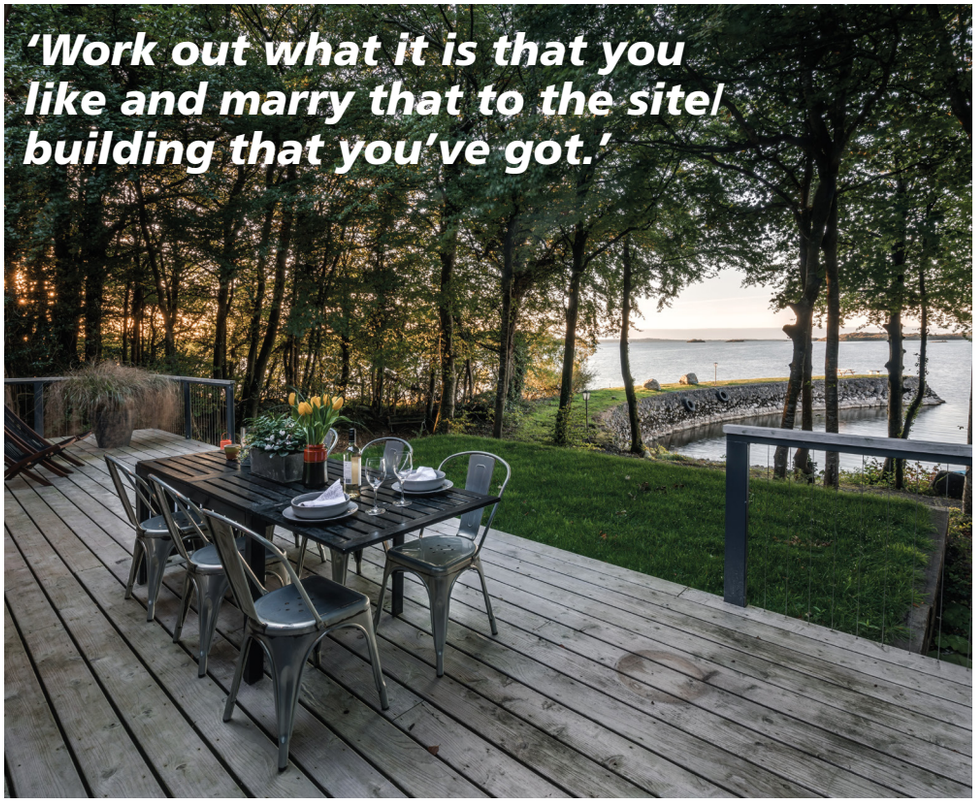
Renovating a home that was once your parents' is a balancing act between modernising the place and conserving childhood memories, as **Egon Walesch** relates.

Photography: **Grant Ritchie**

What's the story behind this house?

It was a house built in the 1960s as a holiday home for an English couple. Guessing from the fact that the wall and floor sections are all the same size I think it came in a kit form. It must have arrived on a lorry but I suspect it came from a local builder's yard because it wasn't factory made. It's clear everything was handcut.

When the English couple decided to sell, they sold it to my parents who had built a number of chalets next door, and my father rented it out. He was German and had an affinity for this style. I inherited the house when he died in 2010.



What state was the house in?

The house needed updating. There was no insulation at all apart from a bit of fibreglass in the loft that my father had put in. I always remember it smelling musty, which isn't surprising because the house is by the lake and surrounded by trees. There's oak, beech and hazel; we also have a lot of ivy and holly.

When did you renovate the house?

The bulk of the work was done in 2013, with the finishing touches in 2014. We interviewed quite a few builders once we had a clear idea of what we hoped to achieve; most of them told us to knock the house down and rebuild it from scratch!

We finally found our builder through a family recommendation. My sister-in-law's brother is very discerning and this was the only guy he'd recommend so we knew we could rely on him.

We're very lucky we had such a good builder because our main base is in London and we needed someone we could trust and who would call us if there were decisions to be made.

How did you go about renovating it?

I work as an interior designer and my ➤

SIZES

House size before: 71 sqm
House size after: 82 sqm
Plot size: 0.2 hectares (0.5 acres)

partner Richard is an architect so it was really second nature to us. The starting point was that I didn't want to change the external appearance much, because of the childhood memories and because it blends in so well with the landscape. It's a simple, unassuming shape and the dark stained wood finish blends in very well with the surrounding trees.

The wood cladding was in brilliant condition considering how old it is. All we had to do was renew the woodstain.

We did however change the inside a lot and ended up extending to one side; this was only a small addition and therefore didn't require planning permission.

The original floor plan wasn't laid out in the most efficient way. To make the most of the compact footprint, we made the hallway smaller and open plan and we also opened up the ceiling to expose the rafters – it used to have a low ceiling – which makes it so much more airy.

We took off the roof tiles, added quite a lot of insulation and refitted tiles above. The two-bedroom layout was awkward with the bathrooms within the bedrooms so we added ensuite bathrooms in the extension.

We replaced the plasterboard throughout and used tongue and groove boards with masses of foam insulation. The rafters, original floorboards and the tongue and groove woodwork have been painted in chalky shades, and in fact we have used just two colours throughout on the walls and ceiling joists.

The windows were very small with a poor view of the lake, so we upgraded them as well and added floor to ceiling triple-glazed windows to give a fantastic panoramic view. ➤

Did you upgrade the heating, hot water and ventilation?

First thing to go in the refurb was the big gas tank by the front door. We installed a log stove with a back boiler to heat the radiators, and back-up slim electric panels which are individually controlled by a remote app. To keep the air fresh and reduce heat escape we built in a heat recovery ventilation system.

What advice would you give people renovating?

Spend a lot of time thinking about the project; try out different scenarios. Think through your options and don't rush in. Above all, work out what it is that you like and marry that to the site/building that you've got. If it's something you really love, don't compromise. For us that meant going a bit further afield than we expected; we had to get specialist plasterers down from Derry to apply the waterproof plaster for the walk-in shower in one of the bathrooms. They were the closest supplier we could find that did this specialist plasterwork; it's applied on the walls and floor and it's made up of ground up stone and marble.

Waterproof plaster

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BASICS

Images on this page from The Rauch House, A Model of Advanced Clay Architecture published by Birkhäuser, birkhauser.com

Thermal mass

Thermal mass is a term you'll have heard in relation to building a low energy house – here's what you need to know about it.

Words: **Patrick Daly**

Not to be confused with 'heavyweight' construction, 'thermal mass' is an approach to low energy building that uses the 'mass' within the very materials the house is built from, to reduce energy use and make your house more comfortable thanks to more stable temperatures.

This can help in the winter months where heat from the sun is absorbed by the thermal mass for release in the evening and night acting as a 'thermal store' or 'heat sink'. Thermal mass can also be used with ventilation strategies to assist in cooling or extraction of excessive heat from a building.

How it works

Materials with high thermal mass can act as a temporary store of heat by absorbing energy from things like solar radiation via windows, the heating system, occupants, equipment, etc. Then at a later time when such heat is no longer available or at lower levels, the heat is released.

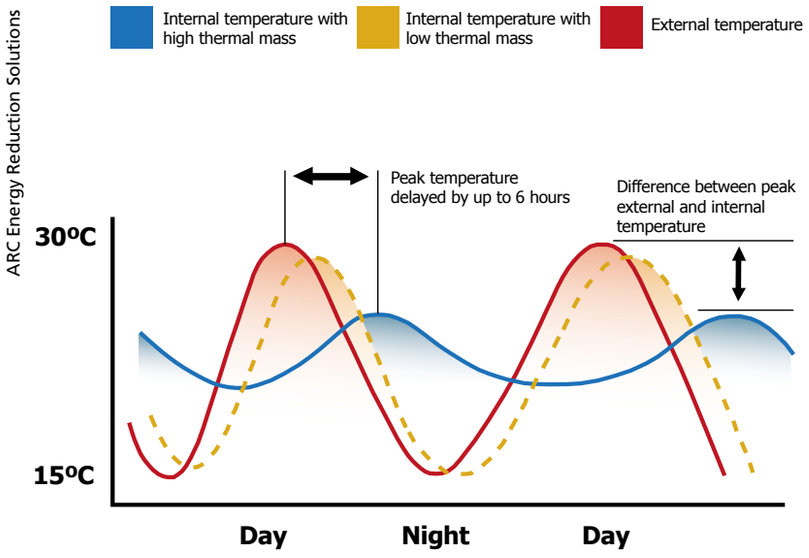
A range of materials can be used as thermal mass stores, including concrete, stone, clay blocks, plaster, rammed earth (pictured above), hemp lime and even wood. Boarding materials, tiles and stone finishes can also assist.

The main properties of a material that contribute to 'thermal mass' are its density (how dense the molecules are packed together), its

Calculations

To prove compliance with the energy requirements of the building regulations, energy assessors in ROI use DEAP and those in NI use SAP. Both software have a method (albeit a difference one) to take into account thermal mass.

Example of how thermal mass can help with temperature fluctuations and peak offset



specific heat capacity (how much heat it can store) and its thermal conductivity (how quickly or slowly heat passes through it).

For example, mineral wool with its low thermal conductivity and its low density, being mainly trapped air within its volume, is very poor as a thermal store. Steel being very dense yet highly conductive is also ineffective as a thermal store, whereas materials with medium-high conductivity, density and heat capacity are more suitable, such as water – which is one of the reasons it is used to store and transfer heat in heating systems.

Lightweight buildings such as framed constructions can incorporate mass either as an inner lining or within internal elements such as floors or internal walls, functioning as a hybrid.

Design considerations

Where and how thermal mass is applied is important and in what thickness. Critically the thermal mass needs to be exposed to the available heat sources: air, radiation etc., so enclosing mass within a lining or cladding typically defeats the purpose and reduces it to heavyweight construction.

In other words, if your walls are made of blockwork they need to be left exposed or plastered over directly. If you insulate or line those walls internally, this added layer will act as a buffer and negate the blockwork's thermal mass capabilities.

Mass can be concentrated in a particular location or construction, e.g. a load bearing wall, but if you can have more evenly distributed mass it will be more effective. Mass can be located to receive direct heat energy – for example in a floor slab receiving direct solar radiation, or can be distributed to receive indirect heat from heated air and indoor radiation from people, equipment or heat emitters such as underfloor heating.

The effective thickness of the mass is an important consideration and a number of studies have identified that only the first 75mm to 100mm of a material are generally used within a daily heating cycle, so the careful selection, location and distribution of the mass is required to optimise its effectiveness.

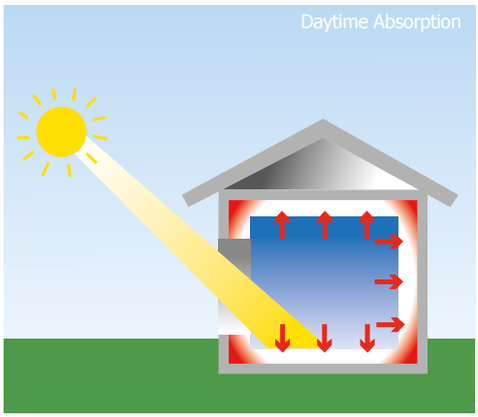
The building will of course also react to the change in temperature, sunshine, wind exposure, daylight etc. which is where energy modelling comes into play.

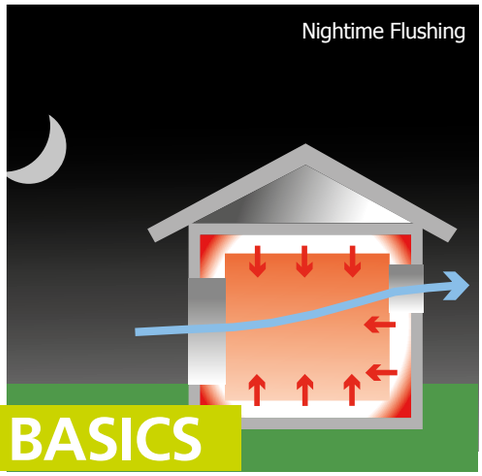
Care need to be taken in the case of underfloor heating; if your screed is too thick or has too much mass this can affect the performance of the heating system as the mass will tend to absorb all the heat, delaying heat being transferred to the room. This is known as slow heat response.

To make the most of the thermal mass properties of any given material in a construction it is good to get professional advice and undertake some energy analysis for its effective application and use.

Recent research
The ROI Department of Housing has commissioned consulting firm Aecom in the context of the roll-out of the new building regulations (see News section). Part of their work found that thermal mass marginally helped reduce overheating; glazing and aspect were more relevant factors with apartments most prone to overheating.

Additional information: Clayblock distributor of Porotherm, clayblock.ie





BASICS

Brise soleil on a new build in Co Cork

The overheating problem

How to design and retrofit homes to maintain a comfortable temperature and accommodate mechanical ventilation heat recovery options.

Words: **John Scanlon**

Architectural designers prioritise heat retention when building new homes and renovating existing ones yet overheating in homes is becoming a real problem.

Stricter energy efficiency measures and external temperature rises caused by climate change and growing urbanisation will increase the risk of overheating in buildings, particularly in homes that rely on passive measures, e.g. ventilation that consists of 'holes in the wall' or vents in windows, to maintain a comfortable internal environment.

We tend to associate overheating with summer heatwaves but it can happen whenever the temperature within a building becomes unpleasantly warm for the occupants for an extended period. Factors that cause it include:

- poor ventilation
- inefficient heating controls
- elevated external temperatures
- high humidity exacerbates overheating

Approaches architectural designers can adopt to prevent overheating, at the design stage

Did you know?

In older properties your house may be suffering from internal heat gains which can be sorted through insulating pipework and adding heating controls.

of your house building project, include:

Adding thermal mass

Given that it takes about four times as much energy to heat a solid mass as it does to heat air, adding thermal mass in the form of a floor screed with conductive floor covering will create a buffer zone. The thermal mass will soak up the heat during the hottest periods of the day and then release it as it gets cooler.

Floors that are in direct sunlight can be fitted with screed thermostats that allow the underfloor heating pumps to disperse the heat to cooler zones.

Additional thermal mass can be created with using granite countertops and polished concrete floor. Don't overdo it, however, as too much thermal mass could make the house hard to heat.

In general, well-insulated airtight light-weight buildings such as timber frame structures work well in summer by keeping daytime heat out. They do not absorb heat well and therefore do not contribute to excessive and uncomfortable night time temperatures.

However overheating can be an issue with lightweight structures too especially if the airtightness and insulation values aren't high and if shading is not provided. Roof space conversions for example are notorious for overheating. Ventilation (usually via open windows) may be the only means of cooling, though this may not be convenient in certain cases. Some thermal mass would help.

Aspect and orientation

A single-aspect building (facing in one direction only) is going to be far more prone to overheating than its double-aspect equivalent. This will however depend on orientation, especially if the main source of excessive heat in solar radiation is your main aspect. When siting a new build, consider multiple aspects to facilitate cross ventilation and reduce the risk of overheating.

Similar to aspect, orientation is a factor you can only control with new build homes and extensions. An orientation trajectory of between 60deg and 90deg towards the south can boost the risk of overheating by as much as 20 percent.

The challenge is to orientate rooms or buildings to optimise light and minimise overheating and solar glare. Measures such as roof overhangs, awnings and shutters can help.

Glazing

Indeed, even though large windows are attractive, bright and inviting, they are also prone to overheating. Glazing ratios involve finding a balance.

The evolution of smart glass is a major development in efforts to combat overheating. It can be adjusted to control the amount of light, glare or heat it transmits. Types of smart glass include:

- electrochromic glass, which sends a low-voltage electrical charge to composite glass panels embedded with electrodes that oscillate to change opacity and thermal permeability.
- liquid crystal glass, which uses polymer dispersal to act in a similar way to electrochromic glass.
- photochromic and thermochromic glass, which changes colour as light or heat intensifies and prevents certain frequencies of heat entering the internal space.
- glass with a low solar emissivity coating or embedded micro blinds.

These materials are prohibitively expensive for private homes; a cheap approach is to install interior blinds but remember that at that stage, the heat has already made its way indoors. Still, a reflective outward-facing surface can help by bouncing much of the short-wave solar radiation straight back out.

As well as the extent of glazing in a home, the makeup of the windows is important. Using triple glazing can reduce the risk of overheating substantially; rely on the calculations of an energy assessor to determine the best ratios.

Cooling ventilation strategies

An effective passive cooling strategy (including night purging) has many benefits, particularly if it can use cross ventilation through the home. Night purging is a passive cooling method in which the heat absorbed by the building is purged when wind forces cool outside air into the house through windows or louvres that open for pre-set periods, while warm interior air is forced outside through a roof vent or higher window opening.

One of the most efficient ways to cool a house naturally, cross ventilation relies on a multi-aspect plan.

MVHR summer bypass function

Most Mechanical Ventilation with Heat Recovery (MVHR) systems have a summer bypass function to avoid overheating as temperatures increase outside. This automated function kicks in when the extract air temperature rises to a certain level, ensuring that hot air is not returned to the house by stopping it from passing over the heat exchanger.

Directional louvers can be adjusted either manually at the unit or remotely to divert exhaust air. Systems with a manual summer bypass function are cheaper, but you will have to get acquainted with how to get it to kick in and most importantly, remember to do it!

It's important to note that the summer bypass function does not provide active cooling; the small amount of relief you will get from the MVHR will be due to air circulating.

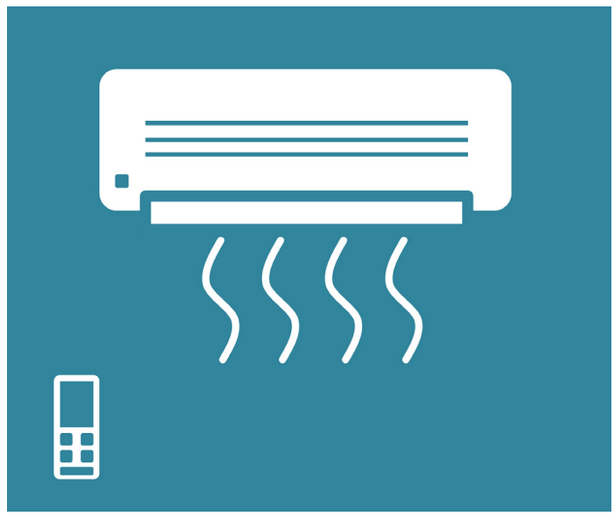
EXISTING HOUSES

If you are already suffering from overheating, here are some options that could help

Planting. A simple, attractive, and cost-effective way to control overheating is to plant deciduous trees around the property. Deciduous trees retain their foliage in summer, providing a shading effect, but their bare branches in winter allow light and heat to filter through. Of course it may take some time for the trees to grow sufficiently to provide the desired effect.

Heat reflective finishes. Light external finishes on homes and green roofs can also be used to stop internal temperatures from rising excessively. Also possibly taking up carpets and putting down tiled floors, with seasonal use of rugs.

Brise soleil. External shading devices prevent the high summer sun from entering the home but allow the low winter sun to make its way through the windows. Plus the use of reflective blinds and the ventilation options discussed in the main article.



The right materials for your kitchen

Last in a three part series about kitchen design, we look at the finishing touches.

Words: **Marion McGarry**

The most common materials you will find in your journey to kitchen nirvana include wood, MDF, lacquer, wood veneer, laminate, granite, stone, concrete, marble and glass. These are only the tip of the iceberg but understanding the nature of these basic materials, including their cost implications, will give you a good start in making the right choices for your dream kitchen.

Roscoe Holt

A slice of wood veneer and wood veneered MDF

Materials for doors

What type of door would you like on your kitchen units? This is often the first question people are asked and many do not expect quite how many there are to choose from. Some doors are made from solid timber, while others are made from laminated or veneered Medium Density Fibreboard (MDF).

MDF comes up quite frequently in discussions about fitted furniture because most carcases (the inside or frame of your kitchen units) are made from chipboard or MDF.

MDF is basically made from wood fibres combined with resins and reformed into panels using high temperature and pressure. The result is a dense, durable board that is a popular material in the furniture industry. MDF can be 'wrapped' in an attractive outer material to make kitchen doors; it's necessary to wrap the MDF because it's not moisture resistant. Depending on what the doors are wrapped with, they can be more cost effective than doors made with solid wood.

Some doors can be wrapped with manmade materials such as laminates, vinyl and melamine and there may be a wide array of colours and patterns to choose from. These can be of matt or high gloss finishes. Lacquered high gloss offers a more expensive but luxurious alternative to laminate high gloss, and if you are considering either of these do ask your supplier for more information on cost and to see samples of both to compare.

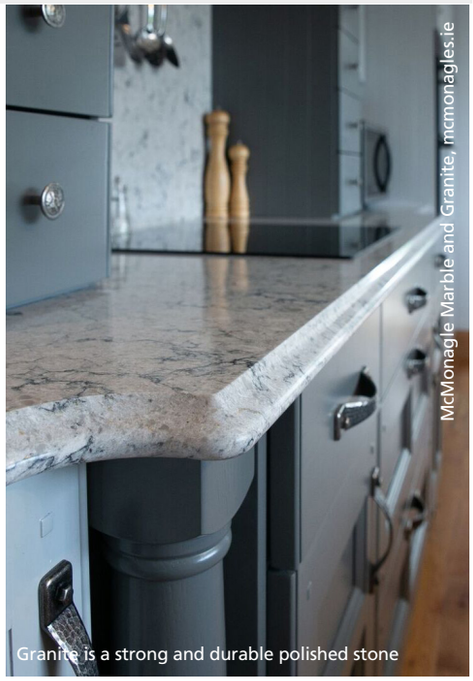
Then there are wood veneers. These are basically a thin slice of wood applied to a tough backing board, such as MDF. Although veneers may often be a cheaper alternative to solid wood, they are not to be scoffed at. For centuries, veneers have been used by furniture craftspeople to selectively show off the beautiful grain of timber. Their use is very notable in fine antique furniture. Choosing a veneered wood door can offer the best of both worlds: the look of natural timber in your kitchen with often less of the price tag of solid wood.

While choosing a manmade material usually keeps costs down, the opposite is true of highly crafted or premium material doors, for example solid timber. You can choose from a vast range of these: what's

McMonagle Marble and Granite, mcmonagles.ie

Pencil edge granite worktop (Santa Margherita Victoria)

Granite splashback



Granite is a strong and durable polished stone

your fancy? Would you like the fiery grain of solid ash or the rustic knottiness of pine? The refined grain of oak, or the blonde simplicity of maple? A rich cherry, or mellow birch? These can be left as close to natural as possible or stained, painted or patinaed. Some solid doors may require extra care, so it's always best to check with your supplier about maintenance and upkeep.

Worktops: so much to consider

There is so much to choose from out there in terms of kitchen worktops (countertops) but generally you have two types to choose from: manmade and natural. It is always worth checking whether your kitchen manufacturer outsources the supply of these to specialists, and to check how long a time, if any, these will delay the fitting of the finished kitchen.

Natural Materials

Let's talk about **granite** first, as it's undoubtedly a popular choice for new kitchens. Granite is an extremely hard and durable polished stone. It is heat resistant and unlikely to scratch or chip, so in terms of durability it is superior to laminated worktops. It also tends to be costly as it's so labour intensive. Some granite can be sourced here in Ireland, while others may be imported from as far afield as India and China.

As it's a natural material you need to be aware that many naturally occurring grains and veins can make the granite you choose from that small sample in the kitchen showroom quite different to the large piece that eventually arrives at your door. Choosing a granite worktop can also add to the fitting time of your kitchen.

Although some people consider it to be unyielding and a little cold, polished granite is undoubtedly a material of unrivalled beauty. As it is made up of interlocking mineral crystals, the most common being quartz, it has a luxurious depth and often sparkle throughout. And there are massive advantages to granite too; you can have an undermounted sink, hob, splashbacks all made from granite. Splashbacks can be applied on a full wall (to replace wall tiles) or quarter of the way up.

Marble is undoubtedly a material of breath-taking loveliness and luxury, with many colour-hues to choose from including whites, greys and pinks. But it is tellingly not used as often as granite for domestic kitchens. Softer and more porous, it does not withstand stains and general wear and tear as well as granite. In addition, marble can prove to be more expensive than granite.

A **solid wood worktop** gives a beautiful natural look to a kitchen and choices can include iroko, oak, and beech. However, when used with solid wood doors it may not provide much of a visual contrast and works best with painted kitchens. It should be noted that wood worktops will naturally darken over time and will require periodic maintenance such as regular oiling. ➢

Wood worktops tend to work best with painted kitchens

Quartz worktop

Engineered

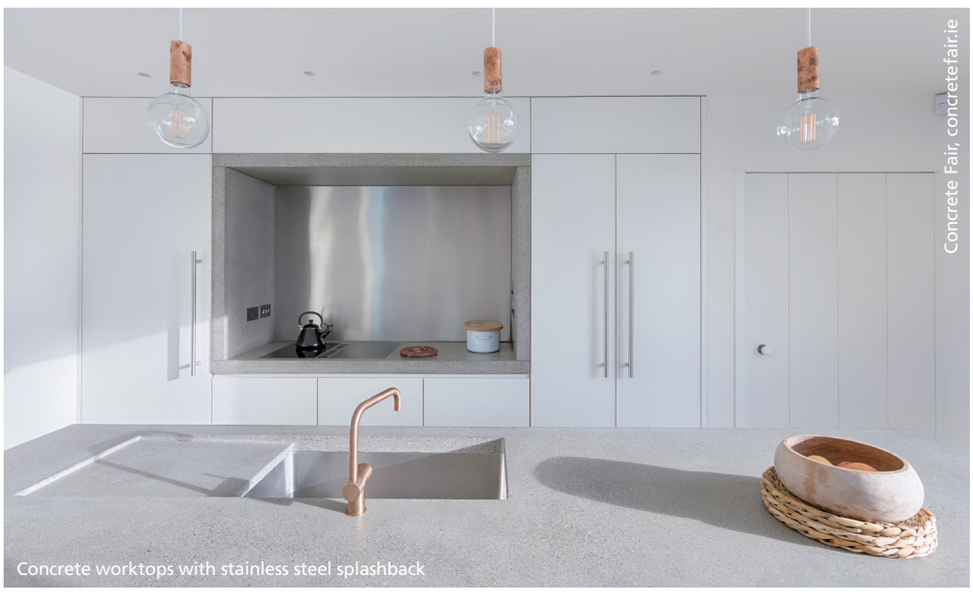
Laminate worktops are a cost effective option and come in a wide variety of colours. Many of these are composite board encased with melamine, and customers can choose between matt or high gloss finishes. They come in large sheets which are cut to size easily by your kitchen fitter on site. As there is not as much work involved with these, they are much less expensive than granite or composites. Although extremely hardwearing, these won't withstand a sharp knife, or a scalding hot pan set down on them so be prepared to always use a chopping board or worktop saver.

Solid surfaces are seamless, non-porous, hygienic, and tactile to the touch. They are generally stain and scratch resistant. Because of their heat resistance and seamless nature, composites can be extended from worktops to form sinks, hobs, backsplashes on walls, island panels and so on. It is a smooth material which is very easy to keep clean. There are lots of brand names of manmade composite materials for worktops but the most famous was developed in the 1960s. By the late twentieth century it had become a game changer as an innovative worktop material for domestic kitchens (and in other applications such as commercial environments). In terms of cost, work surfaces made from composite materials tend to be on par with granite or a little cheaper.

Generally speaking, **engineered stone** is natural stone mixed with colouring and resins to create a non-porous hardwearing surface. It is often called Quartz, however there are many different specific brand names to choose from. It has the glossy look of granite with a more uniform pattern that represents a safer option in that potential sweeping veins are eliminated. Although some would argue that because of this, it does not look as natural as the real thing, they do come in a near infinite array of colours.

Industrial

Concrete is an increasingly popular choice for those who want something a little different. Common options available include polished concrete tops in a classic concrete shade with mild exposed aggregate, while others can seek a "rawer" more industrial look. Most polished concrete countertops can be made off site and delivered once the kitchen carcase is in place – the exception is with requested "wet cast" worktops which are cast on site. Again, choosing a concrete worktop may add to the time it takes to complete the fitting of your kitchen and if in doubt ask the supplier. In terms of maintenance, polished concrete should be treated like most other counter tops and chopping boards should be used.



Concrete worktops with stainless steel splashback

Stainless steel is a great choice when seeking to create an industrial, edgy feel in a domestic kitchen for worktops, splashbacks, sinks, electrical appliances, extractor fans and plinths. It has long been the material of choice for commercial kitchens due to its hygienic nature and durability. Obviously, it is resistant to water, heat, liquid and most stains. However, it will scratch, but many prefer this as it adds to its character. It will also show up fingerprints. In a domestic kitchen these factors may grate over time, as will the fact that steel can create a chilly, noisy feel in a room.

Glass worktops are available in a near unending range of colours and can be easily matched with the overall décor of your kitchen. While glass worktops are smooth and hygienic, they do require extra care as they can scratch. However, glass splashbacks really are worth considering. These can match in with glass worktops or be combined with a different

Concrete Fair, concretefair.ie

worktop to offer a stunning alternative to wall tiles. If you are planning a glass splashback in your kitchen it's best to plan ahead in terms of wall sockets to ensure it looks as harmonious as possible.

Costs

The cost of your kitchen will very much depend on the door choice, overall size and number of units, so it's always best to get a price by bringing the measurements of your room (or an architectural plan) to your kitchen designer / supplier. Materials can increase in price when there is more labour, or production processes involved. Laminated or veneered MDF can be the most cost-effective solutions for kitchen doors. Solid wood and painted doors can be more expensive, as can highly lacquered finished doors.

Laminated worktops are the least costly while solid wood worktops can be anything from €800/£700 upwards. Granite, glass, concrete and composite worktops are typically priced for labour as opposed to per square metre. You can expect granite worktops to cost anything from €2,000/£1,800 upward, depending on the type of stone chosen. Concrete and composite worktops will usually fetch a similar price but costs can vary widely.

Adding colour

Only after consideration of the functional elements of storage, appliances and materials can we think about the creative stuff such as colour. This is the fun part of choosing a kitchen and can reflect your personal interior design preferences. One word of advice here is that, as kitchens are expensive, you want to get longevity from yours in terms of style, so try to avoid microtrends and choose a classic design that won't date quickly. Painted kitchens are on-trend at the moment and choosing one means you could always repaint in a few years. Otherwise, keep the kitchen units themselves fairly neutral and add fashionable flourishes using materials that are inexpensive to change such as wall paint and accessories. Whatever you decide, have fun planning and designing the future 'heart' of your home.

Always check with your supplier – costs, lead times and materials may vary. Some suppliers may not be able to offer items in this article while some can offer alternatives. Most of all, don't be afraid to ask them as many questions as you need to about the design, project management and materials to ensure that the purchase of your fitted kitchen is as stress free as possible.

McMonagle Marble and Granite, mcmonagles.ie

NEW BUILD

Dream kitchen on a budget

Even though it's fun to plan the kitchen, there's a lot of stress associated to the amount of money you will be spending on it.

Words and Photography: **Vivienne Hanna**

I moved into my forever home almost three years ago and looking back, I tackled the kitchen as I did any other part of the project. With plenty of research and attention to detail. Here's a guide to how I approached it.

The design

The inspiration was my local rural environment, passion for furniture and charity shops. I love old things repurposed and quality furniture pieces; infact I came across an old chiffionier and painted it, long before there was any kitchen planned. I knew any kitchen I would choose, would have to match it! I also picked up a Parker Knoll Chair and Stag two seater love seat, both of which needed a facelift.

Over a few years I had ripped pictures from various magazines, flyers and books and put them all in a file. This started probably around the time we actually made the decision to build, long before we had acquired a site. If I was at the dentist and flicking through a magazine and saw something, I would rip it out and deftly stuff it in my pocket. I was only collecting the images I really loved.

After a few years of collecting, I bought a scrap book and one wet Sunday afternoon decided to start sticking the pictures by house area, into the book. I did it with my daughter who was young at the time and made a game of it. It wasn't ordered, we stuck all the pieces of ripped paper into the scrap book willy nilly, but remarkably an eclectic style emerged.

Once we had our house plans drawn up and were happy with the room layouts, I was dreaming about my kitchen. It was the biggest room in the house and I knew it needed to be a homely place where we would want to hang out.

I was searching through magazines – in fact I took out a few subscriptions to help me with ideas. I also spoke to friends and family and when visiting, I took great interest in other people's kitchens and got ideas and advice from them.

Having renovated two houses before, I knew I would have to compromise on a

budget so I needed to be realistic. I also had my trusty book of cuttings which reaffirmed to me what I liked.

I would say the kitchen layout was pretty much decided when we had the room shape. There are four internal doors in the kitchen, large patio sliding doors and one entrance (with no door) into the TV room/snug.

Kitchen shopping

We went to a visit a lot of showrooms, at least nine! They were in four different counties. We probably took some information from each one. I had a design in mind as I knew we had limitations and gave it to each kitchen company to give them an idea of our style.

The reason we went to so many places was that they were all so different and going from one to another, we never actually achieved or got what we wanted. Surprisingly the level of service varied considerably. We thought we would go get a plan/price and get it sorted, but it wasn't so simple.

We thought it would be straightforward to get three costings. Instead two companies persisted in telling me they had sent me plans (they hadn't). Another said they were doing it, another priced immediately and were chasing me for a deposit, another said they would give me a plan once I paid them £1,000. Another told me up front my chosen style would be about £25k+ (I nearly fell off their bar stool in shock). There are many different stories, I could go on.

It was very time consuming and quite exhausting. In fact, nearly all of the companies had something I wanted, but really only one company got it right for me. After one hour of discussion and me showing my plan, I went back a week later. Their plan was ready and was perfect.

They were fab to deal with and offered incentives and suggested changes to make the kitchen affordable. They really were excellent, but still it was over our budget and we just couldn't afford it. Since then, I have recommended them many times!

I did get three quotes of a sort, although none were like for like. I decided to separate all the parts of the kitchen and buy them myself in the hope it would be more cost effective.

In the end, I chose an experienced cabinet maker, who worked to my basic but evolving design, who got the kitchen sprayed

and he fitted it beautifully. I bought the knobs and handles online.

Choice of materials

Our kitchen is classic yet contemporary. The carcases are made from finished plywood which is solid and durable. We got a light coloured spray finish on the doors and panels. The larder was a bit of an obsession I had, from having a scullery in my parents' house at one time. I also felt apart from great storage, that it would reduce my kitchen cabinetry costs. But that turned out not to be the case!

Although plywood is more expensive than OSB or MDF, it is also very sturdy and aesthetically pleasing to look at and to touch. I felt it was worth paying a little bit more for. The style of the doors is referred to as shaker.

My choice of kitchen was inframe, or having the doors and drawers sit flush within the carcase, something I didn't even know about until I saw it in all the pictures of kitchens I liked. This is a particular style, costs more than standard, but I didn't want to compromise on it. I felt my kitchen was to be the heart of the house so, was willing to get it right, within reasonable cost.

I had originally opted for a hand painted kitchen finish, but once I got the names of the painters who specialised in doing this, it turned out to be incredibly expensive and also not so easy to work with. They were in great demand and wouldn't commit ➤

TOP 5

Design tips

1 Use the kitchen triangle stove/fridge/sink as your guide to start thinking about the design.

2 Think about how you actually live: prep area for school lunches, types of meal you prepare, where to put dishes in relation to dishwasher, etc.

3 What does it need to be for you? Just a kitchen or a kitchen diner? Will it include the living room?

4 If you cook a lot, chop, prepare, think of your view. Make it nice so you're not staring at a wall.

5 Set aside a contingency: for a high end finish and something to last for years and dress the room we needed to invest £5,000 more than we had budgeted for. We had to recoup this from other parts of the build.

to a timescale. At the time, I was very disappointed, but, as I had previously had a sprayed kitchen, I knew it was very durable and would be good for family use.

When choosing worktops, there was much debate between my husband and myself, simply as he really wanted wood in the kitchen particularly on our island (3m x 1.2m). Whereas I personally had always wanted a marble style finish and persisted until he agreed. Well he never really agreed and we still debate it.

So I looked at laminate, engineered stone (stone mixed with resin), and natural stone (marble and granite). My preference was marble for sure but then I was gutted to learn that the marble I liked wasn't a good choice for the worktop as it would mark easily. Lemon, beetroot and red wine would stain it and that wouldn't have been good for us!

Choosing the more practical route, I decided on granite. A more costly option than laminate but similar in cost to the higher end engineered stone. I felt it was one of the things I didn't want to compromise on.

I later learned about the different grades and their costs. I also wanted the granite in one piece, so I was more restricted to the type of granite I could choose. It took me about three months to get it right and within budget.

I went to the wholesaler and got a couple of samples and lived with them. I picked one, but a month later had changed my mind. I then went back and took a very long time perusing and finally made my choice. I took the sample home and looked at it every day for a few months to make sure I would be happy. It was going to be such a cost, I had to get it right.

Appliances, fittings and installation

I always wanted an enamel double sink – which wasn't in vogue in any of the showrooms at the time. I felt it matched my kitchen design. I wouldn't compromise on it, I actually bought a new one second hand for £90 (retailed at £360). Essentially, I needed two sinks, as we have a busy family life and also I cook a lot and I needed the generous size for everyday living.

I went to a host of shops for appliances but chose the place where they had the right price, the right attitude and were willing to work with our cabinetmaker, at our timescale, which was a great help. Their aftersales service and care has been exceptional and we continue to use them for other household items.

As for installation we had two very experienced kitchen fitters; they worked at a whirlwind pace and made everything off site. They were happy to work with me on fitting the appliances and to install the knobs and handles I had purchased separately. They are a great team and very skilled; it took about a day to install.

Then the plumber came for the sink and instant hot water tap. Once this was done we got the granite people to come and make a template. Once it was all confirmed the granite came about a week later. It was a five man lift to get it into the house and to install. A big cheer went up when it was in place!

Floor and wall finishes

Since we had a timber frame house we had chosen to dryline our walls (no skim coat on the plasterboard). Instead of waiting for a painter to do room by room, we got the whole house sprayed inside early on, prior to second fix. It made a great difference and has allowed us to live in a much nicer environment. The kitchen as with other rooms, still hasn't been 'officially' decorated other than the original spray finish.

The floor tiles were 80cm x 80cm, grey concrete effect. Dull low shine finish with some mottles, it helps with a busy family life and I am not stressed out trying to keep them pristine.

The kitchen has a great flow and is easy to navigate and clean. Floor tiles are easy to mop or steam and I also used tiles as my skirting, so very durable and my paintwork isn't affected. The granite worktop is a dream to keep, so all very easy. As the granite is a light colour it is definitely easier to manage/polish than a dark colour.

COSTS

Original budget: Kitchen/Appliances/ Worktop £10,000, Utility £2,500, Larder £1,000.

Final cost: Kitchen £10,000, Appliances £5,000, Granite Worktop £2,500, Utility £1,100, Larder £1,000

SUPPLIERS

Granite worktop and splashback
Lamont Stone, lamontstone.com

Appliances
Sourced through Basil Knipe, Ballymoney. Side by side Liebherr fridge and freezer, Electrolux dishwasher and Stanley double oven with grill, slow cooker and induction hob.
Co Antrim, basilknipe.com

Tiles
MDC Tiles in Magherafelt, mdctiles.com

Step on it

Putting carpet aside and assuming the budget for real wood flooring, ceramic tile or polished concrete is just not there, what are your alternatives? There are three main types: vinyl, linoleum and laminate flooring.

Words: **Peter Bonsall**

Along with wall and ceiling finishes, the floor coverings will set the tone of your rooms. The aim is that once installed, the floor should be a backdrop for carefully chosen pieces of furniture, rugs, pictures and artwork.

LVT Reclaimed Chestnut

LVT and lino

If your choice is driven by a desire to be environmentally friendly, then lino could be a good choice. The 'lin' part of linoleum originally comes from the use of linseed oil. This is derived from the flax plant by pressing the seeds to extract the oil.

Mixing the oil with wood and cork flour and fixing to a flexible backing is the basis of producing the finished product. A process first developed by Mr Walton way back in 1863.

Of course, modern production methods and development produces a range of linoleum products that are readily available and affordable.

Using lino in an interior scheme offers great advantage for wet areas such as bathrooms where there are restrictions for wood flooring for example. It is also very durable due to its use for commercial environments. Creating interior schemes for homes pose many challenges but clever use of colour, light and layout could make for interesting results. Especially in children's bedrooms and play areas.

LVT Prairie Oak

While Mr Walton was busy creating his first linoleum, Frank Furness was also experimenting in using a new floor tile product made from polyvinyl chloride, known better as PVC. During the 1960s, luxury vinyl tiles (LVT) were developed further and started to become a popular choice.

Nowadays, LVT comes in many different shapes and sizes such as tiles and strips. The construction is generally layered to keep the product flat and the surface has photographic images fixed under a protective and durable wear layer.

Like lino, LVT can easily be used in bathrooms without an issue and this, combined with its durability makes it a good choice for areas such as kitchens and utility rooms.

Many LVT products are based on more costly wood flooring designs such as herringbone and panelled floors with borders. Creating a similar look for a fraction of the cost.

Where wood flooring in cleaner grades may be the design brief, with LVT this ➤

Marmoleum by Forbo, forbo.com - image courtesy of Ambience Flooring

Linoleum

can be achieved without any uplift in the cost as one image is simply swapped for another. Unlike real wood flooring which rises significantly in price when a knot free or 'prime' grade is desired.

LVT and lino installation

When installing over a concrete screed floor, it is important to make sure that the surface of the subfloor is flat and level and doesn't have any pockets or craters that would ultimately be reflected in the final finish. It is worth considering using a levelling compound over the screed where the surface isn't up to scratch, making sure that the compound fully adheres to the subfloor to avoid any delaminating issues in the future.

Another feature to check with any screed or compound is that it is fully dry before installing the LVT or lino. Check with your supplier on the requirements of the screed before their products can be laid. With linoleum, being a natural product, it is also important that the product is acclimatised before being installed. Again, following manufacturer's instructions.

When your floor is flat and dry, LVT and lino need to be fully bonded to the surface. This means that the surface must be prepared for the application of the adhesive. Many adhesives are available on the market and are generally solvent free. Check with the supplier of the LVT or lino as to what product they would recommend.

Also check if your subfloor is porous and would need sealing with a PVA coat or other proprietary sealer before using the adhesive. Quite often, the cost of carrying out this work is cheaper and safer during the build than potentially having a problem later on.

Once all of this preparation work has been addressed, it is time to start laying the chosen product. Whether it's sheet, tiles or individual pieces, preparation and thought as to where the joints and how the overall layout will look is the key to any successful installation.

LVT Prairie Oak

Any joints or texture to the floor will look better with direct light along their length

LVT Weathered Hickory

TOP TIP

Underfloor heating

LVT, lino and laminate can be used with underfloor heating but the design and control of the heating system must take in the specific requirements of the product to be used. Make sure you follow the floor finish manufacturer's requirements when designing a floor with UFH.

Measure the room and put pen to paper and spend some time working out the best layout for the room under design. Key factors which will affect the layout include where the main source of light comes from in the room as any joints or texture to the floor will look better with direct light along their length rather than in shadow. Other factors include where the entrance and exit of the room are and how that will align with the design of the floor.

Laminate

Laminate flooring is made from a photographic design sealed with a resin top layer, (which is tough, durable and easy to clean), and high density fibreboard.

Laminate flooring offers a huge range of designs, shapes and sizes and textured finishes provide perhaps the closest alternative to real wood flooring.

In recent years, designs have become more sophisticated with high variation of the wood grain design. In the past, the repeating grain pattern gave away the fact that it was a laminate rather than a real wooden floor. Modern laminate floors have a high number of boards or planks with totally different grain patterns to closer reflect the overall look of a real wooden floor.

Installation is much quicker and easier than either LVT or linoleum. Each individual piece of laminate floor has a connecting edge which locks into the adjacent piece. Known as a 'click' system, this has virtually removed the need for glue to be used in the installation process. Floors are laid on top of an underlay foam which is rolled out over the sub floor.

Whilst it is still important to make sure that the screed is dry and flat, there is less need for a perfect "flawless floor" as the laminate will span over minor undulations in the screed.

Acclimatisation and checking on the humidity of the room where the flooring is to be laid is still an important factor in the preparation of laying a laminate floor. Check with the manufacturer's instructions what each element needs and make sure the requirements are adhered to.

Also, thinking carefully about the layout is an important factor, direction of the planks should be along the length of the room wherever possible. Where the laminate floor meets the skirting board and architrave, beading which matches the floor can be used to cover the expansion gap that is normally required between the laminate floor and walls or other protrusions in the room.

Alternatively, for an even closer match to real wood flooring, the skirting can be removed, and the laminate floor run under the skirting whilst still leaving the required expansion gap. Most manufacturers also provide skirting finished to match the laminate floor.

Laminate

COST

How it compares

All three finishes are generally less costly than having a real wood floor installed in your project. Laminate flooring is the least of the three with an average price band of €20-50/£15-45 per sqm including underlay and installation. With LVT and linoleum, the prices are a little more expensive due to the complexity of the installation process with an average price band between €40-100/£35-95 per sqm.

LVT Reclaimed Chestnut

All LVT images from Karndean supplied courtesy of Ambience Flooring, ambienceflooring.co.uk

Additional information: Two major lino producers include Tarkett (cradle to cradle certified) and Forbo with a product known as Marmoleum which is made from 97 per cent natural raw materials and is biodegradable. Amongst the major producers in the LVT sector are Karndean and Amtico. Key suppliers in the adhesives market are F.Ball and Mapei with a wide range of products for many types of subfloor surface. Laminate flooring is dominated by Pergo, originally a Swedish company which is now owned by Mohawk Industries of US, the world's largest flooring company. Mohawk also owns another major player in the Laminate floor market who are Unilin and their well known Quick-Step brand.

Where to live while you build

Whether you're building a totally new house or doing a substantial makeover you may need to think very carefully about how and where you live while it's all happening.

Words: **Andrew Stanway**

Building a house from scratch or doing massive alterations to your existing home can be both exciting and terrifying at the same time. But unlike other major life projects it can also be exceptionally disruptive to your personal and family life. Unless you're doing a seriously large renovation or extension to your home you'll probably want or have to stay living in it while you build. You could also stay put if building your new house in your garden or on your land.

However, if you're building an entirely new home in a new location there are accommodation issues to consider. And given that you could be working on your new build for two years, where and how you live could materially affect your finances for the whole project. As many people doing a self-build are watching the cash, this can become a serious issue.

There are three major options: stay living at home, rent somewhere close to the site or live in a temporary structure.

All the rent you pay is money in someone else's pocket

Stay living in your current home

At a time when there'll be so many changes and stresses, the stability of not moving house and staying put could be a real life-saver but in addition to the cost, you will need to factor in what the tax office will have to say about it.

Pros

- It's what you've got and it's familiar – and free if you don't factor in a mortgage.
- Your family will probably like it best. And this is no small matter. Their lives will be altered by your focus on the new build and the levels of stress that go with it. Anything that keeps the family's status quo intact can only help.
- In a booming property market your home could be rising in value all the time you're building. This could help with finances.
- You may have room to create a comfortable 'project office' somewhere if you don't already have a home office.
- If your site is some distance away, your travelling time between home and site can be a good unwinding opportunity so you don't arrive home too stressed.

Cons

- Once the new house becomes near-habitable you'll be funding two homes at once (assuming you have borrowings on both properties).
- Not having the site under your nose makes it easier to lose touch with it and even to switch off for the odd day or two. Though you'll need some time off it'll usually be essential for you to be on site most days.
- You won't be able to keep a watchful eye on the site's security.
- You'll have an added journey each day if you don't live close to the new build. This could be very tiring at a time when you could already be exhausted and can lose you valuable building time on short winter days.
- You may need to give reassurances to your accountant and the tax office that the new place will, in fact, be your principle residence for tax purposes and not something you're doing to sell on as a developer. Ambiguity about this could

'There are three major options: stay living at home, rent somewhere close to the site or live in a temporary structure...'

come back to bite you.
- In a falling property market you could lose money when you eventually come to sell your home and move into the new one. This could threaten your new build and must be factored in as a potential cost to the whole project from Day One.

Rent somewhere nearby

An in-between option between staying put in your existing house and living on site.

Pros

- Whether you rent a house, stay in a hotel or B&B, or have friends or family who'll put you up, you'll be freeing up the equity in your home, perhaps to buy your plot, or even to finance the whole new project. This gives peace of mind to many self-builders who like to know where they stand from the start on how much money is available.
- Can be done near your new build, which allows children to start at their new schools sooner or you or your partner to change jobs.
- It can be nice to start living in your new area, getting to know people and even, perhaps, becoming involved in your new community.
- You can invest the cash freed up by having sold your home and use the interest to pay the rent.
- If you rent an unfurnished house you'll have a 'free' place to store your belongings til you move into your new home. Over two years this could save a lot on storage costs, which have become expensive.
- It is easier to convince the tax office that your intentions to live in your new build are genuine.
- Renting somewhere really close to the site will make life easier and could mean you'll pop back and forth to your home office for management tasks and to see more of your family.

Cons

- All the rent you pay is money into someone else's pocket – and out of your build budget. This could make a lengthy build (perhaps caused by unforeseen delays in building or planning) costly.
- You must take legal advice about your tenancy. Be certain that you can get out of your rental agreement should you run out of money or complete your build sooner than expected. The temptation is to sign up for longer than you need for fear of ending up on the street before your new house is ready. Take professional advice about how to structure this rental agreement to give you the best flexibility yet still keep your landlord happy.
- You won't be able to keep a watchful eye on the site's security.
- You may not be able to get the mortgage you need when you want it.

Live on the site in temporary accommodation

When thinking about what you'll live in on site, give plenty of thought to exactly what you'll need. And try to remain realistic throughout. Living in a caravan or mobile home isn't at all like living in bricks and mortar. Manage everyone's expectations right from the start. What could be tolerated if there were just two of you, might be inappropriate, or worse, for a young family, for example. ➢

Living in your existing house may be expensive but it has the benefit of being familiar and comfortable.

PLAN AHEAD

Mobile home 101

What to consider if you plan to invest in a static caravan or mobile home

There's a mature market in used caravans and mobile homes which makes buying one cost-effective, and re-sale quite easy. Numerous websites can help you in all this. You can pay anything from a few hundreds for a small, used one, up to scores of thousands for a state-of-the-art large one. In general, you get what you pay for. When buying from a private seller, remember to factor in transport costs. For a big mobile home this can be pricey.

What size can you get into the site? This will probably involve a dummy run with the supplier or transporter of the dwelling to be certain it'll go down lanes, under tree boughs, between the neighbour's walls, and so on. It'll also need to be removed at the end, so talk right from the start with your builder about when this could or should happen, so it doesn't get trapped or hold up the last stages of his work. When planning the size and proposed location be careful to consider all the ancillary services (such as a canteen, lavatory, storage units, and even perhaps a workshop) that your builder will also have to place on the site. Remember that if you are actually building the place yourself you, too, will have to supply these facilities, as you'll be regarded in law as a main contractor.

Plan carefully with your builder how the caravan or mobile home will be connected to the services, what kind of base or supports it'll need and so on. You can't just turn up one day and sit it in a sea of mud! You may have to level the area well in advance and it makes sense to have a lot of concrete blocks handy plus some lengths of variously-sized timbers for packing under the legs.

Although your contractor will have insurance cover this won't mean that you or your temporary home will be covered in the event of fire, flood or accident. Nor does it necessarily cover stolen property or damage to your neighbour's property. Check with a suitable insurer what sort of cover you'll need for what you intend to do. If you are doing major works to your existing home check with your insurers as many don't cover this in their standard policy. Self-build insurance packages often have provisions for a caravan or mobile home on site.

In NI you'll have to pay council tax while living in your temporary home on your land, even though you're not living in the finished house. After all, it isn't a holiday or recreational dwelling. It is your home.

In ROI for Local Property Tax (LPT) purposes, a 'residential property' is any building (or part of a building) which is used as, or is suitable for use as, a dwelling. Mobile homes and caravans are outside the scope of LPT on the basis that they are not 'residential properties' and do not meet the definition of 'building'. The definition of 'building' excludes vessels (boats), vehicles (whether these are mobile or not) and structures that are not permanently attached to the ground.

Pros

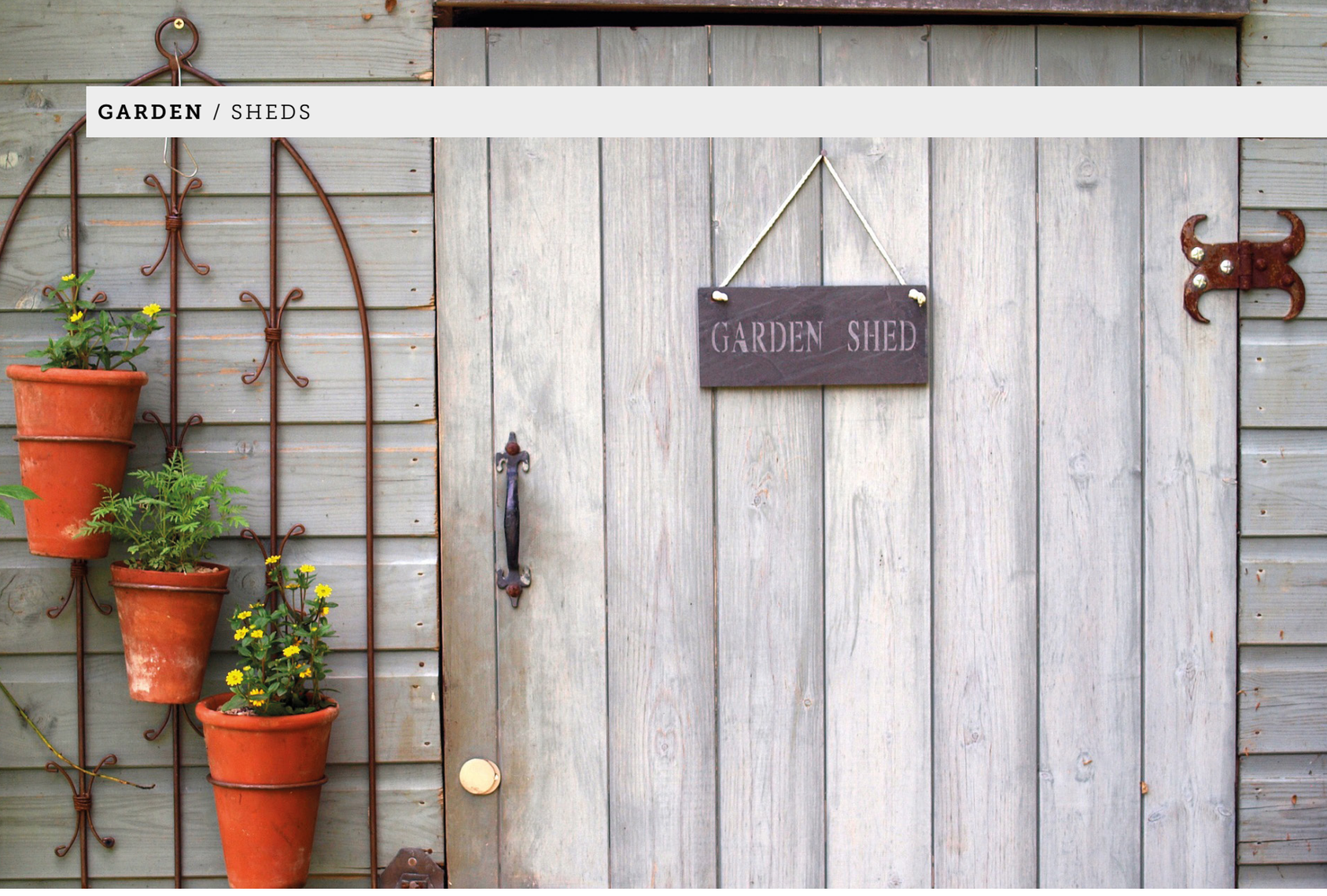
- It can be cheap, especially if you buy and sell the temporary accommodation well.
- You're right on top of things, making it much more likely you'll stay on time and on budget.
- You can keep an eye on everything from a security point of view.
- Site insurance premiums will be lower and you'll be able to have a good security system, possibly one you can monitor remotely on your computer while you're away from the site.
- You'll be able to take deliveries out of normal working hours when the site would otherwise be closed. This can be a godsend and make the difference between getting that vital something you're waiting for – and not. You can check goods as they arrive rather than having them dropped off then finding something's wrong that involves sending them back, costing time, nerves and money.
- You'll be able to ensure that high-value materials and fittings can be secured at once.
- You'll be able to keep a watchful eye on who arrives and leaves, for your records. You should, of course, be keeping a site diary of your build anyway and the timings of such comings-and-goings are vital entries.
- You can start getting to know your neighbours and respond at once to any concerns they have. Nipping controversial issues in the bud is the very best way of avoiding friction with neighbours.
- The family can start getting used to living in the area, perhaps even going to new schools.
- You can go home for meals, get warm, sit down and relax for a moment. You'll also be able to bounce ideas past your partner. After all, it'll be their home too.
- Your children will learn a lot from the process.
- It can be an adventure for the whole family, provided the accommodation is comfortable enough.

Despite the romantic appeal, no caravan or mobile home is ever as good as living in bricks and mortar

'... given that you could be working on your new build for two years, where and how you live could materially affect your finances for the whole project.'

Cons

- Because you will be living in it, you will need planning permission in both NI and ROI. And it makes sense to discuss things with any neighbours who could be affected. To be safe, get planning permission for your temporary accommodation at the same time as going for permission for the actual house.
- It'll cost quite a lot to install all the services you'll need to run a sensible family life for two years, including electricity, bottled gas, etc., and possibly somewhere to park your car. With brilliant planning you may be able to keep duplication of these services to a minimum but it'll be hard. When applying for an electricity supply you'll be asked to show your planning permission documents.
- You're never off the job. This can be depressing when things are going badly or if the place is a mud-bath. To this end, I suggest people set up some sort of 'escape' retreat they can go to when the going gets exceptionally tough and they just need to get away. Even the most idyllic adventure goes sour on occasions. You must be able to escape for a few days.
- Friends and family will think you've lost your senses!
- No caravan or mobile home is ever as good as living in bricks and mortar. Building sites are also dangerous, especially with children.
- Plan well ahead for your personal access. Trucks and construction plant all take up valuable space. Some of this could make your temporary home inaccessible from time to time. Plan this out, right from the start, including whether/when you'll be getting in the way of the construction.
- You'll have to spend money storing all your worldly goods while you build. This can be expensive. If you have good friends or family that could help, you could save money on this. Also, rest assured that the very things you'll want as you live in your temporary home will turn out to be in boxes.



Shed your inhibitions

Whether you just want somewhere safe to keep your garden furniture, bikes or lawnmower, or if you'd like a comfortable refuge or even a home from home, a shed could add a whole new dimension to your life.

Words: **Andrew Stanway**

The garden shed, once a cheap, simple, functional outhouse in people's gardens has taken on an almost iconic status in the minds of many. Because for some a shed has become a refuge from the world where they can escape, the cult of shed owning has spread around the world. There are websites, clubs, magazines and books on the subject that 50 years ago would have seemed improbable, or even preposterous.

But buying the right shed takes a little thought, so it's worth taking care before dashing off to an eager salesman keen to close a deal.

Planning Permission

Planning is not usually a problem if the shed has a floor area of less than 30sqm (NI) / 25sqm (ROI) but as always with new buildings, it's best to check your local planners' views as these vary across the island.

Don't make the mistake of thinking that because you're replacing an existing shed with a similar-sized one you'll be OK. You may not be, as regulations may have changed over the years. If in doubt, always ask before you build. In general, a shed should:

- Only be single-storey.
- Never be placed in front of the main building line.
- Be no higher than 2.5 metres at the eaves.
- Be no higher than 4 metres, for a pitched roof with a ridge (3metres for a mono-pitch).
- No higher than 2.5 metres if placed less than 2 metres away from a property boundary.
- Not be erected without permission

'The garden shed, once a cheap, simple, functional outhouse in people's gardens has taken on an almost iconic status in the minds of many.'

within the curtilage of a listed building. If you live in a Conservation Area or an Area of Outstanding Natural Beauty always speak with the planners.
• Be used only for leisure or family purposes. If you intend to use it for business, especially if this will entail visits by members of the public, then you must get planning advice. In ROI garden sheds are not to be used for keeping animals.
• Be a reasonable size. In theory 'no more than half of the area of the land around the original house can be covered with additional buildings'. This constraint rarely proves to be a real issue. In ROI the floor area cannot be more than 25 sqm without planning permission.
• Comply with full building regulations if its floor area is larger than 15 sqm or it has sleeping accommodation.

Types

Sheds are generally made of one of three materials.
• **Metal sheds** are built from thin sheet metal (galvanised steel, aluminium or corrugated iron) attached to a metal frame. They're relatively inexpensive compared with timber versions, are easy to assemble, are very secure, come in many colours and need little maintenance. Their walls are thin, though, and can be easily dented. In cold climates they are not strong enough to carry much of a snow load. They are also at risk from high winds as they are so light compared with timber sheds. For this reason, they are usually bolted to the ground in exposed situations.
• **Plastic sheds** come as kits using heavy moulded plastic such as uPVC and polyethylene. These UV-resistant, polyethylene components make plastic sheds stronger, lighter and more durable than timber equivalents and they're also more resistant to chipping and denting than timber. They need very little maintenance.
• **Timber sheds** are, to many people, the most aesthetically pleasing type partly because they look like small houses. They blend in well with their natural surroundings. However, over time the wood can warp, rot, split, discolour, and sustain mould and moss growth. They need regular maintenance. You'll need to keep the walls and roof free from vegetation, ensure the roof drains well away from the walls, that the base is not resting in water, and so on. Sheds made from pressure-treated timber, well looked after can, however, last for decades. Some suppliers offer modular shed kits that allow you create an almost bespoke layout.

Once you've decided on the looks, style, and material of your shed there are only two other things to consider. First: The walls. Planks that overlap one another look traditional and more rustic but aren't as effective at keeping water and wind out. Tongue-and-grooved timber walls are better built and more weathertight but more expensive.

Second: The roof. This makes a huge difference to how the shed will look in your garden. A roof with an apex (like a house) looks best and means there's space for storage up there, allows you to stand tall items on the floor, and is more comfortable if you yourself are tall. Mono-pitch roofs drain water off very effectively and can be more pleasant for your neighbour as you can start this type of roof at the same level as their fence top. Flat roofs are best avoided as they tend to leak and reduce the headroom.

Where to put it

Choosing location and shed go hand in hand. Decide first what kind of structure you want, what its function will be, how you'll access it in bad weather, how you'll get electricity and broadband to it (if necessary) and where it could go. Then look at what's available for a price you can afford. Preferably see it in the flesh, as things can be very different in reality from how they appear online.

Choose your site carefully, before starting. Most people like to tuck their shed away in a corner so it doesn't intrude too much on their garden's aesthetics. Obviously if you are aiming for a high-end, summerhouse or a 'garden palace' you'll site it where this makes most sense.

Avoid land that is poorly drained as this could create stability problems later. Be aware of what could happen as overhanging trees grow over the years. Allow plenty of space (about a metre should be fine) between your shed and surrounding boundaries, for future painting of the shed and easy access to fences, walls, hedges and so on for their maintenance. Siting the shed in the lee of an existing wall, hedge or other protecting structure can help lengthen its life.

If you intend to put your shed up against a boundary, talk with your neighbours to get them on side. ➢

Construction

Like any built structure, your shed will need a foundation. Depending on what you intend to use it for this can be any simple, stable, flat surface, but for best results it's sensible to create a new base that'll not only support the structure safely but could even form the floor of the final shed. You'll need to have decided on your shed and know about its structure before you start any sort of base work. Some sheds come with an integral base or base kit.

Timber sheds with a timber base need to be raised above the concrete or other base so they don't get water-logged. Whether you assemble your shed yourself or have the supplier do it for you, you'll need a sound base on which to work. Some good suppliers also offer a base construction service. For large log cabins or summer houses this could be a wise move.

At the simplest level, making your base could be achieved by laying concrete paving slabs on a properly prepared (a compacted shingle, then sand) base taking the slabs well outside the final dimensions of the proposed shed. It can make sense to extend the base in front of the entrance door to make a pleasant, mud-free area.

For larger sheds that require a proper concrete base, the method is simple. If your shed would benefit from (or actually needs) bolts to fix it down then it makes sense to have the shed's base to hand so you can plan where to site your foundation bolts as you make the concrete slab on which it'll stand.

- Mark out the area with strings and dig out to a depth of 150mm. Increase the depth to 250mm around the edges for a width of about 150mm to create an 'edge beam'.
- Once you are certain of your dimensions (allowing for a good safety margin around the base of your proposed building and perhaps even a small extra area by the front door) and have checked everything is square, get your timber merchant to cut lengths of timber to make the 'box' edging that will contain your concrete.
- Install the edging boards, checking all your dimensions again, ensuring they're well pegged to keep them stable.
- Cover the whole area with 50mm of small stone or large gravel and compact it well. Unless your shed is going to be very small it makes sense to use a steel mesh to strengthen the concrete slab. Talk to your builder's merchant about what gauge this should be for the size of your building. If it's only a small shed, chicken wire will do.
- Place the mesh on small blocks of brick or stone to raise it above your gravel base by 30-50mm then pour your concrete. Make sure the concrete isn't too wet as this reduces its strength. Tamp down the concrete using a long stick across your edging boards (this may need two people), ensuring that it fills all the corners, and scrape the surface nice and level.
- Now's the time to set your anchor bolts into the concrete, guided by the exact positions you'll have calculated from having the base units of the shed with you already. These bolts will need pushing into the concrete while it is still wet.
- Allow at least 24 hours for the concrete to cure, then gently ease off the edging boards and allow the whole thing to dry out for another 48 hours before doing anything on it.
- If you're expecting sun or frost, cover the concrete while it cures.

Although it's possible to have a carpenter design and build a shed from scratch, to your exact dimensions, window sizes, exterior detailing, door openings and so on, the vast majority of sheds today are sold as kits that can be assembled in a very short time by the customer, the supplier, or a tradesman by following the instructions.

If in doubt, always have a helper with you for safety as you lift and install the panels, especially when you're doing the roof. Many people who will never build an actual house get a huge delight and a sense of real achievement from building their shed.

Disclaimer: This article is for information purposes only; if in any doubt consult a construction professional.

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Pods for life

Where summer houses and garden offices were once the only options for al fresco living, garden pods are increasingly becoming the 'go to' design for outdoor living space.

Words: **Debbie Orme**

Garden rooms have been growing in popularity for some time now, providing extra living/working/leisure space in a relatively cost-effective manner, but, where garden rooms have been built as permanent fixtures, garden pods are now providing a striking focal point in garden landscapes.

gardenhideouts.co.uk

Characteristics

Unlike garden rooms, pods are designed and manufactured off site – usually from three to 10 weeks from the point of receiving the deposit (often 50 per cent) – and are then delivered fully constructed and installed in your garden on a concrete base or on simple piled foundations which are a bit more expensive but can be installed in any weather. Also unlike garden rooms, the good news is that, if you decide to move house, or decide that you no longer need your pod, it can be moved and reinstalled elsewhere.

Most garden pod sizes and heights have been designed to negate the need for planning permission. As with any garden construction in NI or ROI planning permission is required if the pod is installed at the front or side of the frontage of the house or if it takes up more than 50 per cent of the garden. It also has to be within 2.5 metres of the boundary.

If you are only purchasing a pod for your own use, then the above typically applies. If, however, you are purchasing a pod for business purposes, such as the current trend for pods used for 'glamping' (glamorous camping), then planning permission is definitely required. It's considered best practice to check with the planners, whatever your plans.

Unlike sheds or garden rooms, pods are all built for year-round use. Most pods are fully insulated and come with heating, lighting and power pre-installed. Electrics include spotlights, panel heater and a data outlet for broadband/phone. If services such as these are required, they will usually be fed off your house.

Many garden pods come with a choice of interior fittings to match the function of the pod, although most companies will also facilitate your plans for a bespoke interior.

Styles and costs

The range of pod designs is quite extensive from curvaceous timber office-type buildings, to armadillo-shaped cladded structures, to rotating spheres. You do have the option of purchasing your own kit to self-assemble in the garden, but most people opt to have one built off-site and

'The great thing about garden pods is that they can be manufactured in a matter of weeks and installed within a few hours.'

delivered for installation.

Most companies provide a range of designs with pre-planned prices. There is usually a catalogue of styles that you can choose from, but most will also allow for adaptation to a more bespoke solution. A selection of readymade internal layouts will also be offered and these can be interchanged or slotted into the core product range.

Garden pod companies will also have a basic price list to which they can add any incremental costs, such as the provision of white goods if you're planning on using your pod as a utility room or kitchen. Pod 'shells' usually start at around the £6,000/€7,000 mark but a bespoke pod complete with various window/door configurations, white goods and fittings will usually start around the £20,000/€25,000 mark with fully fitted two bedroom pods easily fetching upwards of £70,000/€75,000.

Site visit

Once you have decided on your style, the company will organise a site visit and it is at this stage that any issues will be both identified and, hopefully, resolved.

Your chosen style of pod may, for example, turn out to be unsuitable for the size of the space available. Equally,

podology.ie

your site may be certainly flat but you may have forgotten to tell the company about the mature tree in the middle of it – rendering that position totally impossible.

The pod will be delivered ready to connect to services, such as water and electricity.

A solid concrete base will be required to ensure that there is no movement on the garden room externally or internally. Pod suppliers tend to deal with the foundations and services for you but if you have opted for 'supply only' then you will need to provide this base, as well as an electrical feed and plumbed water/wastewater facilities depending on what you intend to use the pod for.

As mentioned above, most companies will quote a price that includes the provision of this site work and delivery.

The site visit will also allow the pod company to provide you with a definitive overall cost as they will have been able to determine delivery costs and other variables having visited the site.

The great thing about garden pods is that they can be manufactured in a matter of weeks and installed within a few hours. They will certainly add value to the price of your house but, if they don't add enough, then you can simply sell your pod on, or move it to your new home.

gardenhideouts.co.uk

Peppermint (left) and fennel (right)

Grow your own herbal tea

The original tea plant is Camellia sinensis and even though it's a cousin of garden camellias, it is not as easy to maintain. Thankfully the majority of herbal tea plants are a cinch to grow. Here's how.

Words: **Fiann Ó Nualláin**

The term 'herbal tea' applies to more than herbaceous parts (foliage), it can apply to seeds, roots and flowering parts too. Maybe you are new to gardening or to the idea of a productive garden – one that is not just pretty but packed with edible and medicinal bounty. I will list the most popular teas here but you can expand to meet your own specific needs.

Whatever the tea you favour, and be it a flavour to drink or apply to the skin, your tea garden doesn't have to be all dedicated raised beds, it can be a range of attractive containers and even a mixed floral border. Floral teas have a long history and to name but a few; chamomile, chrysanthemum, orange flowers, hibiscus and jasmine are both herbal teas in their own right and flavour enhancers to many tea blends.

Fresh or dried, the flower buds, full blooms or picked petals may make up the infusion or enhancement. The seeds of many plants contain a microburst of nutrients, phytochemicals and a flavourful punch too, such as anise or fennel.

Anise tea

Pimpinella anisum is an annual herb with a long tradition improving digestion and preventing bloating/flatulence. It is sometimes used for its estrogenic action; the seeds in particular contain trans-anethole, a plant hormone very similar to human estrogen traditionally used to help with delayed or irregular menstruation and as a support to lactation in nursing mothers.

How to grow. Anise is a member of the carrot family but grown for its foliage

'The term 'herbal tea' applies to more than herbaceous parts (foilage), it can apply to seeds, roots and flowering parts too.'

and seed rather than roots. It favours full sun in a light and well-drained soil. It may need staking or other support in less sheltered locations. Anise it best treated as a half hardy annual. Easy enough from seed, germination takes approximately 10 to 12 days in a propagator at 20degC, but a little longer on the windowsill. As the tap root does not like disturbance, if sowing indoors I would advise to individually sow into root trainers or loo rolls to plant directly into the ground. You can sow direct from April to June, into the container or part of garden that you want them to grow. The rule is generally to sow 10-12mm deep, 30cm spacing between each, in rows 40-45cm apart. The aromatic foliage can be harvested as you go. The seeds ripen from late August through September.

Basil tea

Ocimum basilicum also known as sweet basil is an annual plant from the mint family with a long history as a culinary herb. The genus name Ocimum derives from the Greek word ozo meaning 'to smell' and certainly basil emits a pleasant aroma. There are several cultivars of basil including a lemon variety and a cinnamon-scented variety; foliage shape variations include Italian/curly basil and lettuce-leaf basil.

How to grow. Basil favours a well-drained sandy soil. It is essential to have a high light level or sunny position to really bring out its aromatic qualities. It can be grown indoors as a window sill plant or houseplant or as a seasonal summer container plant. It is also often grown as a companion to tomatoes in polytunnels and in shelter outside allotment beds, where it can boost the flavour of that fruit. It can be tricky when sown direct, so most commonly started indoors – in any month of the year and acclimatised to plant outside later – when frosts are not a factor. Propagator in the range of 15 to 25degC. Its germination can take anything from 14 to 21 days, if just on a windowsill the success is at lottery win odds. Wherever you choose to grow it, do pinch out the tops of plants to encourage a more bushy growth and more tea leaves. Spacing will depend on variety.

Chamomile tea

There are several species of chamomile but the two most common in ancient and modern herbalism are Roman Chamomile (Anthemis nobilis) and German Chamomile (Matricaria recutita). They both contain, to varying degrees, a similar phytochemistry and mineral profile including calcium, magnesium, potassium and folate among many others – and so are used interchangeably. Some tea blends even combine both herbs.

How to grow. The Anthemis variety does best in full sun, in light, well-drained soil. It can be direct sown in situ at this time of year but germination can be erratic so it is good to start indoors and transplant into place later. It requires a germination temp of 15degC and usually takes seven to 14 days to show. Best to surface sow and let it catch maximum light. Plug plants can be spaced at 30cm and will soon knit together to form a good clump. The Matricaria variety likes similar growing conditions. It can germinate at 8degC and so is often the chamomile direct sown in spring. Do not dust over as it needs light exposure to germinate. Both varieties are suitable for chamomile lawn type plantings as green lawn, on green roofs and also in containers.

Fennel tea

Foeniculum vulgare is a popular diuretic; to address fluid retention in the body and also to help eliminate toxins. Used for detox and in the alleviation of arthritis and gout via the expulsion of excess uric acid. Because fennel also exhibits antiseptic properties it is also used against urinary tract infections and is beneficial to treat cystitis. Cooled fennel tea can also be used as eyewash for conjunctivitis and as a soothing rinse for sore eyes.

How to grow. Fennel can be started indoors but as its roots don't like being transplanted, it is best practice to sow ➤

Chamomile

direct into ornamental pots or the ground where you would have it grow. It will germinate from spring and over summer, so you have plenty of scope. It will germinate more readily at temperatures of 15 to 18degC and will usually take 10 to 14 days. The rule is to sow individually 10mm deep at 30cm spacing and if in rows then leave approximate distances of 60 to 70cm apart as it is a spreading plant. It will possibly self-seed and may spontaneously crop up in a different location next year but to start your first plant off right, place it in its preference of a well-drained site. It is somewhat drought tolerant but that said it does not like to be left unwatered too long as its aromatics tend to dry up in prolonged drought. It is pretty much frost hardy but will require full sun to fully perform. Seeds will ripen from August through September.

Jasmine tea

The botanical Jasminum spp. and common names derive from a French corruption of the Persian name of the perfumed plant yasmin. There are more than 200 flowering vines in the genus but the most popular are Jasminum grandiflorum which is mostly used in herbal remedies, and J. officinale which is often the preference for aromatherapy but they are interchangeable.

How to grow. Jasmine is a perennial climber. It requires room to spread. The two types of jasmine species that are popular in tea are frost hardy, some other varieties are not. Jasmine is not one I would be starting from seed as it takes so long to mature into a crop. I would be thinking of a pot plant to start with. You can get mature specimens that will surround an arbour or pergola instantly. I grow mine against a wall and tie it into a trellis structure, it shelters part of my garden and I can harvest it regularly. It is also suitable in the short term for a large pot or container. Jasmine does best in full sun and well-drained soil. It prefers a south or southwest facing aspect.

Peppermint tea

Mentha x piperita is actually a hybrid of spearmint (M. spicata) and water mint (M. aquatica) – naturally occurring in the wild and also cultivated as a medicinal herb, food flavouring and for purposes of essential oil and menthol extraction. There are many variations but the two most recognised and used are black peppermint (Mentha x piperita vulgari) with darker stems and a reddish flush and the paler and milder white peppermint (Mentha x piperita officinalis).

How to grow. Peppermint is quite invasive and is best grown in containers

Jasmine in bloom

Bhanga Munsinger Cotton - https://www.flickr.com/photos/ingamun/46401117097, CC BY 2.0, https://commons.wikimedia.org/w/index.php?curid=33204118

TEA TIME

How to make a perfected brew

Some herbal teas deliver their medicinal actions via their vitamin and mineral content while with others there are different plant based chemicals at play. A phytochemical in chamomile tea - chrysin - binds to GABA receptors in the brain and exerts a calming effect upon the central nervous system. Peppermint contains hesperidin and luteolin-7-O-rutinoside which both exert an inhibitory effect on histamine release from our mast cells, making it great to alleviate allergies. How you make your tea can increase or decrease these chemicals.

So while most constituents are easily extracted via a short one to four minute infusion in boiling water as you would make a standard cup of tea, to maximise the effect I recommend that you let the boiled water rest for 30 to 60 seconds before pouring over your herb. This 'off the boil' temperature will extract rather than cook the plant's ingredients.

The standard ratio is one to two teaspoons of chopped fresh herbage per one cup water, depending on the desired intensity of flavour. Dried herbage can often be stronger in flavour. To make a strong brew, the rule is to add more herb rather than steep longer - as a longer steepage can extract more bitterness. Cow's milk and some plant-based milks can sour in herbal teas, so these teas are are generally just made with water and if required sweetened with lemon or honey. Many have a rich flavour in their own unadulterated state. Your garden grown will always taste richer or more noted than the teabag variety. But whatever your bag, there is room in the garden to grow and enjoy.

so as to restrict its root run from taking over your whole garden. It is not too fussy about soil type and while it does best in sun it will take to shade too. It is one of those plants that benefits from division every three to four years to rejuvenate it. And over the course of its time it also benefits from regular picking or clipping to maintain a bushy habit of favourable foliage. A hardy perennial that dies back in winter; you can extend its season by bringing it inside. A temperature of 18 to 20degC and exposure to light is essential to germination, which can be erratic at the best of times. But all you'll need is one seed to come out to have plants for life.

Sage tea

In medicinal terms, the clue is often in the name. In this case Salvia Officinalis; the Latin salvere means to save denoting its manifold medicinal applications and Officinalis further reminding us of its official curative status. Sage is one of the oldest medicinal plants. Used in fumigation and smudging rituals from the earliest of times, on several continents, sage is probably best known for alleviating menstruation and menopausal complaints. Its anti-inflammatory and antispasmodic constituents such as rosmarinic acid help relieve stomach cramp and mild back pain.

How to grow. Sage needs free-draining soil in full sun to fully develop its chemistry and to best survive without pest and diseases. It is a slow starter from seed and can take its time too as a cutting but once up and established it will do well. Easily maintained if placed right from the start; it prefers slightly alkaline soil. Does best in a sunny location with light, free-draining or grit amended soil – the trick is to mimic the Mediterranean where it originates from.

Yarrow

Best to sow seeds in situ 1cm deep, about 30cm apart. A cloche will be invaluable to achieve germination. Alternately, with a propagator, those seeds will germinate in the range of 15 to 20degC, in around 21 days. Pinch out tops or clip to prevent plant from going leggy or woody too soon.

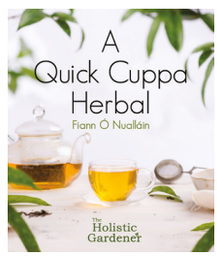
Yarrow tea

Achillea millefolium is most often used to stimulate more efficient digestion but with its carminative, anti-inflammatory and antispasmodic effects it makes it suitable for the gamut of stomach upsets. There is also a tradition of using it to ease menstrual cramps and attenuate symptoms of PMS and menopause. The apigenin found in yarrow possesses potent anti-inflammatory and antispasmodic actions but is also believed to have mild antidepressant and anti-stress properties.

How to grow. Yarrow can be cultivated as a herb or an ornamental plant. It favours dry sites and malnourished soils. It often features in wildflower mixes for meadows and rooftop gardens. I grow traditional white flowering yarrow and some of its colourful cousins in a mixed herbaceous border and they all thrive when given a wide pocket of grit amended soil to establish in. Yarrow has a specific germination criteria; it likes its seeds to break their dormancy in full light. So that's a surface sowing on top of moist compost or a sowing direct onto a fine tilth-raked soil where you want them to grow. They require a germination temperature of 18 to 25degC and generally take a little over a week to sprout. It can spread, but not to invasive standards. It may self-seed into a nearby lawn or gravel path but are easily prised up.

Until next time, good gardening and good health.

Sage



WIN! WIN! WIN!

If you want to learn more about the medicinal benefits of herbal teas, look no further than Fiann's new book **A quick cuppa herbal** published by Mercier press, mercierpress.ie. To be in a chance to win a copy tweet us a photo of your favourite cuppa herbal @selfbuildire or comment on our Facebook page facebook.com/selfbuild where we will be running a post for the competition. Good luck!

Disclaimer: This article is for information purposes only; for medical or therapeutic advice for your specific circumstances consult a professional.

Paving

Paving round your new home can provide that magical finishing touch that's not only practical but shows your house off to its best.

Words: **Andrew Stanway**

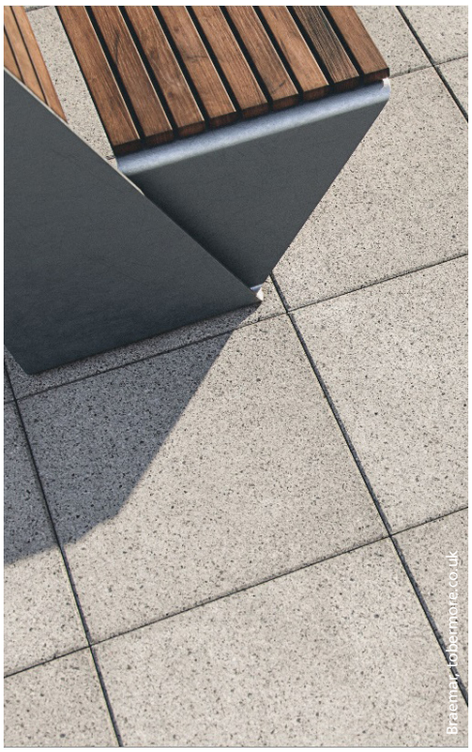
There are literally hundreds of paving options for your new home and most of us choose on the grounds of price and looks.

Concrete slabs from the DIY sheds are the cheapest and can be easily installed if you know what you're doing. With a little more skill and practice it's also possible to install block paving and stone setts (cobblestones).

Beyond this, paving is probably best left to the professionals as the materials become more expensive, require more skill to cut and handle, and look good only if really well installed.

Types

When thinking about what you'd like, the best place to start is online to see what will suit your architectural style and, more



Brewster Bedmont's, brewsterbedmonts.co.uk

Castlestone Causeway blend, roadstone.ie

important, your pocket. Most self-builders put their money into the house itself and find that at the end of the build their paving is either left undone or is hastily completed for very little money. If at all possible, get the main contractor to lay the concrete bases for paving you know you'll definitely want, then the finishing surfaces can be installed at a later date when cash flow improves. This means you get the builder to make his finished level of his concrete such that you can, later, when you can afford it, lay your materials on top so they then come to the correct level relative to the Damp Proof Course (DPC).

Making a paving choice is usually not that hard once you see what's available. If you've been using an architect or other designer, ask them what they think of your choice. The most important 'technical' thing to consider is how the material will perform for your particular situation.

Don't forget that the more exotic the paving, the more difficult it'll be to lay and perhaps to cut, so you'll need a very realistic quote on installation costs right from the start, to avoid an expensive surprise.

Listen to your supplier's advice about which type of material best suits which sort of surface. What could be perfect for a pathway or patio might be totally unsuitable for your main driveway, for example.

Smooth surfaces look great but can be slippery when wet. Riven surfaces look more natural and provide more grip.

There are concrete and reconstituted stone versions of many different 'natural' materials without the steep price point.

If it concerns you, seek out a supplier who sources their materials ethically.

Laying slabs, paviors and setts

For the preparation you need to first choose your materials then plan the layout. Think carefully about whether you're physically up to the job. Paving slabs and even stone setts can be very heavy, especially if large or thick. Unless you are used to doing heavy physical work, you might want to consider employing a professional.

Urbana Sandstone and charcoal setts by Roadstone, roadstone.ie

Plan the work. As with most building, planning is the most vital part. Draw onto graph paper the area you intend to pave. If you prefer, online planning tools are available. These are helpful in that they'll enable you to work out quantities. Include all existing or proposed buildings on your drawing so everything will match up at the end. It helps when laying paviors (block paving) or setts to plan any patterns or borders in advance.

Organise your dimensions to ensure as few cuts as possible. Cutting is messy, skilful, time-consuming and costly on wasted materials.

Don't forget that your finished paved surface must be at least 150mm below the DPC of any dwelling. If your contractor has already laid concrete for the surrounds and patio area, he will have taken this into account. Be sure to let him know in advance how thick your finishing materials (plus their beds) are going to be so he can make his concrete level the right height in relation to the DPC.

When thinking about laying out, remember you'll need a gradient of 1:40 or more to produce sufficient drainage.

'Paving is probably best left to the professionals as the materials become more expensive, require more skill to cut and handle, and look good only if really well installed.'

The foundations will differ according to the nature of the traffic on the surface:

- For pedestrianised areas a compacted hardcore sub base is always required.
- For driveways it's sensible to use at least 150mm of good quality, compacted hardcore, and followed by the sand. You get hardcore and then whack it or roll it to compact it before doing the next step. You can also use limestone scalpings to achieve this first layer but many building jobs mean you already have some nice clean bricks and other 'waste' from your demolition, which you can use for this hard core.
- Once you've decided on your depth you can dig out the soil and tap in wooden pegs to show all the boundaries and finished levels. Be sure to measure carefully so your finished surface will be square with other related structures.

Laying your slabs:

- Although simple concrete slabs are quite forgiving, many other types of paving are not. Be sure to keep a careful eye on your materials as they could be expensive and easily damaged. For example, don't stack slabs one on another or rubbing could damage their surfaces. Use slim timber packing slips between the slabs until they're ready for use.
- Keep all your materials dry until you're ready to use them.
- When actually laying, use slabs from at least two packs to blend colour shades.
- Make a semi-dry mix of sand and cement (5:1). A PVA or SBR bonding agent will be helpful, especially with natural stones. You ➤

INSIDER VIEW

I live in Dublin and a condition of planning is to put in permeable paving. How is it different to regular paving, what depth does it have to go to? How do you measure for it?

A sustainable urban drainage system (SuDS) is an alternative to the traditional drainage methods such as gullies and pipes. It's become a planning requirement for most houses and extensions in Dublin city and county. As the city's drainage systems have become overloaded, sites have to employ SuDS to deal with rainwater within their boundaries or to store the water for slow release to the drainage systems reducing the threat of flash flooding in storm conditions.

SuDS is therefore a method to control surface water runoff as close to its origin as possible, before it's discharged to a watercourse or to the ground. This includes managing the water on site, minimising its runoff, keeping the water for passive treatment and controlling its discharge rate back to the water table.

In terms of the surface finish, paved areas retain the same visual appearance as standard concrete block paving. The difference being with permeable systems the joints are designed to take a 2mm grit which allows water to permeate through the joint down into the sub base. What makes the system permeable is the fact that rainwater can infiltrate through to a unique sub base, which is integral to the permeable paving package. The sub base is a buffer zone that releases the water in a controlled manner into sewers or water courses or allows the water to permeate slowly into the ground naturally.

The more comprehensive SuDS systems provide filtration cleaning to reuse the water for secondary non-potable uses such as flushing toilets and watering soft landscapes (grey water). A further advantage is that roof water can be drained directly into the sub base, through a dispersion chamber at a ratio of 1:1 (Roof area : Paved area).

Simple designs for driveways and patios can be compiled by following design guides or BS 7533. For large areas the design and construction of permeable paving systems is usually best handled by specialist companies.

Thomas Holden of Roadstone, roadstone.ie

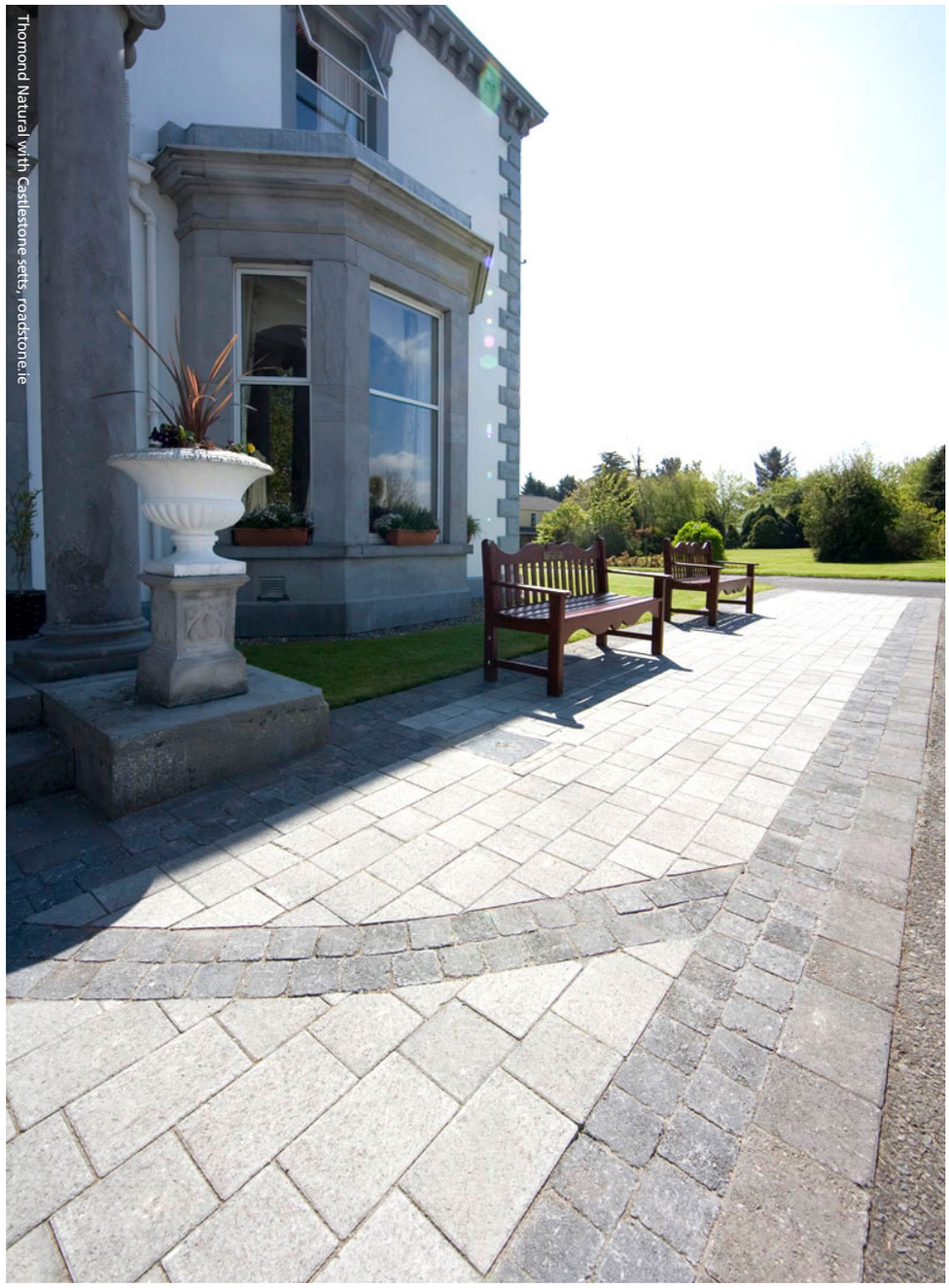
could also coat the reverse of each flag with a 'slip' of neat wet cement containing an added bonding agent, immediately before laying.
• Prepare a 25mm bed of mortar, lay the flag on it, then firmly tap it flat using a rubber mallet.
• As you lay each few slabs keep on checking the levels and gradients. The latter can be made easier using string lines.
• Use spacers between slabs to keep gaps uniform, unless you are very experienced and can do this by eye.
• Cut slabs well away from others as the dust can be not only unpleasant but actually harmful if inhaled. A suitable diamond-tipped cutting disc will usually do the job.
• Keep people off your newly-laid slabs for at least 24 hours and cover everything up if you expect frost or very hot sun.

Then comes the pointing:
• Most slabs require about a 10mm gap left for pointing. If your slabs are massive in size or thickness you can get away with 8mm.
• Use a semi-dry mix of mortar at a cement to sand ratio of 1:4.

Wethercote stone paving from Bradstone, bradstone.ie

• Carefully trowel it into the gaps and ensure it beds deep into the cavities. If you get any on the slab surface, clean it off as soon as possible with a damp, frequently-rinsed, sponge. Do this as you go along because you won't be able to walk on the surface to do it later.
• Sand alone isn't a suitable pointing material for slabs unless they are designed to be laid with very thin joints.
• Protect pointing against sun or frost for at least 24 hours.
• Paving installed flexibly with a narrow 2-5mm joint made of kiln dried sands, can be walked on immediately.

The method for laying setts and paviors is slightly different:
• Start by creating your boundaries. These will then make a kind of 'box' which you'll infill with your setts or block pavior material. The boundary edging could be a kerb, a step, a building's wall, or a commercial edging. Prepare the ground exactly as for slabs but bed your edging material into concrete with plenty of haunching. This system should then be allowed to cure thoroughly before taking the project further. You'll need to have calculated your depth of dig to allow for your sett or pavior thickness plus 50mm for the sand bed.
• Screed the whole area with about 35mm of coarse concreting sand. You'll be surprised how much sand this takes. Compact and level the area with a plate vibrator. Add more sand and repeat this levelling process until you end up with about 50mm of sand, perfectly flat. Offer up one of the units you'll be laying, and adjust the sand until your levels are right.
• Start from a corner or a long face and keep going along one complete face. Use a string line to ensure perfect alignment and be guided by your supplier on how much of a gap to leave between units.
• Mix blocks from at least three packs to ensure a good balance of batch colours.
• You can cut the blocks using a hammer and bolster chisel, a special block splitter, or even a diamond cutting disc. If you are wetting your blocks while cutting be certain to clean them thoroughly before installing. Arrange your planning and pattern so you never have a block that is smaller than about a quarter of its original size.
• Using a stiff broom, spread kiln dried jointed sand into all the joints before vibrating the area with a plate vibrator. This will allow the sand to find its way into the joints. Repeat this sanding and careful vibrating until the whole surface is plane and level. The surface is now ready to use.


Thomond Natural with Castlestone setts, roadstone.ie

Maintenance

It's all very well creating a wonderful paved area but unless you keep it maintained it can soon look very sad. The secret here is prevention. Don't let things get out of hand or you'll end up with a difficult job you'll never want to tackle.

For that really deep clean you'll do perhaps only once a year there's no substitute for pressure washing. There are attachments made for the purpose or you can use your ordinary wand head, being careful not to wash out the sand or cement grouting.

If the grouting wasn't that good to start with then this could be your opportunity to re-point with fresh materials. Some stone paving materials cannot tolerate pressure washing. Seek the advice of your supplier first. Concrete flags are usually safe.

Never use salt to de-ice reconstituted stone or limestone; alternative products are available.

Further information: Tobermore, tobermore.ie and Roadstone, roadstone.ie

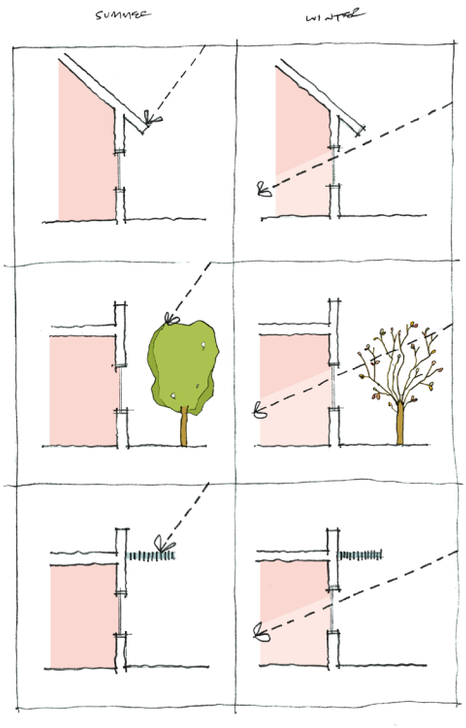
The architecture of joy

Ben Channon's book Happy by Design is a layman's guide to building a home that makes you happy.

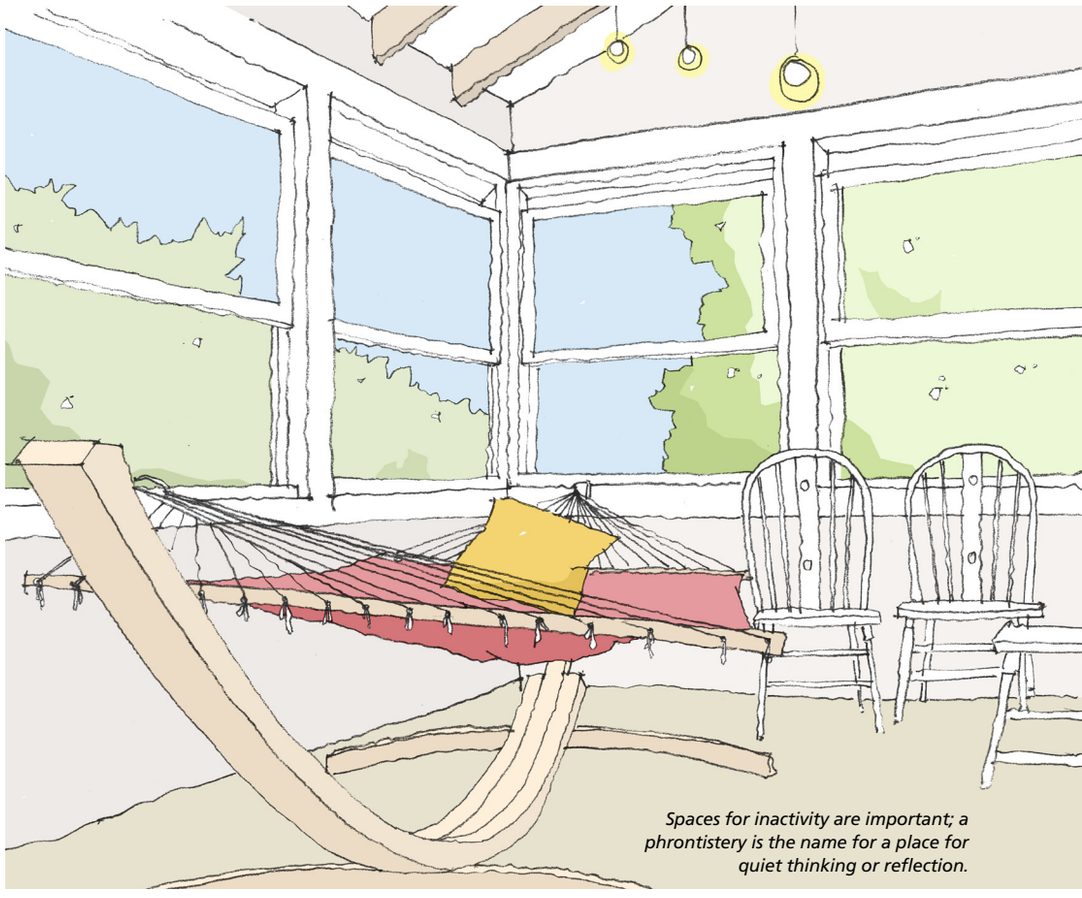
Words: **Astrid Madsen**

I began the journey of writing this book with the realisation that actually much of the construction industry in the 21st century is focused on three things completely unrelated to the experience of buildings: carbon emissions, safety and profits. All of these elements are, of course, important. However, if we focus too heavily on them, it is possible to lose sight of something that should be at the core of design: joy."

That's from Channon's introduction; and it's true that in this day and age where mental health is fast becoming one of society's greatest challenges, the home has to pull its weight even more than it used to in acting as a safe haven and as a place to just be, and be happy.



The ideal temperature in the summer for your house is between 21 and 25 degC.



Spaces for inactivity are important; a phrontistery is the name for a place for quiet thinking or reflection.

"By most estimations, we now spend more than 80 per cent of our time in buildings, and this can affect our mood both positively and negatively. The quality of the places where we live, work and study therefore impacts our happiness significantly."

"Designers of the built environment have an opportunity to impact our 'human' behaviour in a positive way: to nudge people to exercise or to make it easier to be tidy, for example."

He talks about biophilic design, which incorporates nature into design – see Winter 2017 issue – this can be in the form

'The home has to pull its weight even more than it used to in acting as a safe haven and as a place to just be, and be happy.'

of plants and water features, but also views to greenery outside or choosing colours and items that trigger a subliminal connection with nature.

Nature leads to happiness; interaction with animals and pets have also been shown to help those with depression. Channon even talks about how to get people onto a healthy diet with adequate kitchen design.

What's most striking about the book is how user friendly it is, and how simply it deals with what's a complicated subject, especially now with stringent building regulations and advances in technology. This book about architecture is about as digestible as it can get for a self-builder.

All of the design principles that you need to be aware of are laid out clearly and succinctly, and even though it could seem simple to anyone who's studied architecture, the illustrations alone are a valuable means of communicating basic design principles.

For Channon is a bit like a craftsman who is laying his tools and materials bare, deconstructing what it takes to get to the end result that is a fabulously designed family home.

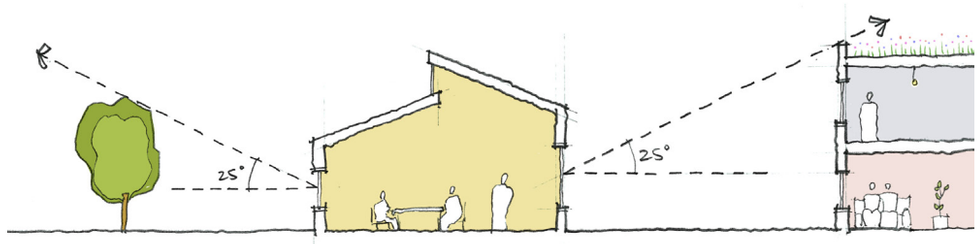
He goes into shapes and sizes, proportions and rules of thumb. For instance, now that we design with loads of floor to ceiling glass, Channon explains that maximum room depth is usually designed between two and 2.5 times the height of the windows.

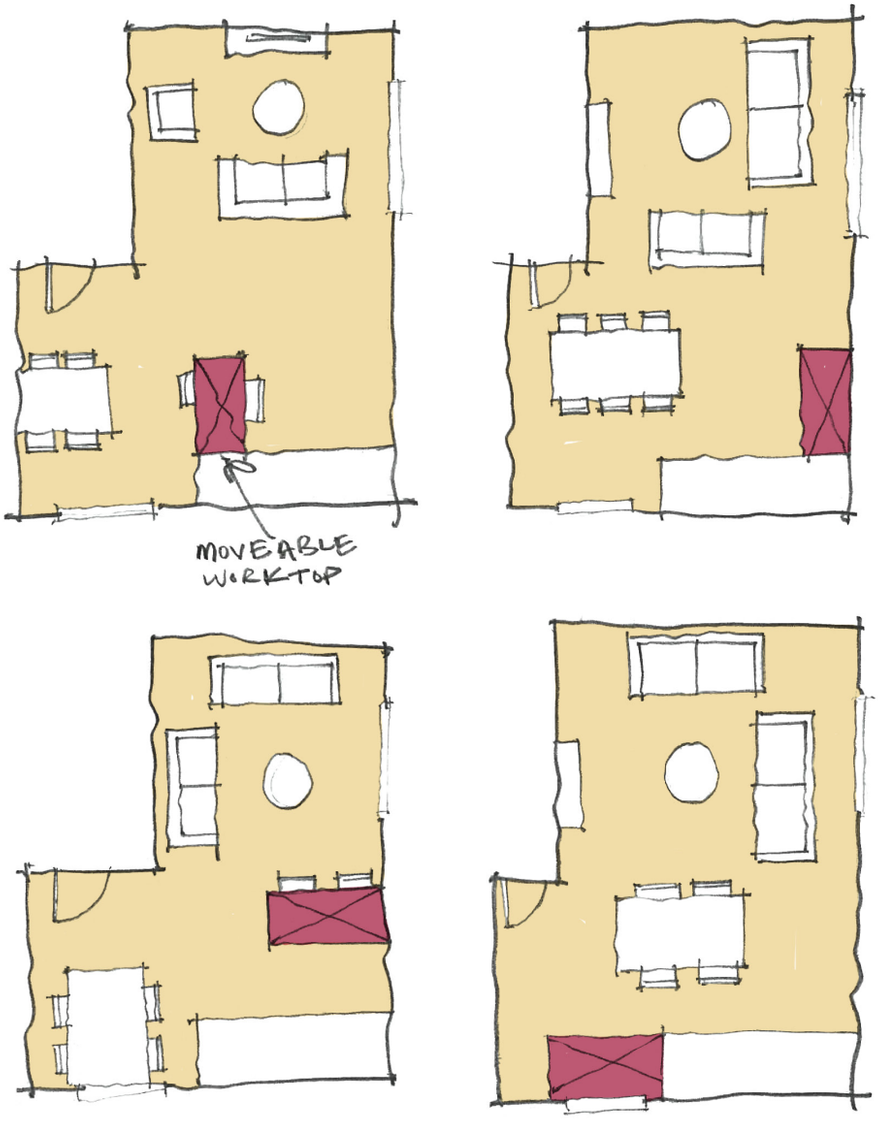
He says: "Of course, some people might prefer certain colours or materials, but while researching this book I discovered that there are many elements to building design that will universally affect how people feel within a space."

Channon also provides a really useful reading list if you want to delve deeper into the topics he touches upon in the Notes + References section. The index is also very helpful. All in all this book is simply about what it takes to design for joy, an aspiration every self-builder has.

"Since the Ancient Greek 'master builders' we have been obsessed with how people experience buildings, and with good reason: they have a huge impact on how we feel."

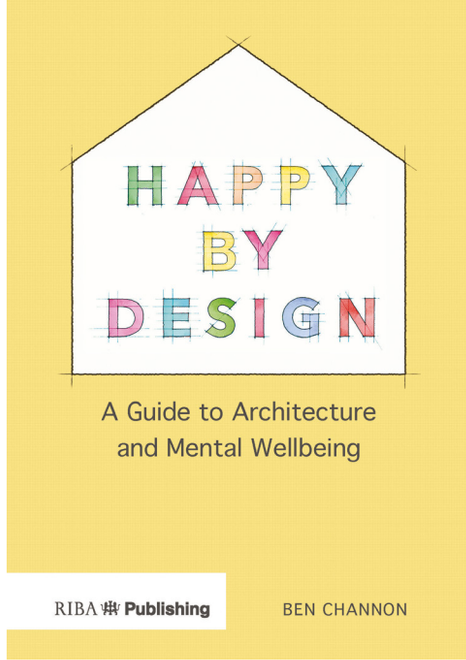
Aim for an angle greater than 25deg to get day light into the house.





By creating building elements that can be used in a variety of ways, designers can increase the control people have over how they use spaces.

Happy by Design by Ben Channon, RIBA Publishing, ribabookshops.com, ISBN 9781859468784, 224 pages, colour throughout with illustrations, paperback, £20



Ask the expert

You've got questions, we've got answers. And if we don't, we'll find out by scouring our Facebook group, calling help lines and talking to the experts.

Q: Why are we still waiting on the locals only rules to change? It's a planning provision that prevents people from building their home in the countryside in ROI. The EU has instructed Ireland to review the rule ages ago but the working group in charge of making the changes has yet to finalise its meetings. What can be done?

A: Answers from self-builders on selfbuild.ie discussing the issue:

"I have started to research options regarding petition and group legal action. In the meantime, I thought fellow readers would be interested to know about this written question from Deputy Brendan Griffin in February who who asked the Minister for Housing, Planning and Local Government if the connection to area condition in the Sustainable Rural Housing Guidelines for Planning Authorities will be removed; and if he will make a statement. The answer offers no great insights, but does illustrate the complete lack of transparency surrounding the processes in place to address this issue and my impression is that there is very little hope, if any, that there will be any forthcoming changes. This only serves to embolden my endevours to find a way to get this unfair policy position challenged." *Mick on March 18, 2019*

"Would it not be a good idea to lodge an official complaint with the European Commission? The behaviour of successive governments is nothing short of scandalous. This carry on has been going on for more than 13 years. We purport to be good Europeans and yet flagrantly defy its laws." *Aidan on March 20, 2019*

"From my prespective parliamentary responses to date on this issue are ambiguous and frankly just not good enough." *Karen on April 6, 2019*

Q: Our site in NI has been dogged with problems between water and electricity; we've just been quoted to connect electricity through the neighbour's property and we're not on the best of terms due to issues with surface water runoff from his site. We may be able to connect a different way but I'm afraid it would turn out to be very costly for ourselves. It's a shame as we were two years achieving the planning permission, after getting outline permission. I did make enquiries earlier on about water and electricity and had been told all was good but that we would need planning permission before they could give us a quote. Now water is going to cost £6,000 and electricity may not happen and our site is right beside other houses and water mains. I'm really despaired and thinking that we have to give up on our site.

A: As an engineer I always check these things at a very early stage, although I am aware that not everyone does so. Many people do choose to leave the services connection agreements until last, even their consent to discharge effluent.

I am surprised you were able to purchase the site without the checks being done, but perhaps you already owned the land. Having consulted the site plans, there is access to a public road which would indicate that there shouldn't be any serious problems with getting access to water and electricity supplies.

Mains water pipes are usually (but not always) routed along road verges under Roads Service control. There are properties at higher elevations on this road so I assume that a water main passes the front of the site somewhere. If the water main is on the other side of the road, then the applicants simply need to obtain Roads Service permission to cut the road.

NIE should be able to find an alternative supply route if they cannot get the neighbour's permission; the question is whether NIE actually said that they need permission for an overhead electricity line.

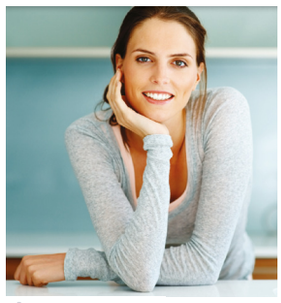
Regarding surface water run-off from a neighbour's site, this could be a matter for solicitors to solve, but Rivers Agency might have some input.

Why not simply divert it to a soakaway or to the stream at the bottom of the site and save on legal fees? N.B. Diverting to a stream would usually require Rivers Agency permission. Although there may be a cost element, these issues all appear to be solvable.

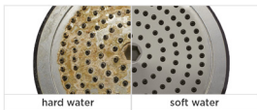
My advice would be to talk to the agencies involved (i.e. NI Water, NIE and Rivers Agency) and ask them for suggested solutions.

Les O'Donnell, landmarkdesigns.org.uk

Perfect Water Systems



Perfect water softener



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