A home for life

Rob and Sara Boltman designed and built their highly contemporary, timber-framed home to adapt with their family's changing needs.

STORY: **DEBBIE JEFFERY** PICTURES: **ROBERT BOLTMAN PHOTOGRAPHY**

In brief

Project New build
Location Cardiff
Cost £370,00 for existing bungalow
Spent £450,000
Worth £850,000+

"Sara and I had moved house every couple of years since we married, carrying out various remodels and extensions, but this is definitely somewhere we plan to stay," says Rob Boltman. "We'd been looking for a suitable plot for 15 years, and the other properties were stepping stones which eventually allowed us to design and build our own home."

Set in a walled garden on the site of an abandoned 1970s bungalow in Cardiff, the couple's contemporary design for a replacement house was welcomed by both the planning and conservation officers. The triangular site is located towards the edge of a Conservation Area on a small side road and is screened on three sides by a high stone wall.

"The bungalow hadn't been lived in for about three years and there was no planning permission for the site when we bought it, so we took a calculated risk," continues Rob. "During the buying process we did a pre-app with the local council, which gave us some reassurance that a contemporary replacement dwelling should be acceptable."

Sara and Rob first met when they were both working as IT consultants, but later Rob decided to retrain as an architect. "I've always been interested in design and computer graphics, and wanted a new challenge," he says.After purchasing the bungalow in September 2016, Rob worked with Sara to design a new home for themselves and their children: Katie, 11, and Jack, 8.

The highly sustainable, contemporary two-storey house is tucked behind the garden walls, with the L-shaped plan set in the front corner of the plot in order to maximise garden space. This makes the most of its park setting and south-facing aspect,

THE EXTERIOR
Designed by project architect Rob Boltman as his own family home, the ultra-contemporary four-bedroom house sits in the Roath Mill Gardens Conservation Area of Cardiff. The house has an L-shaped plan, with stone fin walls reflecting the locality and contrasting with modern Equitone cladding panels.

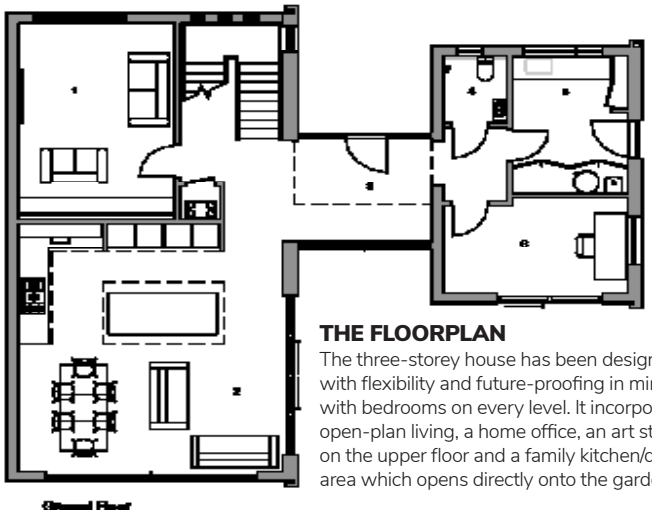
In detail

PROJECT
Architects Downs Merrifield Architects: downsmerrifield.com
Landscaping Victoria Wade Landscapes: victoriawade.co.uk

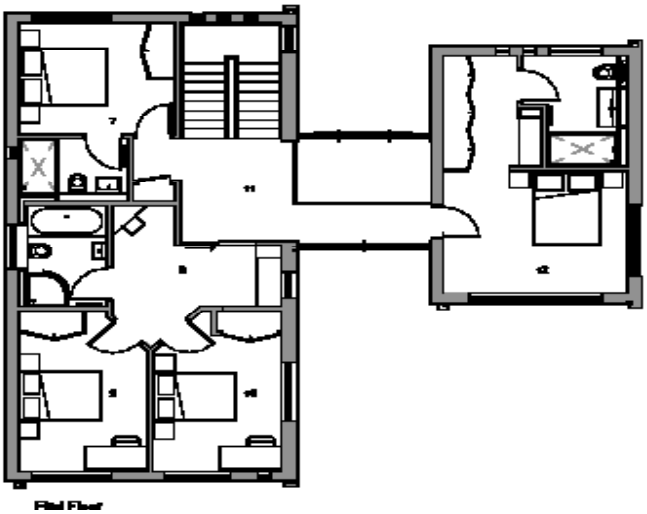
STRUCTURE
Passive slab and timber frame Advanced Housing Systems: advancedhousingsystems.co.uk
Timber/aluminium windows Velfac: velfac.co.uk
Staircase, gate and screen Ad Hoc Designs: adhocdesigns.co.uk
Equitone cladding Marley Eternit: marleyeternit.co.uk
Single ply roofing Fatra (UK) Ltd: fatra.co.uk
Natural stone cladding Real Stone Cladding: realstonecladding.co.uk

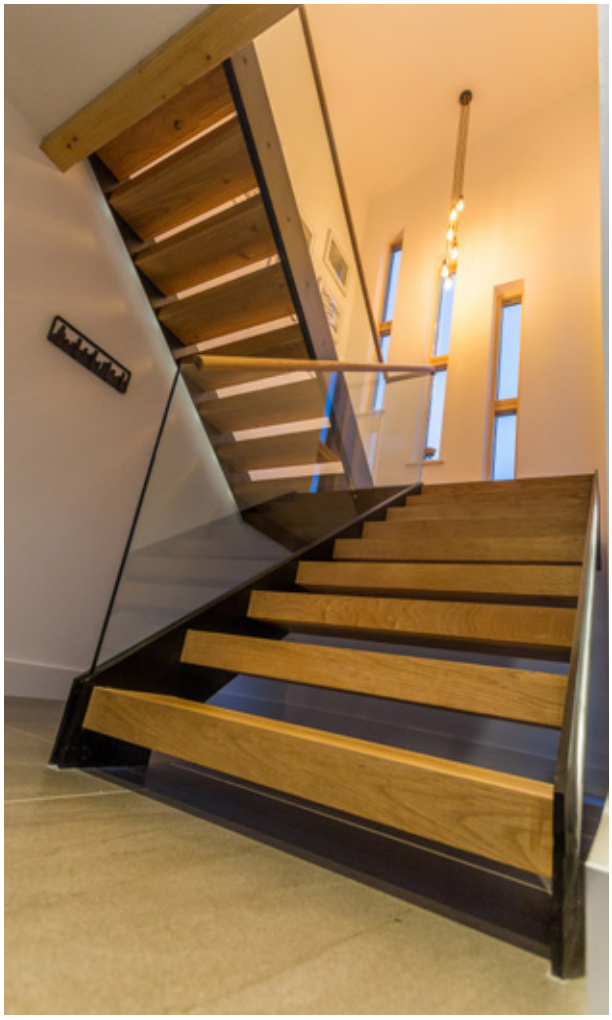
FIXTURES AND FITTINGS
Kitchen Elementi Cucina: elementicucina.com
Sanitaryware Laufen: laufen.co.uk
Boiling tap Quooker: quooker.co.uk
MVHR Rega Ventilation: rega-uk.com
Underfloor heating Continental Underfloor: ufh.co.uk
Tiles Ariostea: ariostea-high-tech.com
Neohub Smart room thermostats Heatmiser: heatmisershop.co.uk

THE BUILD



THE FLOORPLAN
The three-storey house has been designed with flexibility and future-proofing in mind, with bedrooms on every level. It incorporates open-plan living, a home office, an art studio on the upper floor and a family kitchen/dining area which opens directly onto the garden.





STAIRS
The distinctive staircase was designed to sit on hidden supports in the timber frame, with a shadow gap around it, and is the only steel element in the entire building. Steel treads are clad in the same hardwood flooring as the landing, with bespoke nosing.

while large amounts of glazing to the central hall and landing link two distinctive rectangular boxes.

"The house started off a little bigger, but then we needed to shrink it in order to stay within our budget," says Rob. "I came up with two alternative designs: one with a pair of mono-pitch roofs and the other with flat roofs, which the planners preferred as it maintained a lower overall height."

The detached house stands in an area of predominantly Edwardian terraced properties, and while undeniably modern in design the external materials acknowledge the surroundings.

Elevations facing a public park to the south-east are clad in natural stone, referencing the existing garden wall. The other elevations are finished in dark slate-coloured fibre-cement panels in a seemingly random rectilinear pattern, albeit working to a strict 300mm grid that

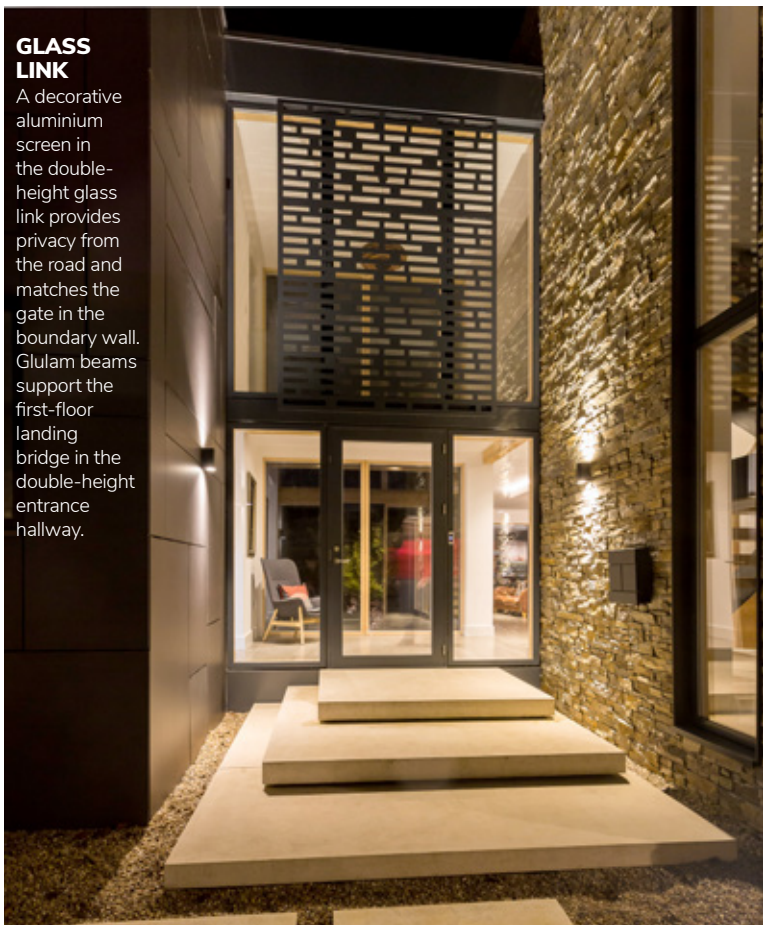
incorporates the window openings. The four-bedroom house also meets the Lifetime Homes design criteria, with ramped access to the family entrance and a ground-floor study/bedroom with an adjoining wet room.

"The hallway is a double-height space, and part of the upstairs landing was designed as a communal play area for the children, with sliding doors which can close it off from the rest of the house," says Rob. "Then there's a bridge landing leading across to the master bedroom and en suite in the smaller wing."

Once planning permission had been granted the family moved into rented accommodation during the build, using the profits from their previous house sale to fund the project.

"I took a 12-week sabbatical from work at Downs Merrifield Architects so that I could project manage the build," says Rob. "One company was employed to complete the demolition and groundworks, and then

KITCHEN
Grey and orange cabinetry and copper accessories were chosen for the kitchen. Biscotto Timo and Anthracite Sole 22mm thick doors were teamed with K-Works Stone Italiana worksurfaces, and walls were highlighted with a frosted bronze mirror.



GLASS LINK
A decorative aluminium screen in the double-height glass link provides privacy from the road and matches the gate in the boundary wall. Glulam beams support the first-floor landing bridge in the double-height entrance hallway.

the timber-frame company delivered the slab, timber frame, internal walls and glazing as a package. After that the fit-out was finished by various subbies."

Work started in February 2017 with the demolition and groundworks, and an opening needed to be made in the garden wall to gain access onto the site. Sewers were repositioned, drainage installed, and tall conifers removed to prevent overshadowing.

Off-site timber-frame construction was chosen to maximise thermal efficiency and minimise time on site, as well as increasing accuracy for the cladding grid.

LANDING
A communal study/play space on the first-floor landing features built-in seating and shelving, and a pocket door allows this area to be closed off.

A 'passive-slab' insulated structural concrete raft provides the foundation for the timber superstructure. "Instead of digging out conventional foundations we put down a layer of hardcore and polystyrene formwork, which is filled with fibre-reinforced concrete to form the fully insulated raft," explains Rob. "It was the first time that the plumbers had installed underfloor heating outside before a house had even been built. They laid the pipes in the rain and we had to mark out where the walls would go using spray paint."

Following a Flood Consequence Assessment the slab also raises the ground floor by half a metre due to the proximity of a brook, which runs along one side of the plot. "This left us with an issue with wheelchair access, so we sloped the parking area and added a pedestrian ramp to the side door," says Rob.

The timber frame was constructed off-site by Advanced Housing Systems in Devon, and was erected in just three weeks during May 2017. "The softwood timber studwork panels were made in the factory, with high-performance plasterboard on the inside and pre-formed openings for windows," says Rob. Both sides of the external walls are closed in the factory, and service conduits and electrical back boxes are pre-installed, which saves time on site."

A local roofing company completed the single-ply membrane flat roofs, and Sara worked with her stepfather to attach the stone slips which have been used to clad part of the exterior. Grey cladding panels were fixed in place by Rob and his parents, but after 10 days they had only succeeded in completing one elevation. "The process needed to be very precise, with consistent 10mm shadow gaps between every section, and some of the bigger pieces were quite heavy," says Rob.

The cladding boards measure 3m x 1m, with each divided into five different shapes – a bit like the game of Tetris – to ensure the whole sheet was used. Composite timber and aluminium windows were chosen to complement the cladding and fitted to the same 300mm grid pattern, with everything planned out in great detail at an early stage.

While work continued outside the interior was fitted out by a team of electricians, plumbers, carpenters, plasterers and decorators. The house was then occupied in mid-September, with only the kitchen

BEDROOMS
The master bedroom suite is positioned in a wing to one side of the landing bridge, with an en suite guest bedroom, two identically-sized children's rooms and a family bathroom to the other.

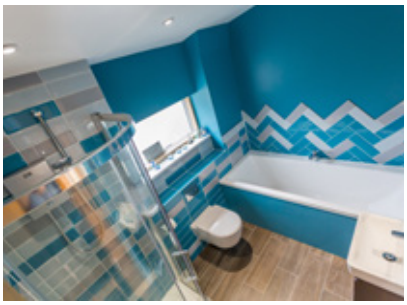
BATHROOM
Electric tile heating has been installed in bathrooms, with sanitary ware from Laufen. The master en suite is copper and orange, and turquoise and blue tiles chosen for the family bathroom with a wave-inspired pattern across the bath.

installation and some cladding work left to finish. "We were concerned about tiling on top of the wet concrete floor slab, and wanted to wait for it to dry out, which delayed finishing," says Rob. "The kitchen was then installed in mid-October and formal Building Regulations completion was achieved in November 2017."

Super-insulated and airtight, with a passive solar design, the house requires only minimal heating -- scoring a SAP rating of 85 and airtightness tested at 1.3.

"There's no heating upstairs, other than electric tile heating and towel radiators in the bathrooms," explains Rob. "We have a mechanical ventilation and heat recovery system, and the smart heating system has room thermostats so that we can monitor how the house performs now we're living in it, which is useful for me as an architect."

Brook House has been shortlisted for the RSAW 2018 Welsh Architecture Awards, the first round of the RIBA Awards that culminate in the Stirling Prize and House of the Year competitions. "It's been an exciting project building a house for our own occupation, and getting so involved at every stage," says Rob. "To be honest it's turned out even better than we'd imagined and is somewhere we plan to stay."



"By keeping bedrooms fairly modestly proportioned we could increase the size of the circulation space to create a large landing and play area rather than corridors. It makes it feel like a bigger house."
Robert and Sara Boltman's top tip

Final word

What was the high point?
Seeing our timber frame arriving on the back of a lorry was an exciting moment.
...and the low point?
A two-month delay in planning was caused because of the referral to planning committee, who then decided to visit the site, which held up the start of the build.
The best buy?
Our modern feature light which was made from component parts bought online.
...and the biggest extravagance?
The staircase, which is constructed using steel and finished in timber matched to the first-floor landing.