

DETAILS

What A three-bedroom home designed to be shared by two households

Where Dundee

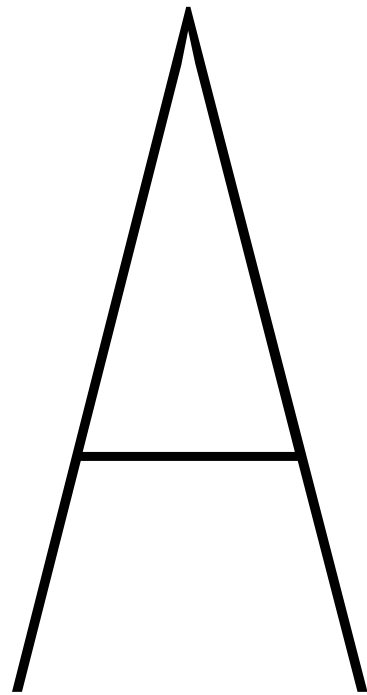
Architect Kirsty Maguire

Main contractor Alpha Projects

THIS CHANGES EVERY THING

Ultra-sustainable in the way it was built and the way it functions, this clever, award-winning house in Dundee points to a better future for people and planet

Photography **David Barbour**
Words **Caroline Ednie**



superb building... A beautiful house to look at and spend time in... A wonderful piece of architecture. These were the words of the Dundee Institute of Architects as it handed both its Best New Home Award and its Supreme Award to KMA's Seed House, which emerged in the summer of 2023 on the outskirts of the city. The judges weren't just won over by the building's form and appearance; they also loved that it had been designed for co-living, with two households sharing a mixture of communal and private spaces: "It tries to do something new with the way we live," they said.

It certainly does, and that "something new" extends to the way it has been constructed as well as its purpose, with low-impact materials such as Scottish larch, recycled paper insulation and reusable zinc employed instead of concrete. It's built to ultra-low-energy Passivhaus standards, with environmental responsibility at the heart of the brief.

The project began in 2019 when Karoline Hardt, who works with local community groups that focus on ecology and education, bought a one-off 1950s house on a beautiful woodland site, intending to update and refurbish the house in an environmentally conscious and sustainable way. With this in mind, she approached architect Kirsty Maguire of KMA, a practice based nearby in Newport on Tay that specialises in Passivhaus design.

"The house was damp and deteriorating and didn't make the most of its leafy surroundings," says Kirsty of her first impressions. "Karoline wanted material changes as well as extensive alterations, which meant there would have been little left of the existing house. So we took a different approach, taking the building down and starting again."

They had to dispose of the asbestos and plasterboard, of course, but just about everything else following demolition was kept and recycled. "For instance, the bricks, the concrete blocks and the roof tiles were reused in the garden to make beds and were used in the foundations of the new house," says Kirsty.

Above these recycled foundations, her building, which was designed to be easily deconstructed and reused at the end of its own life, sits on steel screw piles. It is largely constructed from wood – a timber frame, insulated with recycled paper and timber insulation boards, and with timber cladding and decking – resulting in a cosy home that has the added benefit of significantly reducing the embodied carbon in the build. Zinc, which is recyclable, was used for the roof, gutters and downpipes. The rainwater itself is collected in old whisky barrels for use in the garden.

"One of the key parts of the brief was to look at the environmental impact of all the materials and to avoid the likes of cement," says Kirsty. "Grout has cement in it so we didn't use tiles anywhere. We do this a lot in our buildings, anyway." The local planning department was very supportive of KMA's plans and proposed construction method, and appreciated that great care was being taken to avoid damaging the roots of the trees. (The gravel that was employed in this process has since been reused in the landscaping around the building and in another KMA project.) ▶

Opposite These four views of the exterior show the random arrangement of the vertical cladding (supplied by Russwood). This was done deliberately to reflect the endless variation found in the surrounding woodland – trees which the owner, architect and builder took great pains to protect during construction. Fife Landscaping helped with the garden. **Previous pages** The house is a simple shape with little adornment, yet it is interesting to look at, thanks to the cladding and the asymmetric positioning of the windows. The small building to the right is a bike shed, which replaced the former garage – the residents' main mode of transport is cycling





Top left The communal corridor. **Bottom left** The clay walls in Karoline's living area have a warm brown tone. **Below** "We wanted the building to sit above the ground so you have to bridge the gap to get in and out," says the architect. "That's partly done by the bridge at the front." The insulated timber-panel frame and the floor, walls and roof were made by Eden Insulation, with the Passivhaus detailing built in during manufacturing

Internally, the two-storey house is arranged with living areas on the ground floor and three bedrooms above. As it's designed for two families or groups of friends, there are private and shared spaces – among the latter are a large communal hallway, an outside dining area and a sauna. Karoline explains that the hallway, which connects the two kitchen-dining-living areas, plays an important role in communication between the two households. "I stumbled across an example of a house for a family and their grandparents which had a door between their kitchens – they would leave it open to signal they wanted to spend time together. I really liked the idea," she says. "We use the sliding doors between the living

areas to communicate in the same way. If it is closed, it's saying we want some down time on our own. If it's partially opened, it means we're spending time on our own but you can still come in. And if it's fully open, 'please come in!' is the message."

The interiors are light-filled yet cosy and enveloping. The timber finishes create a nurturing effect and the built-in wooden furniture "makes the area almost feel as though it is carved out of a tree", suggests the architect. Complementing the timber are clay plaster finishes, with Karoline's side of the house using a warm brown and her housemates' space a more traditional warm white.

The ground floor has a communal office too that Karoline ▶





“The house is something of an experiment because none of us has lived like this before. It was scary at first, but it is working very well”

This page and opposite Wood is the key building material inside and out, as it is renewable and low impact and gives the client the visual warmth she was looking for from the design. Russwood supplied the internal timber finishes, including the flooring. The main contractor, Alpha Projects, made all the doors. The kitchen is by Birkwood, and the triple-glazed windows were sourced from Green Building Store

shares with Carolina, a lecturer, and Daniel, a researcher (with his daughter Emilia), who all work from the Seed. “I’m at home most of the time and have started working with a group of home-educating families,” says Karoline, who is involved in promoting permaculture in Dundee and hosts meetings from the house. “The garden is a play resource for the children and is being designed to make it more suitable for their play. We’re also planning a treehouse at the moment. It’s about making the garden a better place for them and the wildlife.”

She is also keen to expand the garden’s capacity for producing food, planting fruit trees and vegetables, and establishing hedge-rows rather than putting up fences, where people can forage as they pass by. “We want the house and garden to be a resource for more people, to promote communal ways of living,” she explains. “People in Dundee are increasingly leading efforts to turn the city into a green space and we’re keen to contribute and do things based on ecological and social values.”

The eco ethos of the Seed is quite a leap of faith as well as ►



Above The south elevation has a pergola for solar shading. It forms a framework where plants can grow up and around to create a garden feature. The structural engineer on the project was David Narro Associates and the quantity surveyor was Ralph Ogg Associates. Max Fordham was the services consultant. **Below** One corner of the ground floor is devoted to a sauna, which is shared between the two households

a statement of intent, considering this is the first building project Karoline has been involved in, and living as part of two families is also a new experience. “The house is something of an experiment because none of us has lived like this before. It was scary at first,” she recalls. “But it is working very well”

“The social and the sharing aspect of the house is better than we anticipated,” agree Carolina and Daniel. “And when you’re inside, you feel so connected to the garden and the trees thanks to the views through the large windows. It’s also so comfortable – there are no draughts in the house. It’s so well insulated from the cold and noise.”

“We are creating roots in Scotland,” all three say. (Karoline is originally from Germany, Carolina is Chilean and Daniel is from Brazil.) “The Seed and the garden make us feel grounded. There is something very deep that is happening in the connection.”

The judges at the Dundee Institute of Architects would agree: “The client believes groups of friends living together helps deal with everything from social isolation to health and wellbeing,” they say. “As well as being a wonderful piece of architecture, this project just might help trigger a discussion about whether we can change the way we look at housing and at what makes a home.” ■

