THE SEED CO-HOUSING

Kirsty Maguire Architect Ltd

Project Description: *The Seed* is a co-living home in a woodland garden near Dundee. The vision for a shared home was created with a focus on community and sustainability. Initially planning a retrofit of a crumbling building, after careful analysis, a new home was created. The Passivhaus home is almost entirely timber - OSM timber frame with cellulose and wood fibre insulations, with timber and fermacell linings and womb-like dark clay and airy white clay finishes. The foundation uses ground screws. The pre-existing home remerges in the new including salvaged bricks used in the construction of the foundation, retaining walls and landscaping. Technically confident, the eco-passivhaus is set within tight woodland. *The Seed* challenges traditional ideas of homeownership and consumption. Its success lies not only in its energy-efficient design but also in reimagining how living spaces and landscapes can foster community– and last but not least, joyfulness.

Standards met: Passivhaus Classic, RIBA 2030

Location: Liff, near Dundee.

Construction: Timber I joist frame OSM kit with wood fibre insulation including timber kit ground floor, suspended on steel ground screws. Scottish timber cladding and decking, zinc roofing. Femacell, clay and timber linings with glass for wet spaces. Triple glazed timber frame windows. Reuse of almost all of the demolished building in root protection, perimeter detailing, garden, gabions and foundations. Temporary root protection was also reused on site and in another KMA building. Cement use all but eliminated throughout. Rainwater recycling using reclaimed whisky barrels. Woodland garden and biodiversity pond.

Occupied since: August 2023

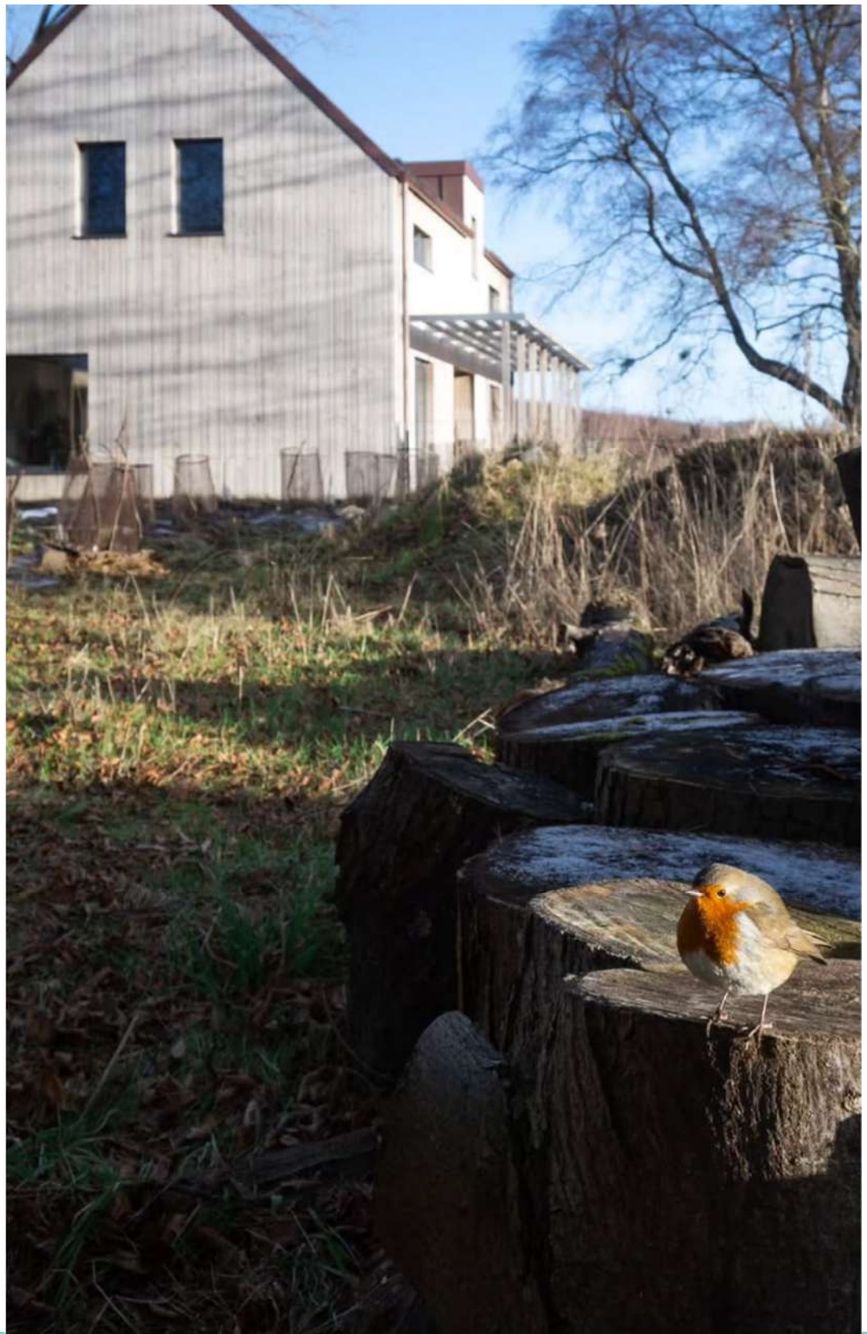
Certification Date: 22nd March 2024

Gross Internal Area: 218m^2

Treated Floor Area: 177m^2

Form Factor Ratio: 4

Heat Source(s): ASHP for DHW and heating, with wet radiators



Overall energy demand

Heat demand: 20kW/m$_2$.a (modelled)
Heat load: 10W/m$_2$ (modelled)
POE measured energy use for all energy in building: 23kW/m$_2$.a

Annual running costs

£5.75 m$_2$/ yr (measured) for both households assuming 25p/kWh for electricity, for all energy use. No generation on site.

Construction costs

(£/ m^2) confidential.

TEAM CREDITS:

Client: Karoline Hardt
Architect & PH Consultant: Kirsty Maguire Architect Ltd
Structural Engineer: Narros
Services Engineer: Max Fordham
Arboriculture: Fife Landscaping
Ecology: Tay Ecology
MVHR designer: Paul Heat Recovery Scotland
Contractor: Alpha Projects
OSM supplier: Eden Insulation
Certifier: Ingo Theobalt

PROJECT OVERVIEW

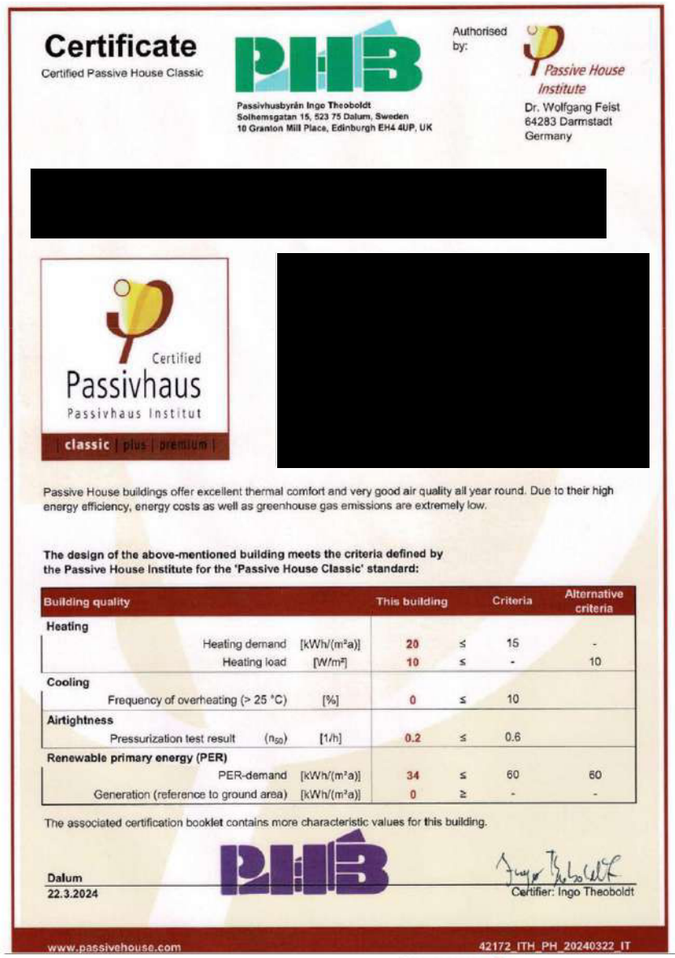
Sustainability Concepts underline all decisions throughout the project to meet PH classic and 2030 RIBA sustainability standards

Shared living – community and reduced resource use by:

- Minimising embodied carbon of the building, Minimising energy use and carbon through building life
- Reusing materials from site, Specifying low impact and reusable/recyclable materials
- Sharing resources as co-living, Creating intentional community from inhabitants and wider collaborators
- Leading by example in build and lifestyle concepts, Sharing learning, enabling training and research
- Working with the landscape for design, wellbeing and ecology, Designing for current and future climate by design stress testing

Performance outcomes:

- Design is unique – concepts are replicable, lessons are shared
- Well managed works to create low risk innovative building overall
- Collaborative process - technical quality is standard approach for Kirsty Maguire Architects with social sustainability led by client
- Design and Construction
  - Use of low impact, low embodied carbon materials maximised
  - Waste minimised with specification and OSM construction
  - Wellbeing of operatives improved by using OSM so no working in cold, muddy conditions
  - Reuse and recycle of existing building successfully achieved
  - Tree root protection using cellular confinement system (Geoweb) with added benefit of better functional working environment (including no mud) and less damage to soil
  - Bat rehoused by qualified ecologist
  - Passivhaus classic – insulated, draft free and ultra low energy
- Lifetime of building
  - Ecology and planting, permaculture
  - Low energy and low carbon
- End of life
  - Landscape – remove building and unscrew, refill solum
  - Recyclable and low toxicity materials – timber, metal roofing, steel screw piles
- Social and wellbeing
  - Cohousing and community
  - Training – skills development in partnership with KMA/BE-ST/Coaction for main contractor, subcontractors and contractor workshops on site for local college and apprentices. Details below.
  - Community building by clients beyond the house and garden – permaculture, shared home schooling, beehive housing
  - Shared sauna and outdoor swimming



Certificate

Certified Passive House Classic

PHB

Passivhusbyrån Inge Theoboldt
Solhemsgatan 15, 523 75 Dalum, Sweden
10 Granton Mill Place, Edinburgh EH4 4UP, UK

Authorised by: Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

[redacted]

Certified Passivhaus
Passivhaus Institut
classic | plus | premium

[redacted]

Passive House buildings offer excellent thermal comfort and very good air quality all year round. Due to their high energy efficiency, energy costs as well as greenhouse gas emissions are extremely low.

The design of the above-mentioned building meets the criteria defined by the Passive House Institute for the 'Passive House Classic' standard:

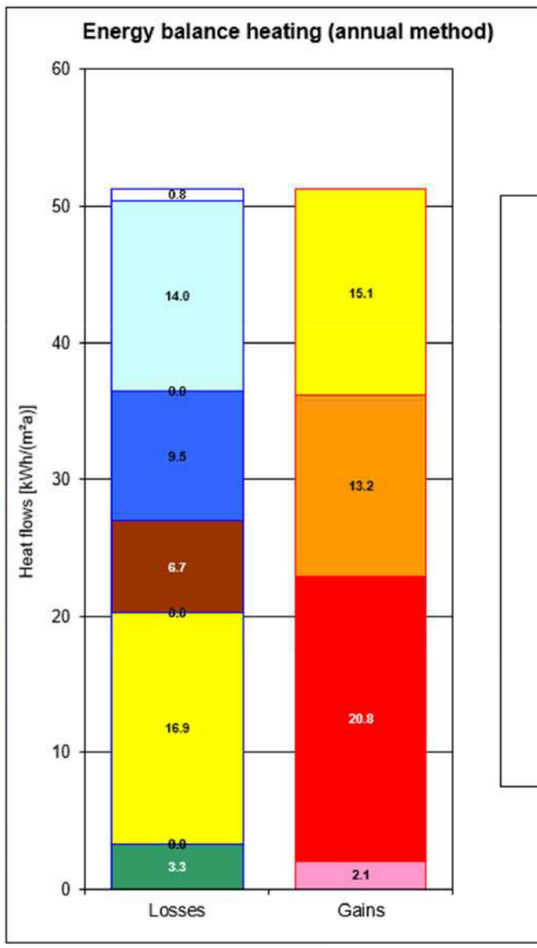
Building quality			This building		Criteria	Alternative criteria
Heating						
	Heating demand	[kWh/(m²a)]	20	≤	15	-
	Heating load	[W/m²]	10	≤	-	10
Cooling						
	Frequency of overheating (> 25 °C)	[%]	0	≤	10	
Airtightness						
	Pressurization test result	(n_{50}) [1/h]	0.2	≤	0.6	
Renewable primary energy (PER)						
	PER-demand	[kWh/(m²a)]	34	≤	60	60
	Generation (reference to ground area)	[kWh/(m²a)]	0	≥	-	-

The associated certification booklet contains more characteristic values for this building.

Dalum
22.3.2024

Certifier: Ingo Theoboldt

www.passivehouse.com 42172_ITH_PH_20240322_IT



					Criteria	Alternative criteria	Fullfilled?[2]
	Treated floor area m²		176.8				
Space heating	Heating demand	kWh/(m²a)	20	≤	25	-	yes
	Heating load	W/m²	10	≤	-	-	
Space cooling	Cooling & dehum. demand	kWh/(m²a)	-	≤	-	-	-
	Cooling load	W/m²	-	≤	-	-	
	Frequency of overheating (> 25 °C)	%	0	≤	10		yes
	Frequency of excessively high humidity (> 12 g/kg)	%	0	≤	20		yes
Airtightness	Pressurization test result	n_{50} 1/h	0.2	≤	1.0		yes
Non-renewable Primary Energy (PE)	PE demand	kWh/(m²a)	85	≤	-		-
Primary Energy Renewable (PER)	PER demand	kWh/(m²a)	34	≤	67	67	yes
	Generation of renewable energy (in relation to projected building footprint area)	kWh/(m²a)	0	≥	-	-	

STANDARDS & CERTIFICATES

Construction and future:

- OSM – fully insulated low carbon passivhaus kit. Wind and watertight within a week. Eden Insulation passivhaus kit with TB free detailing. Looked at OSM straw insulated kit but weather vulnerability at the time of specification meant this was not suitable – supplier now changed product options
- Changes to building regulations solum requirements are now in place so shorter screws could be used with less onerous ground works and decking, reducing cost and extent of materials required
- Use of unique site opportunities – recycled materials and biophilic design
- Example of ‘architectural’ passivhaus building with difficult site constraints and restricted solar gain – good example for upcoming changes to Scottish Building Regulations

Training in Eco/Passivhaus

- 6 senior contractor staff – Coaction/BEST with Kirsty Maguire as one of the trainers
- 15+ college students – site visits and airtightness rig on site for them and on site staff
- Full workforce at contractor level from work experience and apprentices to senior staff – toolbox
- Airtightness on site training done during 1st air test for operatives to see impact of their work immediately
- Experienced design team for passivhaus and low carbon led by KMA with ongoing research in practice to upskill and extend knowledge of all involved.

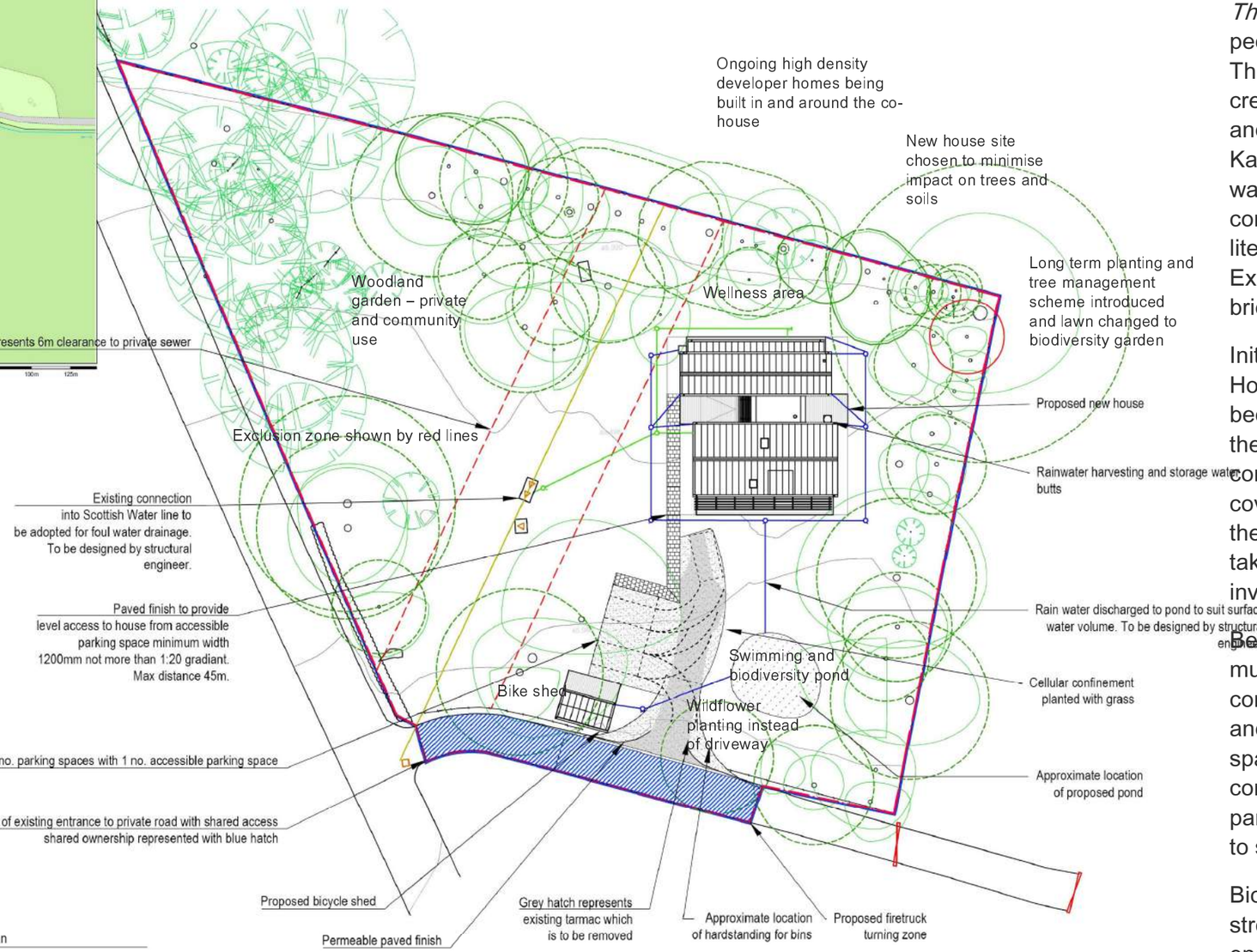
Coaction/BE-ST contractor training

Apprentice airtightness rig intro

Training with immediate results - airtest

STANDARDS & CERTIFICATES

Location Plan 1:250 @ A3



Proposed Site Plan

Recycled plastic crates used for 'parking' wildflower area. No cars in the household, bikes only. Parking shown for regulatory requirements only.

Bike shed instead of traditional garage, with ebike charging points and connection for future EV charging if ever required. Clients use ebikes and cargo bike

KIRSTY MAGUIRE ARCHITECT

The Seed stands out for its deeper exploration of how people use and interact with buildings and landscape. This project is rooted in a vision of shared living - creating a community - that is woven into every decision and extends well beyond the physical boundaries. Client Karoline's vision to create a small-scale co-living home was also inspired by practicalities of reducing resource consumption. She was keen to ensure the building literally and environmentally sits lightly on the ground. Exploring what this meant drove the collaborative briefing process.

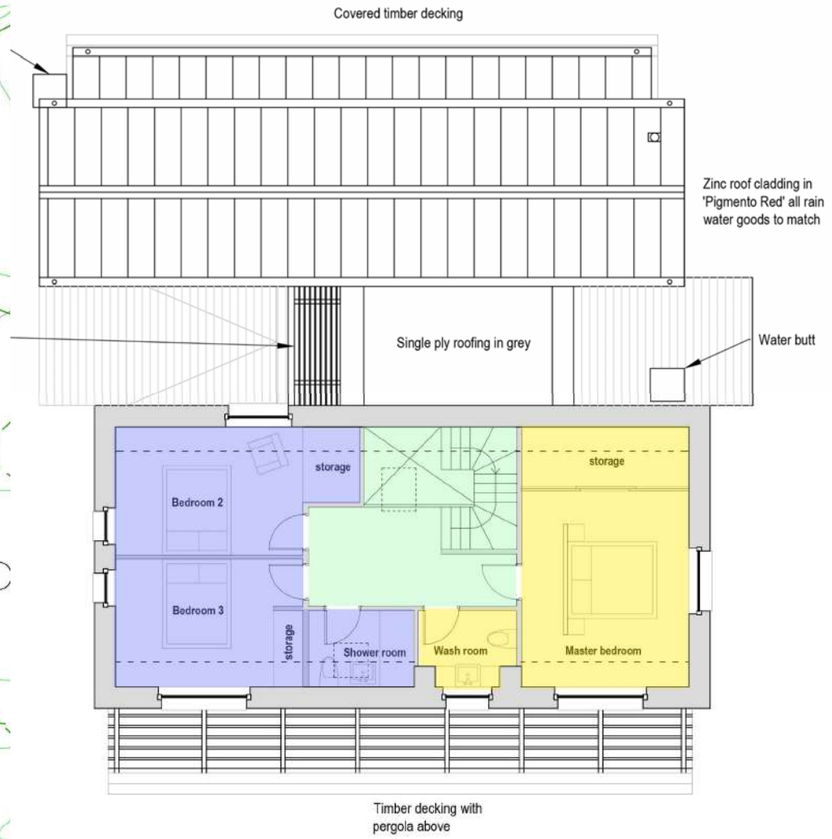
Initially, Karoline planned to retrofit the existing house. However, after consulting architect Kirsty Maguire, it became clear that it was in too poor condition. Most of the existing building was reused or recycled within the construction of *The Seed*. The woodland garden is covered by a Tree Preservation Order and the web of the mature tree roots restricted development. The care taken in design was supported by planning. Time was invested in design to minimise build time.

Beyond the building's performance, *The Seed* is very much about people. The new house includes private and communal areas both indoors and out: balancing privacy and community via the flexibility and flow of how each space is used. The inhabitants have developed simple communication practices like using open, closed, or partially open sliding doors to signal whether they wish to socialise.

Biophilic design and sunlight are core to the building, strongly linking the permaculture communal garden, encouraging interaction with nature and community, such as offering space for a local beekeeper and hosting meetups for homeschooling families.

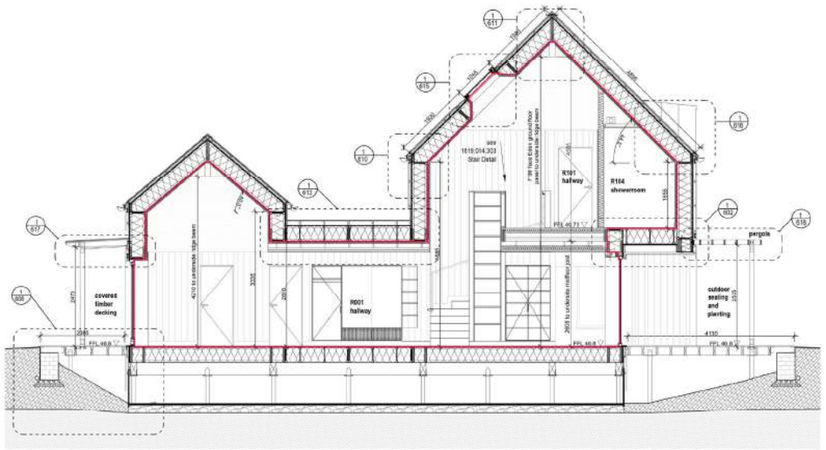
DESIGN PHILOSOPHY & SITE PLAN

Ground Floor Plan - showing zoning



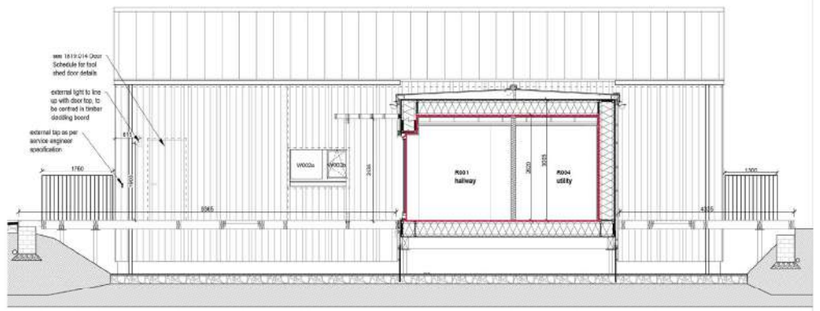
1st Floor Plan

ARCHITECTURAL DESIGN & AESTHETICS

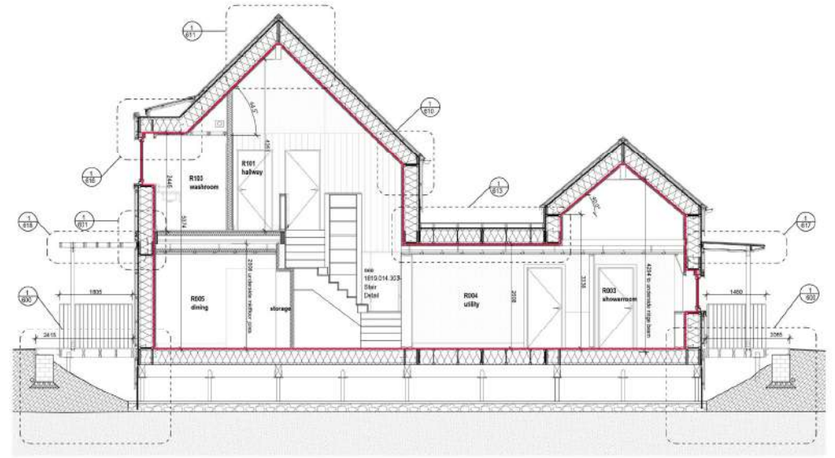


Long Section: through shared spine and external covered spaces

1:100 @ A3



Short Section- through link building

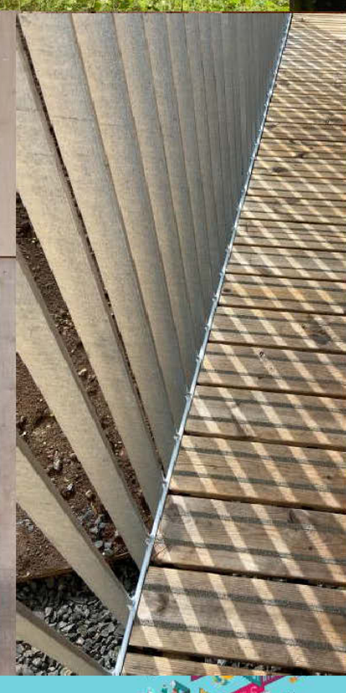


Long Section through stair, east family spaces and service spaces

South Elevation

West Elevation

ARCHITECTURAL DESIGN & AESTHETICS



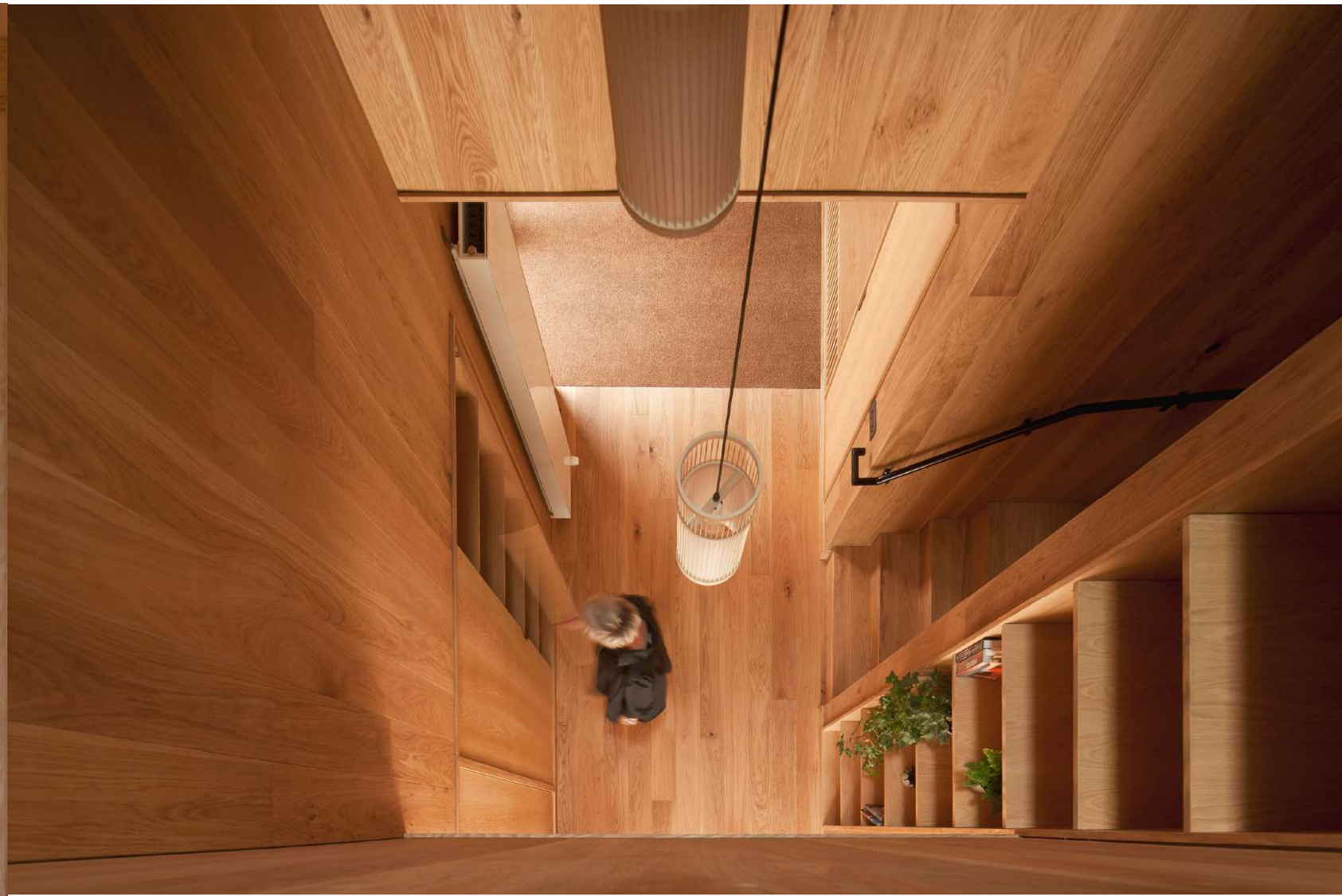
ARCHITECTURAL DESIGN & AESTHETICS

The brief called for ‘Womb-like’ spaces. This is achieved with timber lining in shared spaces and clay in private spaces. One family’s area is brown clay and the other is white.

The two living spaces are opposite one another with sliding doors. The occupants have developed a non-verbal language:

Full open means’ you are invited in’, half open means ‘do come in if you would like to’ and closed means ‘time for ourselves’

ARCHITECTURAL DESIGN & AESTHETICS

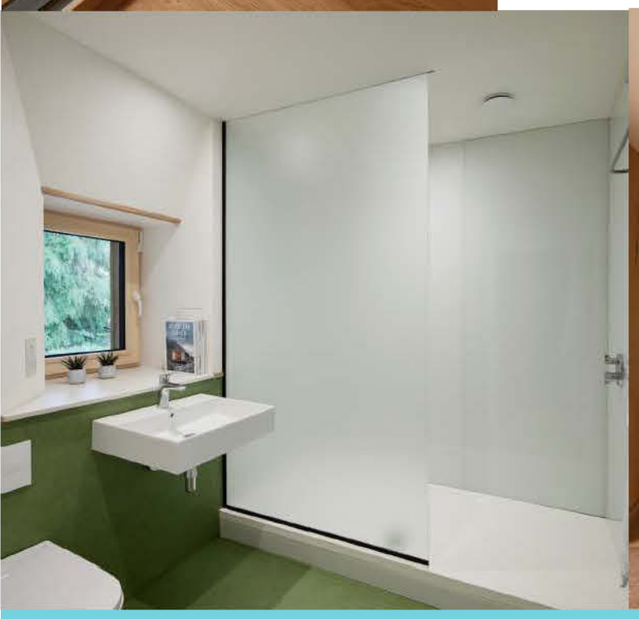


The central stairwell and lightwell connects the different parts of the house for communications, light and ventilation and forms the hub.

ARCHITECTURAL DESIGN & AESTHETICS









ARCHITECTURAL DESIGN & AESTHETICS

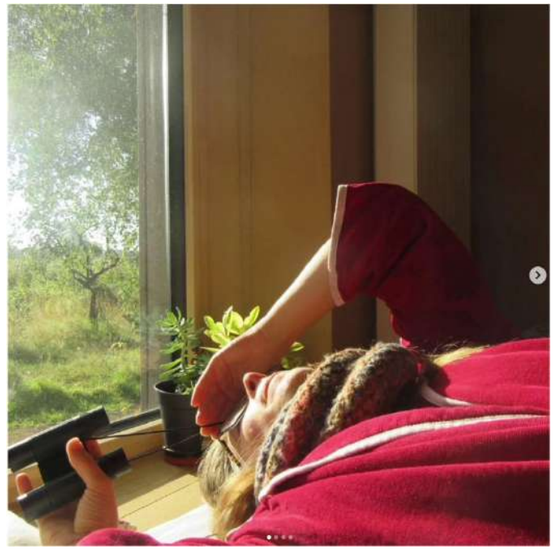
Summer comfort strategy:

- The house is designed using PHPP as a tool to help to minimise overheating risk, with further detailed analysis using TM 59 analysis.
- The client is particularly sensitive to overheating so criteria were strict with some analysis run as below 19 deg C.
- Windows are kept to 21% of the floor area to gain good daylighting but not overglaze
- Large windows are on the south to manage solar gain, with a pergola for some shading, with future planting although the house does not rely on this planting
- An additional shading blind was introduced on the west window after the TM59 analysis
- The house does not rely on any window opening for cooling but night cooling was included in the certification, with stack ventilation included with 2 rooflights. Opening windows are in each room as per best practice
- There is no active cooling
- Ventilation is Comfoair 350 MVHR unit with summer bypass
- DHW and heating is and ASHP with wet radiators
- No PVs installed due to shading of mature trees

The clients have confirmed that the building is very comfortable and quiet despite the busy adjacent road and they don't need to open windows although they do so sometimes to hear the birds sing.

'As I am German, the idea of a house where there is always fresh air is really important. It seemed hard to believe at design stage that enough would be provided just by the MVHR. But, it turns out that it is and we love this.'

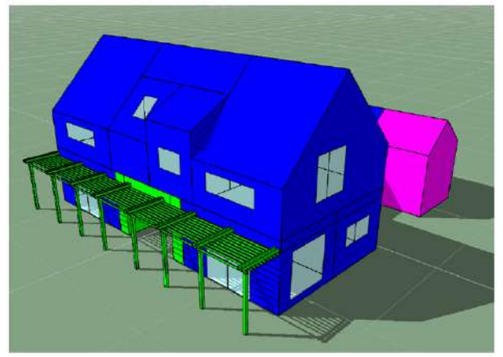
Karoline and Carolina

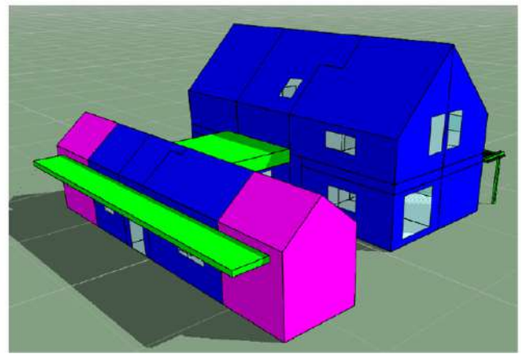


No. Occupants: 4

Overheating/year: 0%

One of the household enjoying the sun whilst birdwatching in the garden





Secondary calculation: Additional night ventilation for cooling

Air change value during additional window night ventilation

Description								
	Reduction factor	Velux 201/203	R202/102	R105/R106	R103			
		25%	25%	25%	25%			
Climate boundary conditions								
	Temperature diff interior - exterior	1	1	1	1	1	1	K
	Wind velocity	0	0	0	0	0	0	m/s
Window group 1								
	Quantity	1	1	2	1			
	Clear width	0.78	0.78	0.70	0.98			m
	Clear height	0.98	0.98	1.28	1.00			m
	Tilting window (check if appropriate)	x	x	x	x			
	Opening width (for tilting windows)	0.200	0.200	0.050	0.050			m
Window group 2 (cross ventilation)								
	Quantity	1	1	2				
	Clear width	0.78	0.47	0.47				m
	Clear height	0.98	0.46	0.46				m
	Tilting window (check if appropriate)	x	x	x				
	Opening width (for tilting windows)	0.200	0.050	0.050				m
	Difference in height to window 1	0.00	2.10	1.00				m
							Total	
Result: Night ventilation values		0.04	0.02	0.02	0.00	0.00	0.08	1/h

Monitored data graphs/ charts

Technical:

- Ongoing temperature and energy use – significantly below PHPP/SAP predictions. Energy bills were reviewed after the first year with the overall all energy used within the building working out at 23kWh/m^2.a using TFA.

- Internal and external temperature and CO_2 monitoring was set up by the client at practical completion to run for minimum 1 year. Unfortunately, the monitoring kit failed and this was only recently replaced (new Netatmo kit installed on 22nd March 2025) with this now ongoing for internal and external temperature and humidity, and internal temperature, humidity, CO2 and pressure. This will continue for the foreseeable future and be periodically assessed.

- The client group has reported excellent indoor air quality, temperatures and humidity, helping with wellness including the contrasting materials for the womb-like atmosphere and sun/daylight as well as technical experience

- Completion air test result was 0.18ACH@50pa

Social:

- Social and playful community building. See lessons learned section for more information.

EUI:

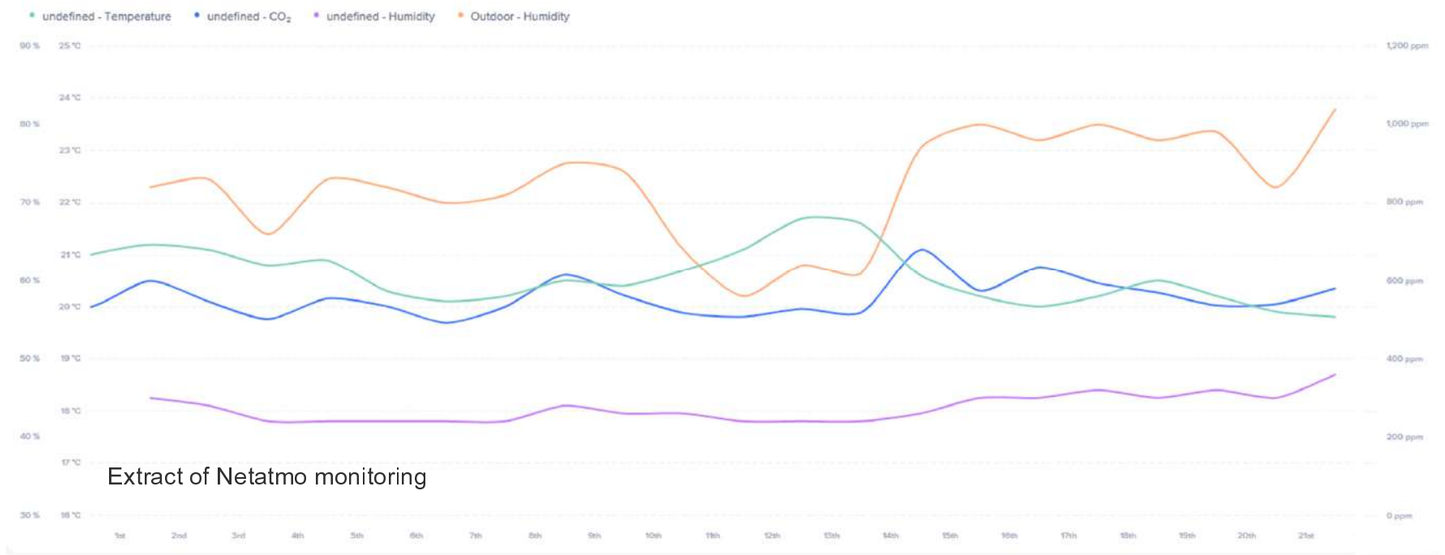
23kW/m^2.a (measured data from 1 year of energy bills)

Running cost comparisons

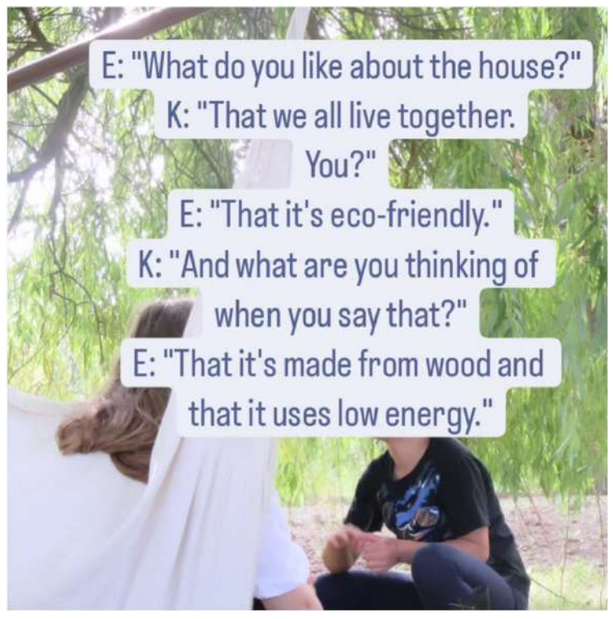
Actual running costs: £5.75 m^2/ yr (measured) for both households assuming 25p/kWh for electricity, for all energy use.

No generation on site.

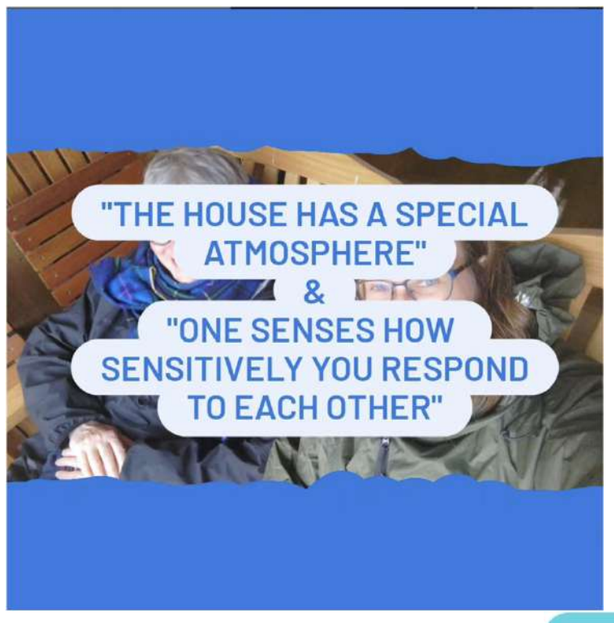
SAP predicted running costs: £8.18/m^2/ y



Extract of Netatmo monitoring



9 year old 'E' explains her experiences to 'K'



A family member after a few day's stay in the house

Post completion embodied carbon calculations:

Calculated largely as RICS 2023 whole life carbon assessment including specialist groundworks, substructure, superstructure, floor, wall and ceiling finishes, building services, fittings, furnishings and equipment – excluding kitchen appliances – and external works stage A1-C6. Where EPDs could not be identified for a given material, EPDs for similar products were used or ICE. Default transport assumptions taken from RICS 2017, except for reused materials from site. No EPD was available for the screw piles so estimated from 2 similar products.

When assessed against 2030 RIBA Challenge target of 625kgCO_2e/m^2 – which does not include external works – cradle to grave score is 582kgCO_2e/m^2 . Arguably the building is better than it looks – it includes external works and accommodates 2 households using fewer resources that it would have if two separate homes were built.

Looking at timber in lifecycle assessment, by practical completion 408kgCO_2e/m^2 had been omitted (88.3 tonnes of CO_2 e) but it sequesters 441kgCO_2e/m^2 (95.5tonnes CO_2e) the building sequesters more CO_2 than was emitted to build it. The biggest carbon hotspots are the screw piles at 13.8 tonnes CO_2e followed by the zinc at 7.

Foundation options were also reviewed in retrospect, with the longer than originally anticipated steel screws coming in better than traditional strip foundations but slightly worse than an insulated raft. If shorter screws were used, results likely would be swapped, so with new regulatory changes this may be easier in future.

Also, embodied carbon calculations were undertaken during design stage to assess foundation options to assist in the client choosing how to build. Reducing embodied and in use energy and carbon was a primary driver of the design and construction of the building and influenced every single decision. Cement products were almost eliminated, save less than a tonne of grout added at construction in foundations due to the increased water table to when surveyed.

- Foundations: The embodied carbon study completed at design stage enabled a comparison of foundation options with energy, carbon and wider design implications assessed to enable a decision by the client on how to proceed
- Above ground: Almost the entire above ground building is made from timber and timber products, sequestering more carbon than the construction emitted. Other materials are chosen to be low carbon and recyclable wherever possible
- Reclaimed and reused materials: Materials from the existing house were reused wherever possible as noted elsewhere in the submission, along with much of the root protection gravel and cellular matting. Where not reused on site, the gravel and cellular matting was reused on another of Kirsty Maguire Architect's local sites to minimise the use of virgin material
- Timber: Whilst timber is heavily used in the building, the timber frame is I joists and the quantity of these were minimised, to reduce the quantity of solid timber in the building structure, rather than mass timber, as good quality timber is a precious resource.

Reused old house in solum, and ground screws

Embodied carbon:

582 kgCO_2e/m^2 including landscaping and external works

Root protection

CONSTRUCTION APPROACH

It is worth emphasising that foundation comparison results are only indicative as they used assumed specifications and estimated data. Given commercialisation of low carbon steel manufacturing, it may just be a matter of time before a ground screw manufacturer has very low embodied carbon EPD scores. This, however, highlights the need for both energy and carbon to be assessed as with in-use energy and carbon assessments for this building.

The client originally came to Kirsty Maguire Architects to refurbish, alter and extend an existing 1950s brick-built house. Initial design work centred around this, along with a conditions survey. The house was in very poor condition with almost all the components requiring replacement including all services, fixtures and fittings, windows and doors, roof, ground floor structure and solum dig out, removal of extensive non-original extension and garage, chimneys and some walls needed rebuilt due to decay.

In addition, remaining walls suffered from damp. A set of drawings were prepared to show the tiny amount of the building remaining, even before alterations to meet the wider client brief. Therefore, the building was carefully demolished, materials sorted, and the majority reclaimed for reuse in the new building and landscape. Only plaster, cabling, pipework and some timbers were removed from site. All the rest of the building was graded then reused and recycled, replacing the need for virgin material to be brought to site including existing wall structures (brick built): cleaned and reused in foundations, retaining structures (gabions) and landscaping displacing cement almost entirely, Windows: the single glazed metal framed windows reused in garden for plant growing, Bath: reused in garden, Timbers: reused in garden structures, Stone cladding: reused in landscaping

The same approach was taken with tree management, with a strict plan for an ecological Forest Garden requiring some tree works. All timber is retained on site for habitat creation and root protection materials were reused in the finished building and at another local project by Kirsty Maguire Architect Ltd to further reduce wastage and enhance reuse.

A podcast on reused materials in this project is at https://www.houseplanninghelp.com/hph342-how-to-incorporate-reused-materials-on-a-self-build-with-kirsty-maguire/

The OSM construction system was a standardised system by Eden Insulation. The building has been designed to improve the site biodiversity compared to the previous building and landscape, the construction was managed to maintain soil health using the root protection system across the whole site – also increasing wellbeing during construction by having a clean and non-muddy site and the whole building is designed to be removable at end of life and the screw piles removed.

Detailing was bespoke especially for the foundations and with changed building regulations since the house was designed, the solum could be less meaning that the screw piles could be shorter. However as designed, full access is available to the solum for inspection and maintenance which would not be possible with a shallower solum.

Reused bricks from old house in retaining gabions and Scottish timber cladding

CONSTRUCTION APPROACH

The client, Karoline, came to us at KMA and asked for a design that was environmentally and socially sustainable with a unique design but testing out replicable concepts. The building is eco and passivhaus as a baseline and this supports her enthusiasm for social sustainability - skills development and sharing of the lessons both academically and practically. It is a building which stands alone, yet rooted in a community.

Social benefits include:

- Shared living and exploring how that can work on a small scale, considering how our communities and family can live together yet maintain privacy to create a supportive community with flexibility for change. This is applicable to a broad range of occupant types, and lessons learned about interaction and privacy /community balance could be upscaled to multiple units for a mid way solution between large scale co-housing and traditional single family accommodation
- The community extends beyond the house, with it and the garden being used for activities such as home schooling, permaculture gatherings, wellbeing gatherings for sauna and cold water bathing as well as into Dundee projects and beyond
- PV panels were not installed in the project due to overshading from the trees, and the money was invested in local community projects instead
- The project is focused around the garden, with inside/outside space flowing and the garden and wildlife activities a priority. This includes food growing, and the hedge is planted with fruiting bushes - passersby are encouraged to forage themselves
- Construction was a passivhaus OSM kit that can be replicated for risk management - QA and weather primarily - as well as benefit to all construction staff for working conditions in the Scottish weather. The main contractor was very keen to work with and learn about passivhaus, with them training staff then cascading that learning through their own team and to trainee apprentices with KMA support. This has now been implemented on their follow on projects
- Tree protection and ecology was rigorous and lessons have been shared at conferences and used in more recent KMA projects.

KMA assess projects for lessons learnt for new projects in house and shares expertise through publications, podcasts and locally through talks and newspaper articles. This project includes:

- Co-housing lessons for what works well – see client statement. A range of OSM kit options were reviewed, with a key requirement for the client being to work with people who will use their learning in their future careers, not only for this project. The client is very research focused which has, for example, allowed us to develop detailed overheating risk assessments and review PHPP assumptions in more detail which is rarely allowed for in client processes for projects at this scale. Ongoing discussions with the clients is also key to understanding the success, or otherwise, of projects and that continues.
- The screw piles were chosen to minimise embodied carbon, while allowing the flexibility for large window openings and the contemporary style design that the client was keen to achieve. In the end, the screws were longer than originally anticipated so carbon savings not necessarily achieved – see detailed calculations – but the other benefits of them include that the building can easily be removed at end of life, and the trees have been protected have been achieved.
- Providing training, ensuring material reuse, maintaining soil health, working with and improving ecology and biodiversity and root protection are also not new to KMA, but this was rigorously applied in this project, with feedback on success from the clients ongoing.

LESSONS LEARNED

Home schooling – designing treehouses

The Seed occupant enjoying the house

Sharing learning

I came to Kirsty (Maguire, architect) asking her to design a house that is ecological and social. I didn't know then what that could look like.

Kirsty will already have told you what she made it look like. So, I want to tell you what it feels like. Because this house is ecological and social not just because of the thickness of its insulation and the ordering of its rooms, but because of the lives it enables us to lead. One and a half years after moving in, we see:

Our house connects us with ourselves, each other, and all elements of nature. These connections help us, each of us, to survive. They do so when we breakfast under our covered patio, breathe in the fresh air, and become centred and ready to start our days.

When Caro, my partner, stands by the window watching the birds, learning their names, their calls and their manners. When Daniel, our housemate, disappears out the door to meditate in the deep woods at the back of the garden. When I am bound to my bed in chronic illness and still get to see life happening in our corridors and outside our windows, as my housemates go about their daily work and children play chase in the garden. When another of us says, had they continued living by themselves, they would have ended up sinking into a depression.

When our friends join us during their 9-to-5 to co-work on the patio with its electric sockets. When one of them realises that she does not need even need such a patio and invites her friends round to her own place to co-work. – That, too, is an important effect of this house. Importantly, this house enables the lives of its inhabitants to entwine without those twines rubbing against each other, creating friction, and fraying.

We get to feel each other's presence, can find each other to share exciting news or gnawing worries the moment they occur, and almost never have to use our keys to open the front doors, because there is always someone around.

But our two families can also close a door to each other when we need to be by ourselves. And we have been in that situation. The design of the house has meant that we didn't have to move apart. We could live through this period and enjoy the blossoms of re-connection when we came out the other side.

We named our house The Seed. Even if we can identify a seed and know what tree it will grow into, we do not know exactly what form it will take. Likewise, the present and future of our house feels organic and unpredictable. So far, it is a playground. A bird habitat. A meditation space.

Forever in a process of becoming, I look forward to seeing who and how it will continue to be shaped.

– Karoline, January 2025 (client)

Relaxing with tea

LESSONS LEARNED

‘Today I learnt that no part of the old house - except the asbestos and timber - has left the site. Brick walls, concrete floors and roofs are all still here.

Now the builders are trying to reuse what they can:

Photos 1&2: 20 cm of crushed and sieved material for drainage underneath the house.

Photo 3: Bricks cleaned by hand to fill the top of the gabion baskets that will be visible. (Crushed and sieved rubble to fill the gaps).

Photo 4: Crushed rubble to fill the webbing for soil protection.

…Use number 5? #brownfieldgarden! I came across @grassroofco just yesterday. They create gardens using rubble: Creating a nutrient-poor environment for meadow plants mimicking dry chalk downland. 600 species of invertebrates have been found to use their garden! What’s more, three times more species use the rubble habitat than other habitats within the garden.

I therefore intend to create a rubble bed to embed and make experience-able the history of the site in the garden; to create valuable habitat; and to showcase the opportunities that this “waste” so common in my urban setting presents.

My mind is so excited at the transformation of what I had once seen as “waste” into a valuable resource.’

Karoline, October 2022 (client) From client instagram: @theseed_forestgarden




LESSONS LEARNED

Winter sunset with a frozen pond – cosy inside

THE SEED, CO-HOUSING