Why be complicated?

A simple but effective 'big roof' that can house endlessly flexible options makes an affordable work and storage space for a summer camp charity

Words: Eleanor Young Photographs: David Butler

PICTURE CREDIT EDGE

The rich, peaty earth stretches out. In the distance Ely and its cathedral perch on a rise while in the near distance black barns give a scale to the fens interrupted by occasional dykes, ditches and causeways. We are looking for trees, rare in this landscape, which begs the question of why the charity Forest School Camps (FSC) is based here.

The answer lies in its history. The charity came into being as a school but when it lost its home during the second world war it dropped the school element, keeping the tradition of two-week camps with an emphasis on self-sufficiency and independence for children. Each year it takes around 1200 children away to empty fields to pitch tents, build fires, cook for the camp in their clans and return home muddy and exhausted but happy.

At the end of the summer camps – from Cornwall, Yorkshire or the Hebrides – the kit is returned. Heavy Ministry of Defence-issue tents, some with the date 1945 sewn into them, need drying, mending and storing ready for service another year. Damp, smelly waterproofs and sleeping bags lent to those children who need them must be sorted into sizes and the huge camp kitchen pans sterilised for next year. In the 1970s FSC found a cheap pig farm as a store and here the process took on mythical status as the FSC staff (as the volunteers are called) spent weekends in

Left The Big Roof creates some enclosure of a space for work and gathering.

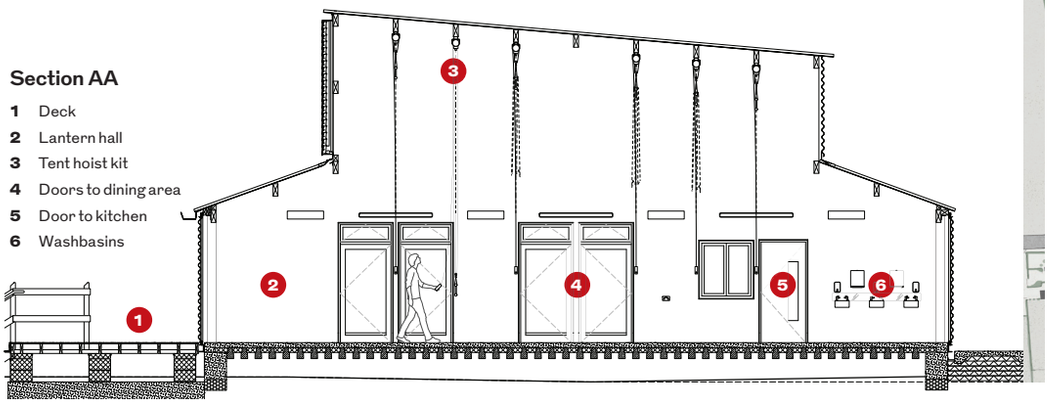
Below The building's gable faces the road. Fibreglass rooflights and sliding doors enliven black cladding.

Hut 42 or nearby, rodent-proofing metal office cabinets full of kit, reconditioning saucepans, and gathering in a circle to plan and share. They planted tens of native saplings and hoisted the canvases to air on unreliable timbers, the buildings twisting and deforming as they slowly sank into the luscious peat.

The structures had been condemned by the time FSC called in architects. A feasibility study by Dinah Borat of ZCD Architects showed the possibilities for replacement. Invisible Studio (which was invited to participate) and Mole Architects (based nearby) won the four-month selection process. Their idea was for a simple single volume with a re-used steel structure that would work as a big roof. It would allow FSC to work towards creating insulated, heated, spaces inside when funds became available, or left as a barn. There were just two flourishes: an open breezeway to connect the spaces and a lantern hall where the roof rose with vents to air the damp tents and kit. These elements, and the indoor-outdoor nature of the project, speak to the interest in Australian architect Glenn Murcutt that Piers Taylor of Invisible

Section AA

1 Deck
2 Lantern hall
3 Tent hoist kit
4 Doors to dining area
5 Door to kitchen
6 Washbasins



This image The lantern hall works as a social space based on shared work.

Left A simple press of the button now hoists tents in the air to dry.

Right The lantern hall and its louvres pop out of the big roof.

Left The building sits down the side of the site, a deliberate decision to allow a flow through to the nascent woods and camp clearings beyond.

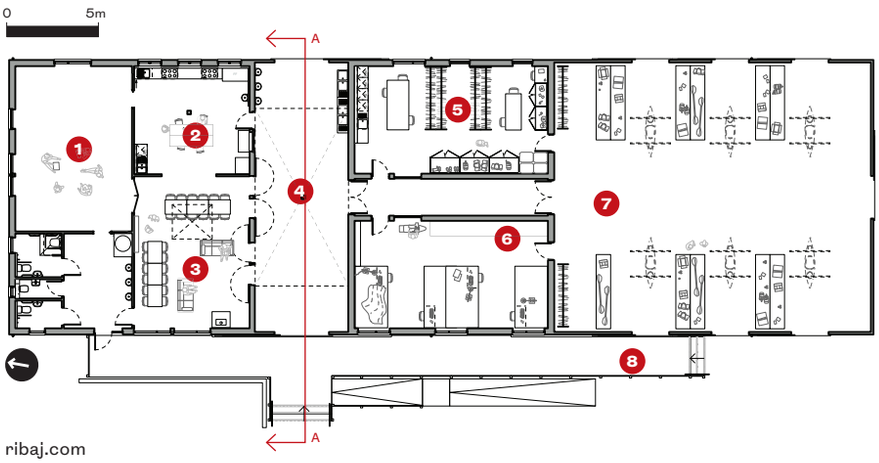
Credits
Client
Forest School Camps
Architect
Mole Architects and Invisible Studio
Structural engineer
Built Engineers
M&E engineer
ALH Design
Contractor Millcam
QS Sherriff Tiplady

Suppliers
Sliding door gear
Henderson
Cladding
Eternit Profile 6
Louvres Colt
GRP rooflights
Brett Martin

Studio and Meredith Bowles of Mole Architects share, and the pragmatic rural homes they have both built for themselves.

But the architects – including project architect Alice Hamlin of Mole who lives in Ely – are only a tiny part of the group that has brought this building into being. Twm Ford, one of the FSC volunteers on the stores committee, came on his first camp as a boy. Sophie Fraser Hafter, another committee member (and a Part 2 architectural designer at BDP), came before she was born with her pregnant mother Caroline Fraser – the volunteer and retired landscape architect who was the project lead. All have been camping and volunteering for years. That is the way. And so deep loyalties are built up, along with a sense of the mission of FSC. This led to divided feelings about the capital project, which inevitably plays only a supporting role to the camps themselves. With the decision being made by consensus, that was a significant force in the project. The group started by setting a budget a of £600,000, which the architects knew was almost impossible. 'There were big ideas but not much money at all,'

Ground floor plan
1 Training
2 Kitchen
3 Eating
4 Lantern hall
5 Kit room
6 Repairs room
7 Storage
8 Deck



IN NUMBERS

£1.21m
total contract cost

£1,611
cost per m²

745m²
GIFA

226.8
kgCO₂e/m²
RICS modules A1 - A5 (building fabric, excluding timber sequestration)

ENERGY DEMAND

The Big Roof includes areas that are insulated and heated, but these will only be in use at very limited times of year, as the site is actively used only at monthly volunteer weekends. As such it is classed as a building with low energy demand and so is exempt from complying with Part L. Due to the infrequent use, simple systems that are easily maintained and have lower upfront carbon were prioritised over efficiency, with a good level of fabric performance to improve comfort and reduce overall demand.

Heated areas are grouped together and insulated with approximately 30% improvement over minimum elemental requirements. Heating is supplied by electric panel heaters and instantaneous water heaters, supplemented with a woodburning stove in the main social space. The charity has already installed solar panels on its land and is looking to introduce more in the future. Materials were kept as low carbon as possible, with the timber structure insulated with blown cellulose and wood fibre.

The intermittent use and unusual patterns (monthly energy use includes charging electric cars for volunteers) makes it almost impossible to benchmark against typical buildings, or to understand the heating demand of the building.

says Taylor. 'You have to just start the conversation,' pointed out Bowles, with Fraser adding: 'It was enough money for the structure and plumbing.'

The £1.2m building took extra fundraising but also lost some its breezeway – and the steel frame. 'Once you adapt a steel frame it becomes expensive and FSC become more aware of the carbon impact of steel,' explains Taylor. Bowles also points to the complexities of the programme: sourcing steel to reuse with a volume based on that, while also having to fix the envelope at planning. Other solutions were found for the steel frame: a lower carbon alternative in timber. Working out the options for a 15m span as a timber truss frame took some investigation. 'It was more work to get something cheaper,' says Bowles. 'It was hard to find someone interested in doing simple and inexpensive.' Engineer Steve Atkinson of Built Engineers led the way, getting the concept design to fabricators and undertaking calculations to make use of cheap timber in standard dimensions.

The open trusses give life to the uninsulated storeroom where kayaks are stashed above shelves of tents and plastic boxes of kit. Fibreglass rooflights and sliding doors bring in light and are opened to load and unload straight from the van – the concrete beam and block floor on a concrete ringbeam set above the ground to reduce lifting and lowering. In the repairs room giant sewing machines sit regally, waiting to be clothed with their expansive gowns of tents. The kitchen is designed to cater for big volunteer weekends.

Taylor describes the building as 'ordinary'. Its corrugated black fibre cement cladding is unremarkable in the distance but the sliding fibreglass doors, generous gutters and – most of all – the rising lantern hall demand a second look. This inflection adds character to what could have been a basic storage building. It is also a brilliant vented drying hall for tents which are raised on the sort of hoists that are more often seen lifting stage sets for theatres. Doors roll open on each side and louvres channel the prevailing wind. Taylor talks of it as the heart for The Big Roof, centring social interaction around activity – although on a cold winter day when I visited everyone was happy to move into the heated gathering space alongside.

Forest School Camps encourages learning by doing. This building shares that ethos – it is a storage building where people do. And its architecture unfussily makes that a whole lot easier. ●

Above Boxes of hastily packed camp kit are loaded in here to be unpacked.

Below left Ancient industrial-scale sewing machines make short work of tent patching.

Below right The Big Roof is backdrop to far more activity than it is intended to house.