

CORK HOUSE



Award-winning Cork House fuses ancient construction methods with cutting edge design to create a sustainable living solution whose whole-life carbon is 85% less than a typical comparable new-build house.

Located within the grounds of a Grade II listed Mill House in Eton, Berkshire, Cork House is a collaborative design project from Matthew Barnett Howland, Dido Milne and Oliver Wilton. The monolithic walls and corbelled roofs are built almost entirely from solid load-bearing cork. Designed as a response to modern architecture's impact on biodiversity and climate change, the house not only resembles beehives in its design but is similarly constructed creating solid walls and roofs using a single bio-renewable material.

Designed, tested and developed in partnership with The Bartlett School of Architecture UCL, Cork House is built almost entirely from sustainably sourced cork blocks and supported by timber components, without the use of cement, glue, plastic insulation, plaster or render. As well as blending seamlessly into its surroundings, the house is designed so it can be easily dismantled, reused or recycled.

Our bespoke Conservation Plateau Rooflights provided a juxtaposition to the dark cork walls creating a stunning light and dark effect. However, they also performed another unique, structural function in the design of Cork House.

Built using a dry jointed system with nothing holding it in place other than its self-weight, the design needed a structural paperweight to hold the cork blocks together. This is where the rooflights provided an innovative dual solution.

Typically, the baseplate of a rooflight slots over a timber kerb on the roof, however in this instance, the baseplate slotted over the top cork block.

Not only does this create a weathertight seal for the roof, but acts as a weight for the cork blocks below. Additionally, the baseplate of the rooflight was also critical to the design due to the thickness of the walls. The architect's brief called for glazing over the internal hole only, which meant the skirt also became a crucial weathering detail.

The rooflights also performed a more conventional function. Sitting at the top of the pyramid structures, they create a stacked ventilation system. The motorised opening option fits the bill perfectly to provide ventilation and regulate heat in the building.

One of the challenges faced with using cork blocks is how they absorb light as well as sound. By using regularly placed rooflights the internal space is flooded with light from above bouncing off the floorboards and reflecting back into the room. The toplight source throws the three-dimensional shape into quite high relief, creating a strong light and dark rhythm, with a series of light and dark steps. Another feature that adds to the individuality of the building.

With form, function and footprint all equally considered and respected, it is no surprise that Cork House was awarded the Stephen Lawrence Prize in 2019 and shortlisted for the RIBA Stirling Prize amongst the plethora of additional awards. The 'whole life' approach to sustainability means that the house was carbon-negative at completion and will continue to have extremely low whole life carbon, less than 15% of a typical comparable new-build house.

The result is a beautiful, interesting, and individual building, which nestles sustainably into its surroundings on the banks of the River Thames. The awards which have been bestowed on this project are testament to the talent and creativity of the architects involved.



CORK HOUSE

Architect:

[Matthew Barnett Howland](#)
with Dido Milne and Oliver Wilton

Contractor:

[Matthew Barnett Howland](#)
(assisted by M&P London Contractors Ltd)

Awards:

RIBA South Award 2019
RIBA South Sustainability Award 2019
Sponsored by Michelmersh
RIBA National Award 2019
Stephen Lawrence Prize 2019
RIBA President's Award for Research 2019
RIBA House of the Year 2019 Longlist
RIBA Stirling Prize 2019 (Shortlisted)
Dezeen Award 2019, in the rural house category (Longlisted)
The Manser Medal
AJ House of the Year 2019
European Union Prize for Contemporary Architecture
Mies van der Rohe Award 2022 -Nominee
American Institute of Architects Region Design Awards 2020
Honor Award for Architecture + Sustainable Future Award
American Institute of Architects Design Awards 2020
Sustainability (small project) + Professional (small project)
Architecture Masterprize 2020
Best of Best in Green Architecture
The Woods Awards 2019 Gold Award
Structural Timber Awards 2020
Private Housing Project of the Year
Sunday Times British Homes Awards 2019
Small House of the Year Shortlist
Offsite Awards 2020 'Best Use of Timber Technology' Finalist

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