



In partnership with



# EMILY-ROSE GARNETT

## The Art Works



### PROJECT FACTS

<b>Residential</b> Building Use	<b>Oxford</b> Location	<b>90.8m<sup>2</sup></b> TFA
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### PASSIVHAUS STRATEGY

To realise the design vision the building required a high form factor for terraces. To compensate for this the building fabric was detailed to ensure lower than required U-values.

Due to the north-south orientation the south facing windows were maximised for solar gains, with the aid of an atrium for daylighting. Brise soleil and overhangs were used to reduce overheating, blocking high altitude summer sun. Overheating was further reduced by summer purge ventilation, summer bypass on the MVHR units and using glazing with a lower g-value.

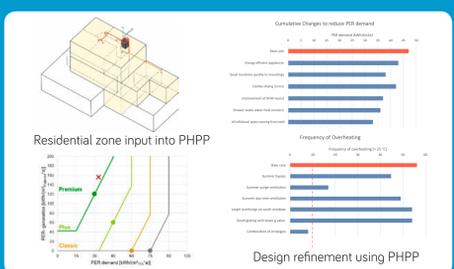
PVs and a ground source heat pump (sized to provide 100% DHW and space heating requirements) were included to achieve PH Plus. It was calculated that through the use of energy efficient appliances, refinement of the DHW system, shower waste water heat recovery and the provision of a low velocity wind turbine PH Premium could be achieved.

### DESIGN PHILOSOPHY

The Art Works provides a sustainable hub for the creative community on Cowley Road, Oxford. The building is intended to be run by the community, for the community, enhancing social cohesion. To reflect the ephemeral nature of the community art on Cowley Road a frame is used to provide a structure that can be adapted by the community to showcase different art and act as a stage set for events, like the famous Cowley Road Carnival. The building houses coliving and studio spaces for three artists in residence on the upper floors with an open and public ground floor for exhibitions, events and classes. The project seeks to achieve PH Premium, enhance biodiversity through roof terraces and landscaping, and apply circular economy principles, with furniture and appliances being procured using products as a service business models.

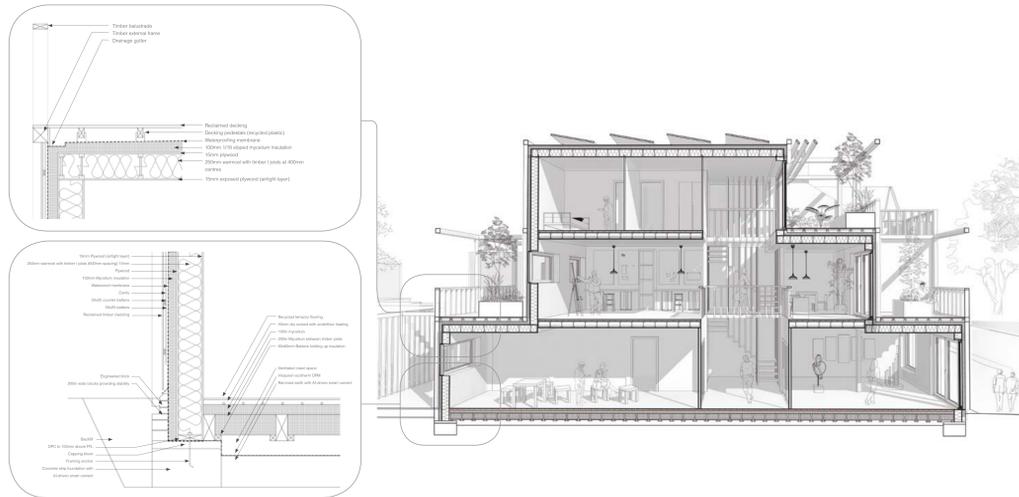
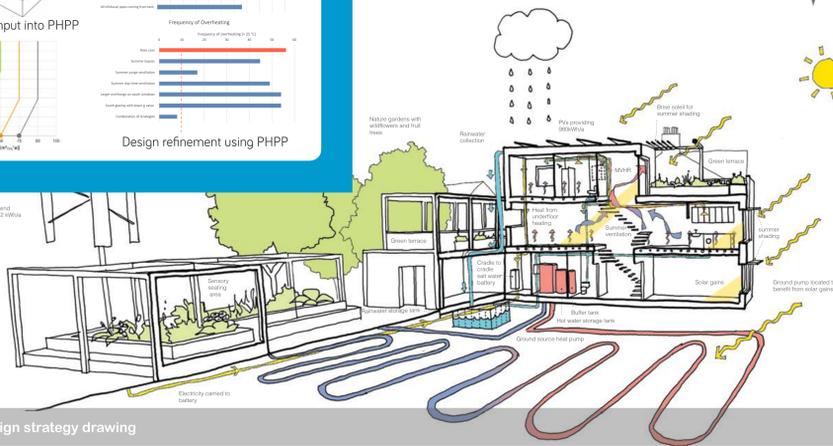
### PREDICTED PERFORMANCE

Walls 0.097	<b>14 w/m<sup>2</sup></b> Heating Load	<b>3.6</b> Form Factor
Floor 0.097		
Roof 0.086		
Windows 0.062	U-Values	



### MATERIALS

The building was designed according to circular economy principles, using low impact recycled/reused materials and designed for disassembly using no irreversible wet fixings. A timber I-beam structure is used with plywood sheathing, Warmcel insulation and external Mycelium insulation. Concrete use is minimised but where required AI smart cement is specified, which is made from local materials and significantly reduces embodied energy. Recycled plastic services are also used.



### Acknowledgements

Sustainable Architecture: Evaluation and Design  
Hossein Sadeghi Movahed

UK PASSIVHAUS STUDENT COMPETITION

