



GREENTRACE ARCHITECT AND M SUSTAINABILITY



Retrofit Carbonlite certified home - 'The Stables'

Design: **GreenTrace Architect**
Build: **Tuai Lovejoy**
Consultancy: **M Sustainability**
Location: **Bristol**
Completed: **2024**

Project brief

This derelict stable block had previously been refused planning permission for conversion into a dwelling but, with a carefully considered and well-designed application, overcame the previous refusals.

The planning application required some detailed analysis of the effects of a conversion on the amenity of the neighbours. This helped to demonstrate that the benefits of a new home outweighed the concerns that previously led to a refusal.

The new design complements the street scene and incorporates an internal buffer zone for defensible space. An atrium brings light from above to the main living space at ground floor level. The interface between old and new is accentuated via a limited palette of contemporary stained timber against the old imperial brick.

The strategy adopted was to maintain as much of the existing building as possible to reduce the embodied carbon and waste on site. An internal insulation layer was then built out using natural materials.

This transformation of an existing derelict building into a modern home proves it can be worthwhile to retrofit to a high standard and reuse existing structures. When materials and spaces are converted to a high standard this can preserve heritage buildings, protect green spaces and provide a solution to building meaningful homes.

Sustainability features

- Low energy and highly efficient building envelope
- Many different configurations were considered to create the desired balance between design and sustainability
- Carefully designed to a thermal comfort standard – continuous insulation, airtightness, comprehensive ventilation and a low temperature heating system (40 degrees) provided by an air source heat pump - achieving a COP of 4.44
- Meets AECB Carbonlite Standard for retrofit
- Meets RIBA 2030 Embodied Carbon Standard - many materials reused in situ and natural wood fibre timber and recycled cellulose used where new materials required (the exception being the concrete floor which provides thermal mass)
- Post occupancy evaluation shows that the building performs – it is warm in winter and cool in the summer due to overheating mitigation - with a steady temperature of 20 degrees and 55% humidity levels

Find out more: www.greentracearchitect.co.uk/post/sustainable-retrofit-project-receives-planning-consent

