

## Vacuum Insulation Panels in Construction

**Scheme:** Victorian Townhouse Retrofit  
**Architect:** Arboreal Architecture  
**Completed:** March 2014  
**Location:** Clapham, London



When faced with the challenge of retro-fitting a 170 year old grade II listed Victorian townhouse Arboreal Architecture had a particular focus on how to upgrade the thermal performance of the existing fabric whilst respecting the historic significance of the property.

Due to the property's listing all insulation upgrades had to be carried out internally. When looking at the best approach for choosing insulation for the project Harry Paticas of Arboreal created bespoke solutions for each localised issue. This resulted in 9 different types of insulation being used throughout the property.

When it came to upgrading the basement floor the requirement was for a high performing insulation which could achieve this within minimal build-up. The technology chosen was to use **Kevothermal Vacuum Insulation Panels (VIPs)**.

With an aged thermal conductivity value of 0.007W/mK VIPs are the best form of commercially available insulation on the market. By using 25mm thick VIPs as opposed to a conventional PUR insulation (75mm - 100mm thickness) it

allowed the existing concrete slab to be left in place, thus saving significant man-hours and cost.

By the nature of vacuum insulation panels it is important the panels are protected to prevent puncture otherwise a significant amount of their performance is lost.

To allow for this a protective rubber crumb matting (3mm thick) was laid below and above the VIPs to offer protection. This allowed site traffic unrestricted access over the panels and was a suitable protection to the 65mm screed which was overlaid.

The finished property is the first listed building in England to meet the AECB Silver Performance Standard.

For further information on this project contact -  
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