UK PASSIVHAUS AWARDS 2014

STANDINGS COURT

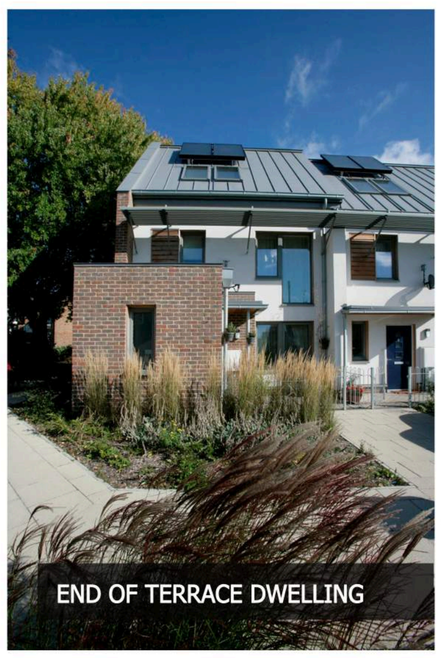
mh Architects

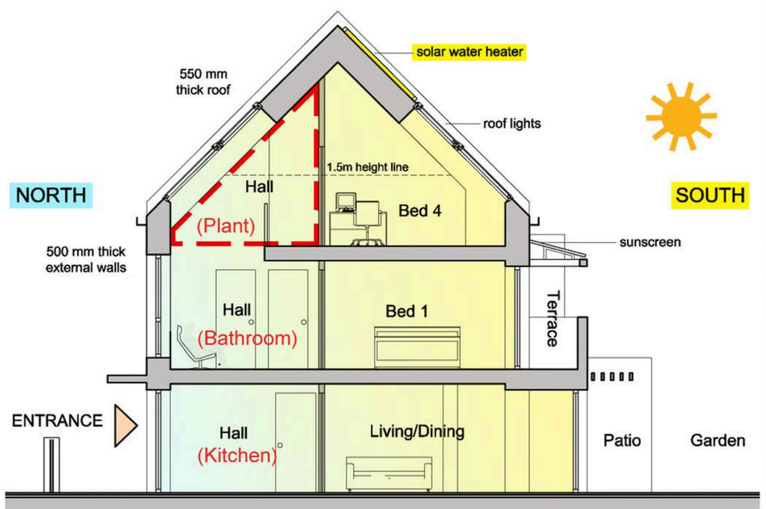
TERRACE B WITH SIX PASSIVE HOUSES

We approached this disjointed, yet prominent site as an opportunity to 'stitch' the site back into its context with well positioned blocks and attention to key movement routes. The bulk of the site is aligned roughly on a south west axis lending this area to the Passivhaus homes. Using the existing TPO trees, orientation and pedestrian routes we established a loose building grid responding to the existing Victorian homes across New Street and allowed the formation of communal 'green rooms' around mature trees. Our brief established Saxon Weald's desire for a flagship low energy scheme with a mix of Passivhaus and Code 5 homes.

Using 3D modelling to analyse constraints and design solutions, a simplified form drawing from the nearby Victorian terraces was established as the preference for the Passivhauses. We were conscious of the need to simplify detailing but also of the importance of the relationship with the street and creating a legible rhythm to the elevations. We bookended the terraces by putting the four beds at the end, raising their roofs and introducing protruding bays. Aesthetically, the bricks draw from the context while render is used to reflect the cutting edge nature of the development. Key innovations included the integration of terraces over rooms and projections and their associated detailing challenges, also as a 100% affordable rented site, this scheme also offers useful post occupancy feedback and data for the Housing Association sector.

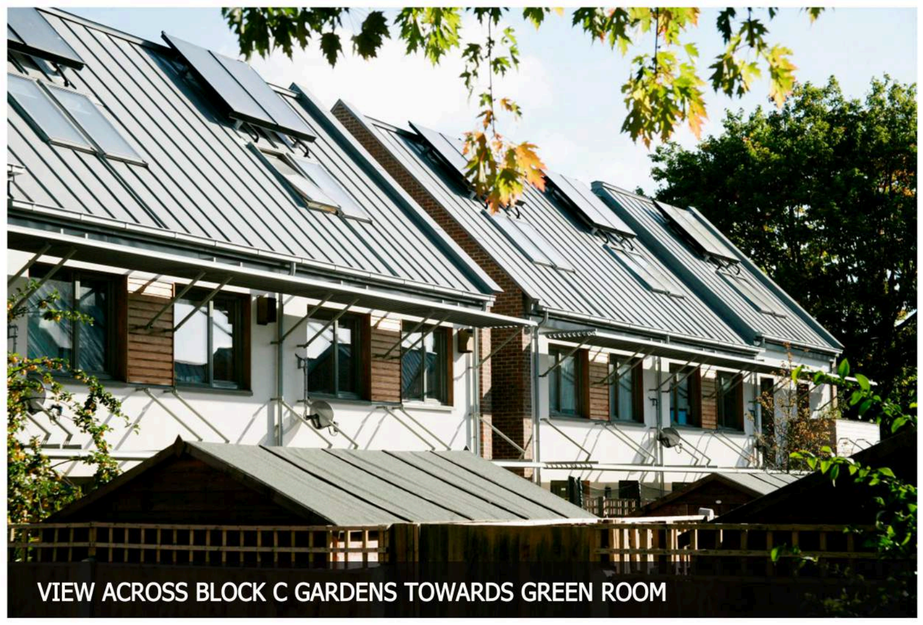
As the design progressed, glazing sizes were reduced and the bay windows were replaced with standard windows. Window positions and sizes were carefully balanced to ensure that good levels of natural surveillance to key outside spaces could be provided, while avoiding excessive glazing areas on north, east and west elevations. Solar thermal panels on the Passivhaus homes provide a good proportion of their domestic hot water, further reducing the homes energy requirements.

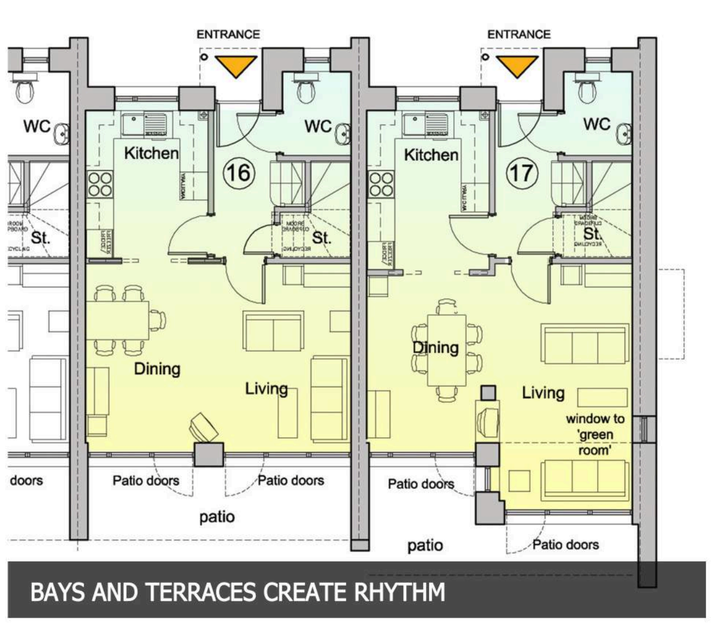

END OF TERRACE DWELLING



EARLY SECTION THROUGH 4 BED HOMES

TERRACE RHYTHM


VIEW ACROSS BLOCK C GARDENS TOWARDS GREEN ROOM

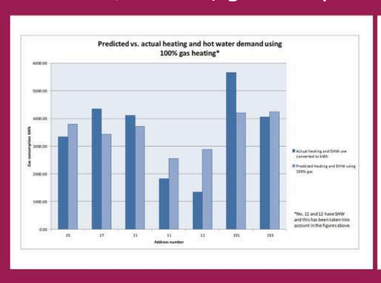


BAYS AND TERRACES CREATE RHYTHM

Project Overview
Name: Standings Court
Location: Horsham, West Sussex
Building Type: 38 dwellings for affordable rent, 12 Passivhaus'
Construction type: SIPS
Completed in: April 2012
Occupancy status: From April 2012
Construction Cost (£/sqm): Approx £1600 / m2

Sustainability features
Primary Energy Demand: **75 - 111 kWh/m2a**
Heating and Cooling Load: Heating **10 W/m2**, cooling **3W/m2**
Air pressure result: **0.6 h-1**
Ventilation strategy: MVHR Zehnder
Heating strategy: Radiators
Shading strategy: Brise Soleil
U values: External Wall 0.11, Roof 0.085, Floor 0.1, Windows 0.84
Other features: Solar Hot Water panels provide some hot water heating, key mature trees integrated into layout

Measured Performance Average Values
Headline energy results: 67% reduction on modelled gas use
Analysis of actual energy use:
14.4 kwh/m2 TFA, gas for space heating and hot water



Graphs showing monitored data, Passivhaus homes are units 11 and 12. Source SRE Ltd

Lessons learnt: Terraces over rooms and steps in roofs are inherently tricky to minimise thermal bridging. Importance of establishing design team at beginning. Striking balance between easiest Passivhaus solution and quality of space and built form for the occupant
Air pressure result: 0.6 ach @50 pascals
TFA: 101 - 111 sqm

Quote:
'The temperature in the house seems to stay very stable which is great....Also with the windows being triple glazed we dont get any noise from the neighbours or the nearby trainline'
Kerry Menzies, Passivhaus Resident

'Standings Court provides excellent homes for local people and, although the buildings are unashamedly modern, they complement the Victorian architecture of houses in New Street."
David Standfast, Chief Executive of Saxon Weald

EARLY DESIGN DIAGRAMS

TEAM CREDITS

Client: Saxon Weald HA
Architect: mh Architects
Consultants: WARM
Brooks Devlin, Derek Durant Associates
Contractor: Geoffrey Osborne
Certifier: Co-Create
Graphs by SRE Ltd
Photography by Kevin Purdy
Other: Monitoring & Analysis by SRE Ltd
Landscape Architects - Terra Firma
Building services - GEMMA BDS

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