

## CAMPION HOMES LTD

### Weinerberger Porotherm Block 4 2 x 2 Bedroom Amenity Cottages



“Campion Homes are proud to be the Framework contractor for the Housing Innovation Showcase project and are also acting as preferred partners for 3 of the house systems being developed as part of the showcase project.

One of the systems being developed by Campion is the Porotherm system, which is being used on one of the semi detached blocks.

Porotherm is a precision engineered, clay block structural walling system. It offers a modern construction method with the reassuringly traditional values of clay. The system has been extensively used in mainland Europe for more than 30 years – both in the residential and commercial sectors. Wienerberger launched this tried and tested system to the UK market, unveiling its benefits for the first time, at Ecobuild in March 2009.

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The system provides a highly efficient alternative to other building materials such as timber, concrete or light steel frames and can significantly reduce construction times. It is a virtually dry, efficient, strong, safe and environmentally-friendly method with proven performance characteristics, while also offering commercial benefits through increased labour productivity. Porotherm is ideal for both monolithic construction, with external render, for internal walls or as the inner leaf of a double skin cavity wall when finished with an external facing brick. Both are applicable to the traditional housing, commercial, public sector and retail building sectors. The construction method used by Campion to produce their system utilized the mechanical fixing of Insulation both Internally and Externally contributing to a wall value of 0.15.

A key element of the development will be a comprehensive programme of monitoring the performance of the different systems and Campion Homes and Porotherm are encouraged that the findings of all systems will to allow future construction methods and assumptions to be based not only design assumptions but actual working lifestyle comparisons. We have extensively used local tradesmen to construct this "first trial" modern method of construction and the learning benefits can only enhance the alternative construction methods available." The technical advantages of the Porotherm system are:

- Full construction system – from initial laying methodology, through application and supply of specialist thin joint mortar, quality checking, through to timely distribution and supply of materials.
- Up to five times faster than many other walling systems/construction methods thereby compressing duration of entire build programme.
- Offers a genuine 'thin joint' – Porotherm joints are 1mm as compared to aircrete thin joint 2-3mm or traditional masonry 10mm.
- Virtually water-free – uses 95% less water on site – mortar can be mixed on site in a bucket rather than a mixer (decreasing noise and requirement for site access/space).
- Structurally sound construction independent of additional support up to five storeys, as validated by CERAM.
- Eco-friendly – uses less clay than block due to innovative design; contains minimum 30% waste content in its manufacture; and requires a relatively low firing temperature of around 900°C.
- Up to 50% lighter than concrete block due to perforations/design, with a smooth-edge adding to safety standards on site.
- Excellent thermal performance due to precision-engineered air pockets offering lambda values of as little of 0.12 w/mk and a thermal mass minimum of 96kg/m<sup>2</sup>.
- Highest fire-retardant rating – Class A1 0 does not burn or give off toxic smoke.
- Post-construction, the virtually dry fix Porotherm wall doesn't crack or shrink and is dimensionally stable. This significantly reduces the cost of snagging.

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DESIGN OUTPUTS	PLOT 13	PLOT 14
CONSTRUCTION	Clay Block	Clay Block
GROSS INDICATIVE FLOOR AREA M <sup>2</sup>	78.80	78.80
AVERAGE SUPERSTRUCTURE COSTS PER UNIT (INCLUDING RENEWABLES / EXCLUDING PRELIMS)	£72,091	£64,525
AVERAGE M <sup>2</sup> SUPERSTRUCTURE COSTS PER UNIT (SEE NOTE 1)	£915	£819
CONSTRUCTION PERIOD (SUPERSTRUCTURE)	NUMBER OF WORKING DAYS OFF / PRE SITE : 0	
	NUMBER OF WORKING DAYS ON SITE : 71	



[www.campionhomes.com](http://www.campionhomes.com)



[www.porothermuk.co.uk](http://www.porothermuk.co.uk)

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DESIGN OUTPUTS	PLOT 13	PLOT 14
SAP RATING (BASED ON 2009 SAP)	90B	88B
CO2 RATING (BASED ON 2009 SAP)	93A	89B
<b>U VALUES</b>		
WINDOWS	0.8	0.8
DOORS	1.4	1.4
EXTERNAL WALLS	0.15	0.15
FLOORS	0.15	0.15
ROOF	0.12	0.12
RENEWABLES	Photovoltaic Panels	Solar Water Heating
ELECTRICITY GENERATED	£103.65	N/A
AIR PERMEABILITY (at Design Stage)	2.5	2.5
AIR PERMEABILITY (Actual)	2.32	2.38
VENTILATION SYSTEM	Mechanical Ventilation Heat Recovery (91%)	
BOILER EFFICIENCY	88.8%	88.8%
<b>ENERGY USE</b>		
SPACE HEATING (KWH/YEAR)	1693.99	1826.01
WATER HEATING (KWH/YEAR)	3049.46	1051.20
LIGHTING (KWH/YEAR)	354.44	354.55
ANCILLARY (KWH/YEAR)	376.89	451.89
TOTAL (KWH/YEAR)	5474.38	3683.65
<b>ENERGY COST</b>		
SPACE HEATING (£/YEAR)	£52.50	£56.61
WATER HEATING (£/YEAR)	£94.53	£32.59
LIGHTING (£/YEAR)	£16.45	£16.45
ANCILLARY (£/YEAR)	£123.49	£126.97
TOTAL ENERGY COST (£/YEAR) EXCLUDING SAVING FROM ENERGY GENERATED	£286.97	£232.62

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