

009521 – Barugh Green Road – SAP Calculations Specification under Part L 2021.

Following the Design Stage SAP Calculations undertaken on behalf of Avant West Yorkshire for the Part L 2021 development of Barugh Green Road, below details the specification information as used within the SAP10 calculations.

Element	U-value	Construction
External Wall	0.24w/m ² k	103mm Brickwork 100mm Knauf Supafil 34 (0.034) 100mm Lightweight Aircrete Blockwork (0.11) 12.5mm Plasterboard on Dabs
Garage Wall (Solid)	0.24w/m ² k plus shelter factor	12.5mm Plasterboard on Dabs 100mm Lightweight Aircrete Blockwork (0.11) 63mm Omnifit Slab 35 (0.035) between timber studs (38mm @ 600 centres) 30mm Recticel PIR Eurothane GP Insulation (0.022) 15mm Plasterboard
Gable Panel Wall	0.23w/m ² k	U-VALUE TO BE PROVIDED BY AVANT/NY TIMBER
Party Wall	0.00w/m ² k	Lightweight aggregate blocks 1350 to 1600 kg/m ³ with 100mm min cavity Knauf SupaFil party wall blown glass mineral wool Finish Gypsum based board with nominal 8kg/m ² on dabs E-WM-28
Party Wall – Gable Party Panel	0.00w/m ² k	Fully Filled with Effective Sealing Twin Timber Frame
Ground Floor – Beam and Block - EPS	0.10-0.11w/m ² k	75mm Screed 225mm Plustherm Stylite Grey EPS (0.030) 155mm Beam and Block Floor with 100mm Lightweight Aircrete Blockwork (0.11)

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Party Floor between Maisonettes	0.00w/m ² k	Precast concrete plank floor (screed laid on rubber) E-FC-4
Floor Above Garage	0.15w/m ² k plus shelter factor	22mm Chipboard 240mm Joists with 240mm Knauf Omnifit 34 (0.034) between timbers (38mm @ 450 centres) 15mm Plasterboard
Pitched Roof – Insulated Flat Ceiling	0.09w/m ² k	400mm Knauf Loft Roll 44 (0.044) above 100mm Knauf Loft Roll 44 (0.044) between timber joists (38mm @ 450 centres) 15mm Plasterboard
Pitched Roof – Insulated Slope (Panelised Cassette)	0.15w/m ² k	U-VALUE TO BE PROVIDED BY AVANT/NY TIMBER
Doors	1.30w/m ² k	Solid Doors uPVC Manufacturer's Declaration (default frame factor)
Half-Glazed Doors	1.30w/m ² k	Double Glazed Low-E Soft 0.05 uPVC Manufacturer's Declaration (default g-value and frame factor)
Windows	0.86w/m ² k	Triple Glazed Low-E Soft 0.05 uPVC BFRC, 0.38 g-value
Patio Doors	0.89w/m ² k	Triple Glazed Low-E Soft 0.05 uPVC BFRC, 0.35 g-value
Rooflight	1.30w/m ² k	Velux Double Glazed Low-E Soft 0.05 uPVC Manufacturer's Declaration (default g-value and frame factor)

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Main Heating	ASHP	<p>Ideal HP290 4.5kW (107964)</p> <ul style="list-style-type: none"> - Askham - B3 - Bramley - E2.1 - Eastbeck - Ferndale - HAT - Leyburn - Ripley - Ripley-Alt - Totlely <p>Ideal HP290 6kW (107972)</p> <ul style="list-style-type: none"> - Baildon - Salbury - Wentbridge <p>Ideal HP290 8kW (107980)</p> <ul style="list-style-type: none"> - Cookbury - D4 - Netherton - Thoresby
Heating Controls	-	<p>Time, temperature & zone controls</p> <p>Smart Meters</p> <p>Cylinder Stat</p> <p>Independent Time Control</p> <p>Cylinder in Heated Space</p>
Heating Emitter	-	Radiators
Hot Water Cylinder	-	<p>UKC – ESPPB015X</p> <p>Capacity – 150 litre</p> <p>Declared Heat loss – 1.22 kWh/day</p> <p>Heat Transfer Area – 2.08</p> <ul style="list-style-type: none"> - Askham - Bramley

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		<ul style="list-style-type: none"> - HAT - Tottle <p>UKC – New 180 litre cylinder (product code TBC) Capacity – 180 litre Declared Heat loss – 1.63 kWh/day Heat Transfer Area – 2.49</p> <ul style="list-style-type: none"> - B3 - Baildon - E2.1 - Eastbeck - Ferndale - Leyburn - Ripley - Ripley-Alt <p>UKC – ESPPB5022X Capacity – 225 litre Declared Heat loss – 1.99 kWh/day Heat Transfer Area – 2.97</p> <ul style="list-style-type: none"> - D4 - Netherton - Salbury - Wentbridge <p>UKC – ESHPP3300X Capacity – 300 litre Declared Heat loss – 2.26 kWh/day Heat Transfer Area – 2.97</p> <ul style="list-style-type: none"> - Cookbury - Thoresby
Showers	-	<p>All Shower (to all bathrooms/en-suites)</p> <ul style="list-style-type: none"> - From main heating system - 9 l/min
Waste Water Heat Recovery	-	<p>Recoup Pipe HEX System B (80148) installed to all Main Bathrooms in Each House Type, except:</p>

		Bungalows and Ground Floor Maisonette (Bramley) – Recoup Easyfit+ System B (80140)										
Ventilation	dMEV	Vent Axia Lo-Carbon NBRdMEV100C 500776										
Air pressure test	4.00	Design figure. Site wide air testing										
Lighting	100%	Internal Fixed Lighting Power = 8W Efficacy = 108lm/W										
Thermal Bridging	Bespoke	<p>Knauf Details used for full fill cavity wall using blockwork with a thermal conductivity of 0.11 & Knauf Supafil 34 at 100mm.</p> <p>Bespoke psi values used for E5, P1, E20, E21 provided by The FES Group</p> <p>Bespoke psi values used for E7 provided by Meadows + Ross</p> <p>Bespoke psi values used for Cassette Roof provided by Avant and NYT</p> <p>R1, R2, R3 provided by Velux</p>										
PV	-	<p><i>Please see PV Appendix for PV input at worse case orientation - East.</i></p> <p><i>PV increased in 0.10kWp increments to accommodate PV designs of 335w or 405w panels.</i></p> <p><i>Little to no overshadowing.</i></p> <p><i>Export capable meter.</i></p> <table border="1"> <thead> <tr> <th>Housetype</th> <th>kWp</th> </tr> </thead> <tbody> <tr> <td>Askham – SEMI</td> <td>0.67</td> </tr> <tr> <td>B3 – SEMI</td> <td>0.80</td> </tr> <tr> <td>Baildon – SEMI</td> <td>0.90</td> </tr> <tr> <td>Bramley – SEMI</td> <td>0.67</td> </tr> </tbody> </table>	Housetype	kWp	Askham – SEMI	0.67	B3 – SEMI	0.80	Baildon – SEMI	0.90	Bramley – SEMI	0.67
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		Cookbury – DET	1.30
		D4 – SEMI	0.90
		E2.1– SEMI	0.67
		Eastbeck – SEMI	0.67
		Ferndale – SEMI	0.90
		HAT – SEMI	0.67
		Leyburn – DET	1.10
		Netherton – DET	1.30
		Ripley – SEMI	0.90
		Ripley-Alt – SEMI	1.00
		Salbury – SEMI	1.10
		Totley – SEMI	0.67
		Thoresby – DET	1.40
		Wentbridge – DET	1.20
<p><i>Plots specific requirements may differ – A plot specific appendix for each development will be produced.</i></p>			

We can confirm that the above specification with the use of Knauf, NYT and Bespoke details used for a full fill brick and block cavity wall with blockwork with a thermal conductivity 0.11 does achieve compliance across the development of standard house types in SAP10 under Part L 2021

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