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ELEMENT	BUILD UP	U-Value
External Wall	100mm brick + 100mm cavity fully filled with Dritherm 32 ($k=0.032$) + 100mm aircrete 7N block ($k=0.11$) + 12.5mm plasterboard on dabs + 3mm plaster skim <i>Assumed stainless steel wall ties of double triangle type</i>	0.23
Wall to garage	100mm medium density block + 100mm cavity fully filled with Dritherm 32 ($k=0.032$) + 100mm aircrete 7N block ($k=0.11$) + 12.5mm plasterboard on dabs + 3mm plaster skim <i>Assumed stainless steel wall ties of double triangle type</i> <i>U-value inclusive of garage shelter factor</i>	0.21
Stud Walls to eaves	Insulation carried within slope of roof – <i>effective u-value calculated as per SAP conventions, slope u-value x 0.72</i>	0.12
Internal Partitions	Mix of dense blockwork with plasterboard on dabs and plasterboard on timber frame	
External Roof – Flat ceiling	250mm mineral wool ($k=0.044$) + 200mm mineral wool ($k=0.044$) between joists @ 600mm centres + 12.5mm plasterboard + 3mm plaster skim	0.10
External Roof – Sloping Ceiling	Tiling + battens + breather membrane + 50mm rafter cavity + 100mm PIR ($k=0.022$) between rafters @ 600mm centres + 50mm PIR ($k=0.022$) + 12.5mm plasterboard + 3mm plaster skim	0.16
External Roof – Flat Roof	Roofing membrane + 18mm plywood + 125mm PIR ($k=0.022$) + VCL + 18mm plywood + 100mm joists cavity + 12.5mm plasterboard + 3mm plaster skim	0.16
Ground Floor	100mm PIR ($k=0.022$) + 500 gauge membrane + 100mm reinforced concrete slab + 65mm screed	0.16
Floor over garage	12.5mm plasterboard + 50mm PIR ($k=0.022$) + 240mm joist cavity partially filled with 100mm mineral wool ($k=0.044$) + 22mm chipboard <i>U-value inclusive of garage shelter factor</i>	0.19
Solid Doors		1.40
Front door	Low E Double Glazed (assumed g-value = 0.63)	1.40
Bifold doors	Glazing as above	1.40
Windows	Glazing as above	1.40

Rooflights	Glazing as above	1.40
Thermal bridging	<p>Full fill Constructive Details to junctions E5 (ground floor), E6 (intermediate floor), E12 (gable – insulation at joists), E16 (corner) + E17 (corner – inverted)</p> <p>Accredited Construction Details to junctions E2 (lintel – no steel perforated base plate), E3 (sill), E4 (jamb), E10 (eaves – insulation at joists), E11 (eaves – insulation at rafters), E13 (gable – insulation at rafters) + E15 (flat roof – parapet) and default to remaining junctions</p> <p><i>Details of Constructive Details can be found here</i></p> <p><i>Details of Accredited Construction Details can be found here</i></p>	
Pressure Test	Design test score: 5.00	
Ventilation	Intermittent extract fans	
Lighting & tariff	100% LELs and standard rate electricity tariff	
Primary Heating	Air source heat pump – Daikin Altherma 3M EDLA06EV3 6KW with <i>efficiency of 170% currently applied</i>	
Heat Emitter	Underfloor to ground floor and radiators to first floor	
Heating Controls	Time and temperature zone control	
Secondary heating	None specified	
Water heating	From main system	
Water cylinder	<p>250 litre Telford Tempest Heat Pump Indirect cylinder with standing heat loss of 2.16 kWh/day</p> <p><i>This cylinder has been selected as it performs well in the SAP assessment. Its inclusion is not a recommendation and its suitability should be checked. Upgrades may be required to other areas of the spec if another model is selected so please check its suitability with the SAP assessor before purchase.</i></p>	
Renewable technologies	Air source heat pump – Daikin Altherma 3M EDLA06EV3 6KW	