



CARDIFF ROAD - READING



ELEMENT	DESIGN SAP2012/L1A 2013 SPECIFICATION
HEAT LOSS WALLS - HOUSES	
External	102mm Brick 100mm Knauf Supafil 34 100mm 0.11 W/m.K Aircrete Block 12.50mm Plasterboard on Dabs returning U-value of 0.24 W/m²K
HEAT LOSS WALLS - 3 STOREY HOUSES	
External	102mm Brick 100mm Knauf Supafil 34 100mm 0.19 W/m.K Aircrete Block 12.50mm Plasterboard on Dabs returning U-value of 0.26 W/m²K
HEAT LOSS WALLS - APARTMENT BLOCKS	
External - WT-E-A-01	102mm Brick 150mm Knauf Supafil 34 215mm Dense Concrete Block 12.50mm Plasterboard on Dabs returning U-value of 0.20 W/m²K
External - WT-E-A-03	102mm Brick 150mm Knauf Supafil 34 100mm Dense Concrete Block 12.50mm Plasterboard on Dabs returning U-value of 0.20 W/m²K
Common - WT-I-A-01	12.50mm Plasterboard on Dabs 100mm Medium Density Block 100mm Isover Round The House Roll 100mm Medium Density Block 12.50mm Plasterboard on Dabs returning U-value of 0.27 W/m²K
HEAT LOSS FLOORS - HOUSES	
Ground Floors	Nu-Span Insulated Pre-Cast Concrete Units returning U-value of 0.10-0.11 W/m²K depending on P/A Ratio
HEAT LOSS FLOORS - APARTMENTS	
Ground Floor - FT-01	Nu-Span Insulated Pre-Cast Concrete Units to Plots 49, 50, 51, 72, 73, 74, 75 returning U-value of 0.11-0.12 W/m²K depending on P/A Ratio
Ground Floor - FT-02	65mm Screed 235mm Alreflex TE Platinum 0.030 W/m.K Rigid Insulation 300mm RC Slab returning U-value of 0.13 W/m²K
Exposed Floor- FT-04	65mm Screed 200mm PCC Plank 100mm 0.022 W/m.K Rigid PIR Insulation Board 100mm MF Ceiling Void 15mm Plasterboard returning U-value of 0.19 W/m²K
HEAT LOSS ROOFS - HOUSES	
Cold Roofs	300mm 0.044 W/m.K Mineral Wool over Ceiling Joists 100mm 0.044 W/m.K Mineral Wool between Ceiling Joists returning U-Value of 0.11 W/m²K
Warm Roofs	125mm Isover Metac between rafters 70mm BG Thermaline Super under rafters returning U-Value of 0.16 W/m²K
Flat Roofs/Terraces	Avge 200mm 0.024 W/m.K Rigid PIR Insulation Board 12mm Ply Decking over 200mm Timber Joists returning U-Value of 0.12 W/m²K
Bay Tops	Pre-Fabricated GRP Bay Roof Canopies returning U-Value ≤ 0.30 W/m²K
HEAT LOSS ROOFS - APARTMENTS	
Flat Roofs/Terraces RT-01	Single Ply Membrane 150mm 0.024 W/m.K Rigid Insulation Board 22mm Plywood Sheathing 200mm RC Slab 15mm Plasterboard on 310mm MF Ceiling returning U-Value of 0.16 W/m²K
PARTY WALLS	
All Dwellings	Fully filled and edge sealed delivering U-value of zero
THERMAL BRIDGING ⁽¹⁾	
All Dwellings	Combination of LABC, APA, ACD, and Default SAP Appendix K Values
VENTILATION	
Houses	Intermittent System Extractor Fans
Apartments	Centalised System 3 Titon CME2 Plus HA
HEATING	
Boilers	Ideal Logic ESP 1 35 Combi boilers
Cylinders	None
Controls	
Apartments	Single Zone Heating
Houses	Full Time and Temperature Zone Control
Emitters	Radiators
Delayed Start Programmer/Thermostat	Yes
Weather Compansation	None
Secondary Heating	None
LIGHTING	
Low Energy	100% Low Energy Lighting to all dwellings
CONTROLLED FITTINGS	
Windows	UPVC Double Glazed with U-Value of 1.30 W/m²K with Low-E soft coating, BFRC certified with 'g' rating of 0.45
1/2 Glazed Doors	UPVC Double Glazed with U-Value of 1.5 W/m²K with Low-E soft coating 'g' rating of 0.45
Rooflights	UPVC Double Glazed with U-Value of 1.40 W/m²K with Low-E soft coating with 'g' rating of 0.45
Flat Entrance Doors	Solid Fire Rated Doorsets returning U-Value of not worse than 1.00 W/m²k.



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AIR TIGHTNESS	
All Dwellings	5.00m³/(hr.m²)@50pa to deliver 19% reduction in regulated emissions to 50% of dwellings as required under Planning Condition
RENEWABLES	
Solar PV/STH	PV to Apartment Block sufficient to off-set 5706KgCO₂/yr delivering 19% Regulated Emissions reductions to 50% of dwellings in accordance with Planning Condition 33

(1) In accordance with Thermal Bridge Schedules included with Plot Folders issued with Design SAP Calculations

ISSUE DATE	REVISION	COMMENTS
06/06/2019	Preliminary Draft	Based upon robust assumptions prior to construction drawing issue. SE to check compressive strength of aircrete blocks to apartment block, possible Medium Density block required to ground floor reverting to differing compressive strength aircrete to upper floors.
09/10/2019	Design Issue	Design Calculations completed from Hester Architects Preliminary Construction Drawings & Specifications & Bellway L1A2013 Construction Specification for Houses
14/05/2021	Rev A	Omit ; RC Slab to GroundBeams Add ; Nu-Span IPC Units Confirm ; revised KgCO ₂ /yr to be off-set via PV