

SPECIFICATION

GENERAL
All dimensions to be checked on site prior to commencing works or ordering materials. No dimensions to be scaled from the drawings, only written dimensions to be respected. Any discrepancies between drawings to be notified to the CA for clarification. The position of the existing underground services to be confirmed with relevant authorities prior to careful excavation. An agreed datum to be established prior to commencing work. All timber to be treated in accordance with BS EN 1995-1-1:2004+A2:2014. No high alumina cement to be used.

HEALTH & SAFETY
All services to be terminated at entry to building, capped and made safe prior to commencement of works. All redundant drainage to be cut and sealed. All fixtures and fittings to be removed and disposed of. All existing building materials, fittings and systems to be removed from site. All works carried out in accordance with Building (Scotland) Act 2003 and Regulations 2004 as amended and in accordance with all relevant guidance as noted within the 2015 Domestic Handbook. All dismantling and demolition works to be carried out in accordance with BS 6187:2011 and the Health and Safety at Work Act 1974.

FLOOR CONSTRUCTION - PROPOSED EXTENSION
To be taken as standard, refer to individual drawings for varying details. Suspended timber floor constructed from 225mm mm thick C24 TREATED SW timber joists sheathed internally with 22mm thick proprietary PS particle board with joints glued and screwed to Engineers design. Proprietary PIR insulation 170mm deep supported with mesh mechanically fixed to joists P/A 0.8. Ventilated soffit as described in detail sheets, soffit formed from suitable substructure bearing course, 50mm sand bedding with 500 gauge extruded low density polyethylene separating layer with 50mm thick C25 concrete over, insulated floor construction providing U Value of 0.15 W/m²K.

WALL CONSTRUCTION
To be taken as standard, refer to individual drawings for varying details. Cavity blockwork and timber kit rendered construction, with external leaf, outer leaf 102.5mm (1.13 conductivity) thick concrete blockwork, cavity 50mm, timber cavity closers to be fitted at head of cavity around perimeter of openings in external leaf, doors and windows, every 10m over length of wall and to corners of walls all wrapped in DPC, 150mm insulated timber kit with 12.5mm plasterboard inner. Brickwork leaf to match existing or equal and approved. Brickwork wall leaf to have mortar joints formed in accordance with the manufacturers recommendations. Timber kit filled with Kingspan or equal and approved, 2 layers (one between studs and one to outer face of timber kit over VFL) 60mm thick comprising CFC/HFC free rigid urethane insulation core with low emissivity composite foil facings on both sides. Fixed with wall ties to BS EN 845-1:2013, double drip type, stainless steel type. Wall construction with render to give U-value of 0.15 W/m²K. Render finished above dpc on stainless steel belfast. All movement joints formed as indicated on plan and in accordance with specification. All render accessories and fixings to be stainless steel.

U-value performance in accordance with 6.2.9 Extensions to the insulation envelope

Table 6.5. Maximum U-values for building elements of the insulation envelope

Wall - 0.17
Floor - 0.15
Roof - 0.11 Pitched roof (insulation between ceiling ties or collars)

PITCHED ROOF 35°
Marley Mendip concrete tiles Smooth Terracotta to match existing property roof over battens and counter battens. Proprietary VCL (Protect underlay or equal and approved) over 150x18mm treated SW timber sarking board mechanically fixed to proprietary treated SW timber trusses. Ventilated roof void, continuous to eaves with Lead roll ventilated ridge system. Warm roof construction insulation with 450mm of Rockwool Twin roll (or equal and approved) first layer parallel with truss chord, second layer perpendicular to trusses. Visqueen VPL (or equal and approved) with vapour resistance of greater than 530 MN/g. 12.5mm thick BGP plasterboard or equal and approved. U-value of 0.11W/m²K.

BUILDING INSULATION ENVELOPE
Air-tightness - Design air tightness to achieve minimum of 5m3/m2ha 50pa.

GLAZING
Installed in accordance with the manufacturers details and specification. Specification of glazing should be not less than Class C of BS 6262: Part 4: 2005. Triple glazed unit, Origin Window with Aerogel, 44mm triple glazed 4mm Diamant - 2x16mm 90% Argon - 2x4mm Total + 2 x 16mm Swiss Ultimate spacer bars. U Value of 1.0W/m² K.

ELECTRICAL
All new electrical works to comply with the Building Standards Scotland Regulations 2008 and all subsequent amendments. Also to comply with current IEE regulations, BS 7671, 17th Edition; 2008 to Amd 3: 2015. Electrics to be tested / installed by NIC EIC or SELECT Electrician or similar Electrical schemes recognised by The Scottish Building Standards to comply with Safety 4.5.0.

Then calculate the rate of heat loss from the proposed extension as follows:

Table 6.10. Data for proposed extension

Exposed element	Exposed surface area (m ²)	Column (b) Design U-values (W/m ² K)	Rate of heat loss (W/K)
Floor	13.4	x 0.15	= 2.01
Roof	13.4	x 0.08	= 1.07
External wall	30.7	x 0.13	= 3.99
Openings	3.3 + 3.3 + 6.38	x 1.0	= 12.98
Total rate of heat loss			= 20.05

From the above comparison, the rate of heat loss from the proposed extension (20.05) is less than that from the 'notional extension' (22.6). Proposal will comply.

Calculate the rate of heat loss from the 'notional' extension as follows:

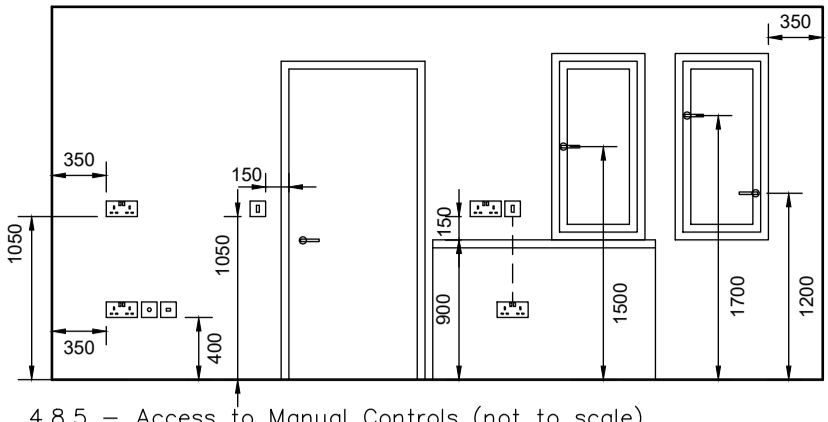
Table 6.9. 'Data for 'notional extension'

Exposed element	Exposed surface area (m ²)	Design U-values (W/m ² K)	Rate of heat loss (W/K)
Floor	13.4	x 0.18	= 2.41
Roof	13.4	x 0.18	= 2.41
External wall	28.8	x 0.22	= 6.34
Openings (% of floor area)	3.8 (25%) + 3.35 (built over)	x 1.6	= 11.44
Total rate of heat loss			= 22.6

Edenhall Grove - Room ventilation calculation - Natural Ventilation

Floor	Room Ref	Room Area (sqm)	Window/Door Ref	Window Area (sqm)	1/30th ratio (sqm)	Required Trickle Vent (400mm ² per sqm) mm ²	Actual Trickle Ventilation mm ²
Ground	Sunroom	13.4	WD1	3.3	0.53	5360	(2x5000) 10000
			WD2	3.3			(2x5000) 10000
			EDO1	6.38			
						Total	20000

In accordance with Building Standards Guidance clause 3.14.3 Table 3.5, all windows exceed minimum opening and trickle ventilation requirements



M&E LEGEND

SYMBOL	DESCRIPTION
LIGHTING	
⊕	Spot light (Where external IP66)
⊕W	Wall light
⊕P	Pendant
⊕S	Smoke detector to BS 5839: Part1: 2016
⊕H	Heat detector to BS 5839: Part1: 2019
⊕CO	Carbon monoxide detector to BS EN 50291-1:2018
SMALL POWER	
⊕	Switch
⊕	13A sockets
⊕	Spur
⊕	DB
COMMS	
⊕	Comms (back box only)
HVAC	
⊕	Radiators

LEGEND

WALL TYPE 1 - External leaf - 102.5mm thick frost resistant facing brick to match existing. Inner leaf 150mm thick C24 grade treated timber studs clad externally with 9mm OSB proprietary breather paper to outer face. Proprietary rigid PIR insulation 60mm thickness inner face of frame with 120mm to face of frame within cavity to receive proprietary vapour barrier inner face. Internal finish of 50x25mm straps and clad 1 layer 12.5mm thick plasterboard. Providing 30mins FR top achieve u-value of 0.13W/m²K

Roof - Pitched - Concrete tile over roofing membrane over sarking boarded timber trusses with proprietary rigid PIR insulation between proprietary busses and over to all thickness of 300mm to achieve u-value of 0.08W/m²K

FLOOR - Proprietary 170mm thick PIR insulation between treated 225x50mm C24 structural timber joists to achieve u-value of 0.15W/m²K

Proposed Internal suspended timber floor to SE drawing and specification

0 1 2 3 4 5 6M
METRES (scale @ 1:50)

Revision	Date	By	Chk.
A	231120	SB	SB
B	120121	SB	SB
C	130121	SB	JK

APPROVAL

Do Not Scale. Dimensions from Drawings. All dimensions to be verified on site, and any discrepancy to be notified to KBA.

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Drawn by
KBA

Checked by
KBA

Date
Aug 20

Scale
1:50 @A1

Project
**4 Edenhall Grove
Newton Mearns
G77 5TS**

Drawing
**Proposed General Arrangement
Plans and Elevations**

Client Job No: -	KBA Job No. KBA2592	Drawing No. BL(0-1004	Rev. C
CAD Ref:			