

Extension Specifications, 23 Nightingale Avenue

Floor area (internal): 27.6m²
Gross floor area: 31.9m²

Construction details:

Walls

Construction from inside: (Option A)

wet plaster (airtightness layer - must cover all surrounding membranes/tapes)

100mm dense concrete block, lime mortar

200mm cavity filled with 200mm dritherm32 batts above ground. ancon teplo wall ties. cavity filled with 200mm XPS below ground.

100mm brick to match house (Dapple lights), lime mortar

U=0.15

Alternative (B):

wet plaster (airtightness layer - must cover all surrounding membranes/tapes)

100mm dense concrete block

170mm cavity filled with 120mm PUR above ground. ancon teplo wall ties. cavity filled with 150mm XPS below ground.

100mm brick to match house (Dapple lights), lime mortar

U=0.15

Detailing:

- Inner leaf has row of foamglas perinsul blocks to line up with XPS in floor
- XPS top angled to form cavity tray. XPS sealed in place/gaps filled with PU foam.
- Seal from floor DPC to bottom of plaster with contega tape or similar
- Install airtightness membrane from behind plaster under joist-ends/top block course/lintel into cavity and wrap around on top of ply roof and tape to roof breather membrane.
- DPC installed 150mm above ground level in external leaf.
- Wall ties spaced 900mm horizontally, 450mm vertically (to BS1243)
- Two 100mm offset layers of Dritherm
- Cut into cavity wall at junction with house to make continuous cavity. New walls tied-in to existing.
- Cut garage wall at junction with new wall to break thermal bridge. New walls tied-in to existing.

AlternativeB detailing:

- Two offset layers of 60mm PUR, all seams foil taped. Inner leaf built first.

Foundations

Trench foundation, min 600mm deep (600mm wide) C15P. 60kN max load.

Note: trench already dug alongside garden wall (5.5 metres length)

Flat Roof

Construction from inside:

12mm plasterboard

Joists to engineers spec (63*145 @600mm centres)

18mm ply

Breather membrane (airtightness)

60mm pavatex woodfibre

100mm PUR/PIR (e.g. celotex EL3000)

20-80mm tapered PUR/PIR (e.g. celotex EL3000)

Waterproof membrane (cefil/sarnafil/polisystem)

U=0.14-0.11

Detailing:

- Breather membrane taped (tescon) to 'tony-tray' on outside walls
- PUR junctions taped
- PUR and waterproof membrane glued to manufacturers spec.
- Waterproof membrane detailing to manufacturers details: drip edge, kerb edge, upstand to garage wall.
- Connection to pitched roof detail modified to allow for counterbattens (see drawings)
- Breather membrane strip taken under pitched roof sarking, and taped to pitched PUR foil covering.
- Roof tied down to structure and sideways to walls with galv strapping

Pitched Roof**Construction from inside:**

12mm plasterboard

Breather membrane

Joists to engineers spec (47x145 @600mm centres)

Full joist depth breathable insulation (fibreglass/recycled PET)

100mm foil-faced PUR (e.g. Celotex GA3000)

38mm counterbattens

50mm battens

Tiles to match existing house (Norfolk Pantile)

U=0.11

Detailing:

- PUR boards butt glued (PU foam) and taped (foil tape)
- 18mm Ply sarking board under bottom tile for waterproof membrane connection detail
- Counterbattens butt up to sarking board - bottom batten trapping WP membrane on ply 20mm thicker to match counterbatten thickness.
- Breather membrane strip connecting PUR foil to flat roof breather as above
- PUR boards foamed/glued to wall
- Airtight strip between bottom of PUR and wall (tescon to foil and orconF to wall)
- Course of foamglas perinsul let into wall level with roof insulation
Cavity tray and weep vents let into wall above flashing (if required)
- Flashing between wall and tiles
- Airtightness detail on verge inner leaf.

Floor

Hardcore subbase ~150mm

Sand blinding ~50mm

Polythene sheet DPM 1200 gauge

170mm (2x85mm) XPS (Knauf polyfoam Floorboard)

100mm concrete

10mm acoustic foam

(Polythene to hold screed if using wet screed)

50mm screed. Contains UFH.

20mm tile+cement

U=0.15

Detailing:

- 100mm XPS upstand around walls
- UFH fixing and type TBD
- DPM continued into wall

Windows and doors

DG 4-16-4mm units, engineered timber frames. Ug1.1,Uw1.4, low-e, warm-edge

No trickle vents. (MHRV fitted)

Furniture and lights TBD

BS6206 class C glazing in doors and all windows within 800mm of FFL.

Glazing to BS6262

Openable area 1.38m² (to >30degrees)(5% of floor area)

Detailing:

- Windows mounted in plywood box extending from inner leaf.
- Positioned behind outer leaf to minimise thermal bridging.
- Tescon tape between frame and box
- Contega tape from box edge to plaster
- Cavity closed with 100mm PUR board+PUR foam, 150mm dpc roll to outer leaf.
- External trim (aluminium/wood) to cover insulation
- Door thresholds flush

Drains

Drains under building to be protected with 150mm of weak concrete mix

Lintel and 100mm flexible surround, or flexible pipe section, to be provided where drains pass through external wall footings.

Tasks

Task	Details	Comments
Groundwork	Dig up existing external concrete (15m ²) and open ground (10m ²) down to base depth.	
	Remove doorsteps	
	Lay out foundations/drains	
	Dig foundations (6.5 m to dig, 5.5 metres dug already)	
	Fill foundations	
Drains	Move existing soil pipe to front wall	
	Reconnect bathroom drainage to soil pipe	Separate quote, part A
	Connect soil pipe to existing foul manhole	
	Find existing rainwater drain route	
	Install inspection pit at junction to existing drain	
	Install rainwater sump by boundary and pipe to inspection pit	
	Remove garage rainwater pipe	
	Bypass and fill in existing manhole	
	Install external inspection pit (x2)	
	Connect new garage/front drainpipe to inspection pit	
Floor	Build internal leaf as far as airtight layer	
	Install sub-base	
	Notch-in foamglas blocks to garage wall at insulation level (optional)	
	Install 200mm XPS	
	Install vapour barrier (continue into wall)	

	Install 100mm concrete floor, to 70(?)mm below FFL	
Walls	Internal blockwork	
	External bricklaying	
	Cut into house wall and tie in	
	Cut into garage wall and tie in	
	Parge new walls internally at roof junction	
	Install XPS in cavity below ground level	
	Install dritherm/PUR above ground level	
	Plaster new external walls	
	Build timber framing above windows	
	Fit fascias	
	Fit gutters and downpipes	
Structure	Fit main post	
	Fit main beam, epoxy junction to drawing	
	Bolt timber frame to beam end	
Garage roof	Remove old garage roof	
	Build up garage wall + gables to apex, fitting foamglas layer at flat roof level	
	Protect neighbouring property (garage roof apex)	
	Remove half-ridge tiles	
	Install joists, taking care of airtightness.	
	Fit Roof windows + flashings	
	Attach PUR with counter-battens	
	Fit battens and tiles	
	Fit ridge tiles	
New Roof (pitched)	Fit rafters/construct roof frame	
	Pitched roof connection to existing house (flashing, foamglas, cavity tray, weep vents)	
	Attach breather membrane and make airtight	
	Install PUR boards – tape joints, counterbatten	
	Fit battens and tiles	
	Install insulation between joists	
	Plasterboard ceiling	
	Construct insulated stud wall between garage and sunroom under ceiling vault	
Flat roof	Hang joists	

	Lay ply boarding	
	Lay breather membrane	
	Install insulation over ply and joists - tape joints,	
	Install tapered insulation	
	Install waterproof membrane	External contractor, please quote separately, part B
	Do edge detailing: drip side, kerb side garage upstand connection (flashing),	Quote part B
	Install insulation between joists	
	Plasterboard ceiling	
Windows / Doors	Glue ply surround box Foam/tape window into box Tape box into plaster (contega) Fit door threshold detail (See drawings)	Non-roof windows and doors to be supplied by owner. Please quote separately for fitting. Quote part C
Ventilation		To be done by householder
Garage Door	Insulated foam-cored section door	To be done by householder
Garage insulation	Fit 100mm PUR and sheathing	To be done by householder
Underfloor heating (pipe lay only)	Lay pipes, pressure test, lay screed, terminate into kitchen. (note, not full system install)	Quote part E
Other	Remove kitchen door	Quote part F
	Block/brick/insulate doorway	Quote part F
	Remove kitchen door lintel?	Quote part F