

Farrar Bamforth Associates Ltd
Chartered Architectural Technologists

SPECIFICATION

**RESIDENTIAL DEVELOPMENT
AT
48 STILE COMMON ROAD, NEWSOME

FOR

JELLIE PROPERTIES LTD**

Farrar Bamforth Associates Ltd.
51 Trinity Street
Huddersfield
HD1 4DN

19/D52

GENERAL

Do not scale from drawing.

All figured dimensions to be taken in preference to scaled dimensions and all dimensions to be checked on site prior to construction or assembly, and any discrepancies to be reported.

All work to be carried out in accordance with the current Building Regulations approved documents, together with all relevant current British Standards.

All structural timber to be stressed graded to BS EN 1995:2004 and strength class in accordance with BS EN 338:2016. The timber used is to be a species and grading as specified in the Building Regulations and TRADA Eurocode 5 span tables fourth Edition 2014 and to be C24 or C16 as specified.

All relevant construction materials shall carry the CE Mark in accordance with the provisions of the Construction Products Regulations.

Apartments, Semi's and Terraced Houses require a sound test to be undertaken upon completion but before soft furnishings and occupation.

Air pressure tests to be undertaken upon completion but before occupation and to be included in 'as-built' SAP calculations (three of each dwelling type or 50% whichever is least). Until results of tests are known, a figure of $8\text{m}^3/(\text{h.m}^2)$ at 50 Pa is to be used in SAP Calcs. (A target figure of $5\text{m}^3/\text{km}^2$ at 50 Pa is preferred)

Construction to be to Accredited Details as Part L1A 2010. Upon completion, signed accredited details for each plot to be passed to SAP Assessor.

Fire vehicle access to within 45m of all points within building to be provided.

Where possible building elements shall have the highest achievable rating in the 'Green Guide to Specification' and be obtained from an ISO 14001 certified manufacturer.

Prior to work commencing a Design Stage SAP Calculation to be prepared with Target Emission Rate, upon completion an 'As-Built' SAP Calculation to be prepared with Dwelling Emission Rate.

An EPC to be produced and issued to Building Control prior to issue of completion certificate. Confirmation of 'as-built' spec to be provided to SAP Assessor prior to production of EPC.

SUBSTRUCTURE

Foundations

To suit site conditions. Usually 650 x 175 mm concrete strip foundation for external walls and 450 x 175 mm for 100 mm single block walls.

Foundation depth to suitable bearing strata to local authority approval with min. 750 mm cover.

Concrete to be sulphate resistant DS1 or AC2.

Works below d.p.c.

Blockwork used in external walls to outer leaf below ground level and inner leaf below d.p.c. level to have density exceeding 1500 kg/m³ or a compressive strength not less than 7 N/mm². Cavities to be filled below ground level with weak mix concrete.

or

Blockwork used in external walls to below ground level to be 7N/mm² lightweight foundation blocks

Oversite Concrete

100 mm oversite concrete (ST1 mix) on 100 mm well compacted sulphate free hardcore.

Retaining Walls

Retaining walls are to be built in accordance with Structural Engineers design and details.

Tanking

To be designed and installed to BS 8102:2009 Grade 3 for habitable accommodation, with no water penetration. Water proofing system to have an agreement certificate and to be installed by a qualified specialist, preferably one who has obtained the Property Care Association 'Certified Surveyor in Structural Waterproofing' qualification, in accordance with manufacturer's recommendations.

WALLS

External Walls

100mm coursed artificial outer leaf / 50mm clear cavity /50mm Kingspan Kooltherm K108 Urethane insulation partial fill cavity boards held back to inner leaf with plastic clips fixed to wall ties with 100mm lightweight blockwork inner leaf min. 120kg/m² finished with 6mm 'Gyproc Soundcoat Plus' Parge Coat to receive plaster board on dabs and skim

Cavity to be closed around all openings by fitting insulated cavity closures to avoid thermal bridging. Eaves and verge closed with mineral wool cavity closure.

Wall ties to be s.s. type B double triangular built in at 450mm vertical centres and 750mm horizontal centres and at every block course at reveals.

Lateral restraint to be provided to external walls at verge, top floor ceiling and all upper floor levels with 30 x 5mm x 1100mm long galv. m.s. straps at 2m centres.

External wall service cabinets to have 103 x 103 galv. m.s. angle over with cavity tray d.p.c. linked to vertical d.p.m. behind.

All blockwork walls to be dry lined with 9.5 mm tapered edge gyproc wallboard with filled and taped joints and gyproc drywall top coat or 9.5mm standard wallboard and skim. When dry lining provide a continuous ribbon of gyproc adhesive perimeter seal around openings at room corners and around socket boxes.

Inner leaf blockwork to be 7N/mm² for three storey houses, design by Structural Engineer.

Party / Separating Walls

General

Walls to be built to underside of roofing felt and fire stopped with 25mm mineral wool blanket below felt and above between bettens.

<http://www.nhbc.co.uk/NHBCPublications/LiteratureLibrary/Technical/filedownload.45119.en.pdf> (Clear detail shown on page 7 of above NHBC document)

Provide Rockwool FIREPRO 200mm x 110mm thick Rockwool PWCB acoustic and fire cavity barrier to all party wall junctions and airtight seal.

<http://www.rockwool.co.uk/globalassets/rockwool-uk/downloads/datasheets/fire-protection/rockwool---tcb--pwcb-cav-v2.pdf>

Switches and sockets in party wall to be avoided.

All switches and sockets in separating metal frame or timber frame wall to be enclosed with two layers of plasterboard or in acoustic socket boxes.

E-WM-14 (5dB better)

Party walls to be constructed in 2 no. leaves of 100mm lightweight blockwork (1350-1600kg/m² density) with min 100mm cavity containing 35mm Isover RD35 foil faced mineral wool acoustic batt. Finished with 12½ mm wallboard TEN and 3mm skim both sides. Wall ties to be SS Type A double triangular built at 450mm vertical centres and 750mm horizontal centres. All exposed edges to be sealed and party wall sealed in line with insulation at abutment with external wall to give U Value of 0.2 W/m²k.

Internal Walls

Internal load-bearing walls to be constructed of 100mm lightweight concrete blockwork with dry lining as specified elsewhere.

Non-load bearing partition walls to be constructed of 70 x 50mm softwood studding or 70mm Gyproc metal framing with 12.5mm wallboard ten and skim each side and 25mm insulation quilt between studs (min density 10kg/m³).

Partition walls to protected stairwells in 3 storey houses to have 12.5mm plasterboard and skim to both sides to give half hour fire protection.

LINTELS**External Walls**

Artificial stone lintel to outer leaf - 100mm x 140mm dp with Keystone SB/K galvanised steel lintel to outer leaf walled above stone with Keystone BOX/K-100 to inner leaf, either 150mm or 215mm depth to suit span, all in accordance with manufacturers recommendations.

Ensure cavity wall insulation continues down to cavity closer.

In eaves conditions use Keystone EL/K-90 lintels, depth to suit span in accordance with manufacturers recommendations.

Internal Walls

Reinforced concrete lintels 100mm x 140mm dp. for spans up to 1800mm.

Steel beams to structural engineer design supported on pad stones.

FLOORS

Lower Ground Floor - concrete ground slab with insulation over

Note: Ground floor to be constructed in line with Characteristic Situation Level 3. With reference to BS8485, accepting that the development conforms to a 'Type A' building, if adopting CSL3, a score of 4.5 would need to be achieved combining two or more elements. This is to be achieved via the following:

- Basement floor/ walls conforming to BS8102:2009, Grade 2 waterproofing – score of 2.
- Gas resistant membrane – score of 2.
- Pressure relief pathway formed of low fines gravel: low fines gravel to be placed behind the retaining structure and floor slab/raft – score of 0.5
- Total score of 4.5

150mm th. concrete slab linked with retaining wall conforming with BS 8102:2009, Grade 2 waterproofing (score of 2) on gas resistant membrane (score of 2) on min. 150mm well compacted sulphate free low fines gravel hardcore to provide pressure relief pathway (score of 0.5) with a floor finish of 65mm sand/cement screed on separating layer on 125mm Kingspan Kooltherm K3 insulation with 25mm perimeter insulation on 500 gauge polyethylene Vapour Barrier.

The gas resistant membrane shall meet the following criteria (from Table 7, BS 8485: 2015):

- Sufficiently impervious (methane gas transmission rate $<40.0\text{ml/day/m}^2/\text{atm}$ (average) BS ISO 15105-1 manometric method).
- Sufficiently durable and strong to remain serviceable for the anticipated life of the building, to withstand in-service stresses and installation process.
- Capable, after installation, of providing a complete barrier to the entry of the relevant gas.
- Verified in accordance with CIRIA C735: 2014: *Good practice on the testing and verification of protection systems of buildings against hazardous ground gasses.*
- Chemically resistant to degradation by other contamination that might be present.

d.p.m. below floor slab to be linked with d.p.c. in walls.

Upper Ground & First Floor - suspended timber

22mm Safedek P5 moisture resistant chipboard with slip resistant polypropylene film on Engineered Timber I joists at 600mm centres to manufacturers design and recommendations with 15mm wallboard ceiling.

100mm min thick mineral wool insulation quilt (min density 10 kg/m^3) to be laid between and fitted tight to floor joists to provide sound reduction.

Joists built into cavity walls to be either on hangers or fitted with proprietary end caps or sealed with non-setting butyl rubber or silicone sealant.

ROOFS

Pitch Roof

Grey concrete interlocking roof tile finish on 50 x 25 mm tanalised softwood battens on 38 x 25mm tanalised softwood counter-battens Proctor Roofshield or other agreement certified breather membrane on approved room in the roof trussed rafters at 600mm centres and 35° pitch. trusses fixed to 100 x 50 mm tanalised softwood wallplate bedded and strapped to wall with galv. steel straps at 2m c/s.

Where ceiling follows line of rafters lay 125mm Kingspan Thermapitch TP10 urethane insulation board between rafters and provide ceiling of 37.5mm insulated plasterboard and skim under rafters to achieve a min 'U' value of 0.16.

When using single lap tiles from Feb 2015, tiles must be mechanically fixed with a clip or nail (ratio of tiles to fixings depends on exposure manufacturer can assist). When using mortar for verge, ridge or hips, a mechanical fixing must also be used, in accordance with BS5534, alternatively use a dry fix system.

Roof trusses and associated wind bracing to be designed in accordance with Building Regulations Approve Document A, 2004 and the builder should notify the truss manufacturer of the site altitude to enable the correct loadings to be applied.

Roof trusses to be fixed down to wallplate with galv. steel truss clips.

UPVC fascia and soffit.

Provide half hour fire resistant cavity barrier to boxed eaves on line of party wall.

200 mm glass fibre insulation quilt to roof space laid between ceiling joists with additional layer min 250 mm th. laid over ceiling joists, loft insulation to be taken over wallplate to abut wall insulation to give a U Value of 0.10 for trusses.

Eaves Carrier for first 300mm of roof and tuck into gutter with breather membrane to remainder. Membrane to be overlapped by 150mm and jointed with Butyl Tape and to have 50mm min turn up at chimneys and abutments. Membrane to be sealed with Butyl Tape at all Velux and dormer windows, overlaps, eaves, verge and any abutment or protrusion.

Monopitch Roof

Grey concrete interlocking roof tile finish on 50 x 25mm tanalised softwood battens on 38 x 25 mm tanalised softwood counter battens on Proctor Roofshield or other agreement certified breather membrane on 125 x 50mm rafters @ 400mm centres and 18° pitch.

UPVC fascia and soffit.

Where ceiling follows line of rafters lay 135mm Kingspan Thermapitch TP10 urethane insulation board between rafters and provide ceiling of 37.5mm insulated plasterboard and skim under rafters to achieve a min 'U' value of 0.16.

Where monopitch roof abuts wall provide code 5 lead flashing with min. 150 mm upstand and cavity tray d.p.c. over. (30° pitch to have 150mm lap, 15° to have 300mm lap)

Rainwater Goods

115 mm p.v.c. gutters with 63 mm square or circular p.v.c. rainwater pipes.

CEILINGS and FIRE PROTECTION

Ceilings generally to be 15mm wallboard and skim.

All steelwork to be encased in 15mm Gyproc Fireline Board and skim to provide one hour fire resistance.

Soil and vent pipes shall be encased with 2 layers of 12.5mm plasterboard with staggered joints. All pipes and branch connection within protected shaft to be bound in unfaced mineral wool and boxing packed with insulation.

RESIDENTIAL STAIRCASE

Staircase and balustrading to be constructed as follows:

- min. clear headroom from pitch line 2m.
- unobstructed width of stairway 900mm. between handrails.
- max pitch of flight 42°
- 14no. equal risers at 192.86mm (total rise 2700mm)
- going of tread to be 230mm

Handrail to staircase min. 900mm high above pitch line and balustrade to landing min. 1100mm high. max 100mm spacing between balusters and balustrade not to be readily climbable.

Stair soffit to be lined with 12.5 mm plasterboard and skim.

WINDOWS and DOORS

Any glazing to windows within 800 mm of floor level, any glazing to doors within 1500 mm of floor level and 300 mm either side to be laminated or toughened glass unless in small panes not exceeding 0.05m².

All ground floor windows with an opening light should incorporate laminated glass to BS EN 356:2000. Door sets must incorporate one pane of laminated glass meeting requirements of BS EN 356:2000 class P1A. There should also be a means of giving a wide angle view of the area immediately outside the main entrance door to individual homes.

Easily accessible doors and windows will be of a design that has been certified to PAS 24 or equivalent security standard, and installed in accordance with manufacturers design.

All windows to be Band A.

All windows to be draught sealed and fitted with sealed double glazing with 18mm ARGON filled cavity, with warm edge spacer and low E glass with 0.05mm soft coating to achieve average 1.4U value.

All first & second floor windows situated over projecting ground floor areas or where otherwise not readily accessible are to be cleanable from the inside, being either reversible or fitted with reflex hinges in accordance with current edition of the Construction (Design and Management) Regulations 2015.

Windows to habitable rooms to have opening light area min. 1/20th of floor area and to be fitted with permavents to provide background trickle ventilation to meet Part F 2010 Table 5.2a and to be calculated for each individual unit.

Windows to kitchens, utility rooms, bathrooms and w.c.'s to be fitted with permavents to provide background trickle ventilation of not less than 2500mm² equivalent area..

FD30 thirty minute fire resistant doors between all rooms or stores and protected escape stair.

All external doors to be draught sealed opaque doors to achieve a U Value of 1.0, Semi-glazed door to be fitted with sealed double glazing with Band A double glazing to achieve a 1.2 U Value or triple glazing to achieve 1.0 U Value with thermally broken frames.

Glazing Specs

Band 'A' & 'B' Glazing

Pilkington EnergiKare Plus

26mm Sealed double glazing with 4mm Pilkington Optiwhite outer pane, 18mm cavity filled with Argon Gas, warm edge spacer & 4mm Pilkington K Glass Optiwhite inner pane.

Velux rooflights with standard argon filled double glazing (ref -70) to give a U Value of 1.3.

ELECTRICAL and MECHANICAL VENTILATION

The electrics are to be designed, installed, inspected, tested, commissioned and certified by a person competent to do so and shall be to 18th Edition of IEE Wiring Regulations and BS7671:2018.

Prior to completion an Electrical Installation Certificate to be issued to client and building control.

The ventilation systems are to be tested and commissioned, air flow rate to be provided to Building Control and an O & M manual provided to occupier.

Each dwelling to have either a telephone line or CAT to provide physical infrastructure for high speed electronic communications.

Kitchens to have mechanical extract ventilation equivalent to 30 litres / sec adjacent to or over a hob, or 60 litres / sec elsewhere when operated manually. Where no openable window provided, fan to be controlled automatically and to have 15 minute overrun.

Utility rooms to have mechanical extract ventilation equivalent to 30 litres / second when operated manually.

Bathrooms and showers (with or without w.c.) to have mechanical extract ventilation equivalent to 15 litres / second when operated manually.

W.c. separate from a bathroom to have mechanical extract ventilation equivalent to 6 litres / sec controlled automatically and to have 15 minute overrun.

Where no openable window provided to wc fan equivalent to 6 litres/sec controlled automatically to be provided and to have 15 minute overrun.

Where mechanical extract is to be provided to rooms having no openable window an air inlet is to be provided e.g. 10 mm gap under door.

All ductwork to be rigid and lagged with foil backed Rockwool insulation or to be thermal ducting. Flexible ducting not to be used.

Any ductwork which passes through the enclosure to a protected stairway or entrance hall to be fire stopped as it passes into the enclosure.

Provide 100% energy efficient lighting.

External lighting to be controlled by daylight and movement sensors and max 100w.

All electric switches and socket outlets to be located between 450mm and 1200mm from floor level.

All switches and sockets located in metal or timber framed party walls to be enclosed within two layers of plasterboard.

Fire Alarm (Apartments)

The fire alarm and detection systems should be designed, installed, commissioned and serviced by a person competent to do so and preferably by a firm listed as complying with LPS1014, BAFE SP203 or equivalent standard.

Fire alarm system to BS 5839 – 6:2013 Grade D Category LD3 providing full cover of common and landlords areas. Break glass units and smoke detectors with sounders.

Apartments to have mains smoke detectors to BS EN 14604:2005 and heat detectors to BS5446 – 2:2003 with sounders.

Commissioning certificates to be provided upon completion.

Emergency Lighting

Emergency lighting installation to common and landlords areas to BS EN 1838/BS 5266 Part 1 & Part 7 :1999 illuminating escape routes, exits, service areas and exit signs. Commissioning certificates to be provided upon completion.

At least two luminaires in every compartment of an escape route or open area.

HEATING & HOT WATER**General**

The heating system is to be designed, installed, tested, commissioned and certified by a person competent to do so.

If heating is provided to common areas of apartments then SBEM calculation to be provided.

The hot water system should be able to resist the effects of temperature and pressure during normal operation and foreseeable failure modes.

There is no secondary heating source.

The hot water supply temperature to a bath should be limited to a maximum of 48°C by use of an in-line blending valve or other temperature control device.

Potable Water

The sanitary appliances and fittings are to be specified and fitted to ensure a maximum usage of 125 litres/head/day not including non wholesome water. 'The Water Efficiency Calculator for New Dwellings' to be completed by the plumber and submitted to Building Control not later than five days after completion and prior to issue of final certificate.

DRAINAGE

Above Ground Drainage

40mm diam. bath, shower and sink wastes 32mm diam. wash hand basin wastes 100mm w.c. wastes.

All fittings to have anti-syphon resealing traps with 75mm deep seals to wash hand basins and sinks and 50mm deep seals to baths and w.c.s

No connections to be made to soil pipes within 200mm below w.c. connection, vent pipe to either terminate to external air 900mm above openings within 3m and finished with cage or to terminate internally where appropriate and ventilated with air admittance valve.

Below Ground Drainage - private drains

Drainage under buildings and those deeper than 600mm to be surrounded in 100 mm bedding.

Where less than 600mm deep vitrified clay pipes to have 100mm concrete surrounding with 13mm compressible filler at each joint, and UPVC pipes to have reinforced concrete bridging.

Where drain passes through wall insert concrete relieving lintels over to give 50 mm clearance around pipe and mask opening both sides with rigid sheet material.

Manholes to be constructed with 150mm concrete base, precast concrete rings or g.r.p. inspection chambers set in concrete. Manhole sizes to be in accordance with H1 Tables 11, 12 with light duty covers in garden areas and medium duty covers in drives.

Drainage pipework to be either flexible jointed earthenware pipes or u.p.v.c. installed and laid to falls strictly in accordance with manufacturers recommendations.

All concrete in drainage infrastructure to be ST2 to BS EN 206-1:2000 with minimum 20mm aggregate.

All existing drainage to be investigated and inoperative drainage to be cut back, capped and filled with grout or removed.

Below Ground Drainage - adoptable sewers

Any land drain or watercourse crossing the site is to be diverted so as not to pass under proposed buildings. Diversions to be approved and inspected on site by local authority.

No building to be erected within 3m of an adoptable sewer or watercourse.

Sewer connections into existing drains of 300 mm dia. or below to be via bandseal coupling and at 45 deg. Connections into drains over 300 mm dia. to be via saddle. All connections to be inspected and approved by Y.W.A.

Adoptable sewers and manholes to be constructed to WRc 7th edition 'Sewers for Adoption - design and construction guide for developers'.

Drainage pipework to be either Vitrified clay pipes with propylene flexible couplings all to BS EN 295 or UPVC pipes to BS 4660:200 & BS EN 1401-1 laid with 150mm deep class S bedding and surround.

Any sewer that crosses a boundary of ownership is to be adopted.