SPECIFICATION : 221A BELSIZE ROAD, KILBURN, LONDON NW6 4AA
(OCTOBER 2012)

FOUNDATION : To be minimum 1.2 m. below lowest ground level or to level of adjacent drains , whichever is deeper. To be excavated 0.6 m. below any roots found in the trench. Use 1:2:4 **sulphate** resisting concrete. Bridge all pipe work passing through footings. All foundation work to be in accordance with CP 2004: 1973 and BS.8110. Foundation design in accordance with HHBC chapter 4.2. In clay soil , foundation to be minimum 600 mm wide. Foundation over 1200 mm deep should be provided with earthwork support. Foundation depths in respect to trees in close proximity to be decided by Building Control Inspector.

CAVITY WALLS : 103 mm brick external skin (to match existing), 100 mm cavity fulfilled with 100 mm **Rockwool cavity wall insulation**, or filled with 75 mm **Dritherm 32** cavity insulation (to achieve U value of 0.28 W/ m2 K) and inner skin of 100 mm **Durox Superblock or thermalite Turbo** blocks (or blocks with a value of 0.11 W/mK or better) in mortar(1:1:6). Cavity to extend 225 mm below DPC. Cavity insulation to be installed 150 mm below the top of floor insulation. Insert stainless steel wall ties at 450 mm c/c vertically, 900 mm c/c horizontally and at every block at reveals. Wall ties to be installed in accordance with Table 5 of Approved Document A (2004). Walls to be bonded to existing structure with **Furfix stainless steel** channels in accordance with manufacturers instruction. Cavity to be filled with weak concrete to within 150 mm of DPC level and to be closed at roof level with blockwork. New walls to continue up to underside of roof decking in the case of flat roofs. Walls to be plastered internally with 13 mm dense plaster. Provide **Thermalite** cavity closers (0.28W/m2K). All works to comply with Part L of the Building Regulations and in particular with the Accredited Construction Details (ADC`s) numbers MC1-GF-01, MC1- WD- 01, MC1-WD-04, and MC!-WD-05.

If outer skin is to be concrete block then **Celcon Standard** blocks Can be used (BBA Cert. No. 86/1689.) External finish is then to be 2no. 10 mm. thick coats of **render** (mix 1:2:9 cement:lime:sand) in accordance with BS5262:1991. Cavity is again insulated with 75 mm **Dritherm 32**cavity wall batts (BBA Cert. no. 95/3212 .) Internal blocks are to be finished with 13 mm lightweight plaster in accordance with BS5492: 1990. U value of wall is to be 0.28W/m2k.

With **Kingspan** insulation it must be **50 mm Kooltherm K8** &

13 mm lightweight plaster finish internally, or **50 mm Kingspan Thermawall TW50** and 13 mm P/Board on dabs and skim.

With **Celotex** it is to be **50 or 55 mm Celotex CW4000** and 13 mm lightweight plaster or 13 mm P/Board on dabs and skim finish.

If 300 mm cavity wall is to be constructed with both leafs in **concrete blocks** then the cavity insulation is to be **75 or 85 mm Dritherm 37 Standard** depending on the type of blocks used. Internal finish is to be 13 mm lightweight plaster.

EXTERNAL FINISH MAY ALSO BE IN PORTLAND CLADDING PANELS ATTACHED TO THE OUTER LEAF.

U value for wall with any procedure is to be 0.28 W/m2 K.

EXISTING SOLID WALLS : To be drylined by providing **77.5 mm Celotex PL4000** boards with joints taped against brickwork and 25 x 50 mm battens @ 600 c/c fixed through insulation to walls with 1 layers of 5 mm skim coat internal finish. **(Min.U value 0.28 W/m2 K.)**

Or use **62.5 mm Kingspan K18** insulation boards on battens with 1 layer of 5 mm plaster skim finish.

SOLID GROUND FLOOR : 75 mm sand / cement screed (3:1) on 100 mm concrete oversite (1:2:4) on **80 mm Celotex GA 4000 insulation** (U value min. 0.22 W/m2K) on 1200 g. polythene DMP on 50 mm sand blinding on 150 mm well compacted hardcore. Provide separation layer on top of insulation. Ensure that Cellotex insulation is provided vertically at the perimeters (min. 25 mm) to avoid `cold bridge`. Existing sub floor ventilation to be maintained by providing 100 mm ducts under floor to 225 x 75 mm air brick in external walls. New DMP to be lapped to new and existing DPC and DMP`s.

80 mm Kingspan TF70, or 80 mm Xtratherm Thin – R can also be used.

In all cases the U value to be 0.22 W/m2K.

SUSPENDED TIMBER FLOOR : If the floor is not to be a solid floor , and instead a suspended timber floor construction then the insulation must be **75 mm Celotex FR4000** boards on battens , or **75 mm Kingspan Thermafloor TF70** boards, or **75 mm Xtratherm XTUF** boards on

battens.

DRAINAGE : New drains, to be in Hepworth Supersleeve pipe work or other eg. Terraine, (1: 40 fall) to BS. 65 laid in accordance to manufacturers instruction and surrounded in 150 mm pea shingle. All new and existing drains under building to be encased in 150 mm concrete and bridged by RC lintols where passing through walls and foundations.

DRAINAGE ABOVE GROUND : New **100 mm** soil and vent pipes to BS. 5572 and taken to 1 m. above any window within 3 m. and fitted with a cowl. New wastes to be **38 mm** (sink , bath , shower) and **32 mm** (basin) all fitted with **75mm** deep seal traps. Provide rodding eyes at changes of direction. Wastes runs in excess of 2300 mm to be increased to **50 mm** diameter pipes. Rain water gutters of 112 mm PVC and down pipes of **68 mm** are to be provided. These are to be connected into existing surface water drain if possible.

DAMP PROOF COURSE : Provide hyload DPC at reveals to all openings and at first floor level a minimum of 150 mm above ground level and lapped into existing DPC.

BRICKWORK BELOW DPC : All brickwork to be in common bricks and **sulphate** resisting sand and cement (3:1). Cavity walls filled with lean mix concrete to ground level.

PITCHED ROOF : Any new structural timber to be stress graded SC4 to BS. The existing roof is to be insulated by using **135 mm Celotex GA4000 -100 mm boards between the rafters and 35 mm below the rafters** – with 12.5 mm plasterboard and 5 mm plaster skim finish on the Celotex boards ,or **100 mm Kingspan Kooltherm K7** between rafters, and **37.5 mm K18 Kooltherm** below rafters, or **100 mm Kingspan Thermapitch TP10 and 37.5 mm Kooltherm K18 below** rafters **dry lining boards.**
The roof is to be ventilated at the eaves by 25 mm continuous soffit air vent running the whole length of the eaves.

U values for pitched roof if **WARM DECK** (insulation above rafters) is **0.18 W/m2K**. It is the same if it is **VENTED COLD DECK** pitched roof (insulation between rafters,) and **0.16 W/m2K** if insulation is between and over ceiling joists.

MOVEMENT JOINTS : Provide movement joints in light weight blockwork at max. 6.0 centres. Joints to be tied together with 40 x 1.5 mm stainless steel

strips 20 mm long in alternate courses. Work to comply with BS.5628 part 3. Provide mastic pointing externally.

FLAT ROOF : Is to be **WARM DECK.** Bitumen bedded stone chippings to cover the whole surface to a depth min. 12.5 mm. on three layers of built up foofing felt complying with BS 747.1977 9 1986) laid in accordance with CP144. Part 3. 1970. Top and second layer of felt to be type 3B felt. Base layer to be partially bonded using type 3G felt on **120mm Kingspan Thermaroof TR27 LPC/FM** roof board on firing pieces to provide a min. fall 1:40 (25mm/ m.) Roof U value to be 0.18 W/m2K.

Roof joists to be 150 x 50 mm c16 grade timber @ 400 c/c. or deeper to match the existing. Lateral restraints to be provided to top of walls running parallel to roof joists with 1200 mm long 30mm x 5 mm galvanised mild steel straps at max. 1.8 m. centres. Straps to be built into cavity construction and fixed back over 3no. joists with timber noggings between. 100mm x 50 mm timber wall plate is to be bedded to top of wall and held down with 30mm x 5mm mild straps at 1.8m. centres.

Ceiling finish to be 12.5 mm plasterboard with 5 mm gypsum plaster Skim. External walls to be built up to the underside of the roof decking and sealed. With warm deck roof no venting is required.

U Value for any type of roof is to be minimum 0.18 W/m2K.

WINDOWS : To be in powder coated aluminium finish or timber. All windows are **triple** glazed and to be installed with vertical and horizontal 100 mm DPC's to adjacent walls. Window frames are to have trickle vents (4000 mm 2), and window openings to exceed $1/20^{th}$ respective room floor area. All work is to comply with Regulation L.1 and windows and glass must provide **U value of 1.6 W/m2 K, or WER Band C.**

DOORS : **If glazed must have a U value of 1.8 W/m2K.**

ROOF LIGHTS : For a roof pitch of 20 to 40 degrees **U value to be + 0.4 W/m2K,** for 40 to 60 **U value is + 0.30,** and 60 to 70 it is **+ 0.2 W/m2K. Above 70 degrees it is considered the same as a wall 0.28W/m2K.**

VENTILATION : Mechanical ventilation in bathrooms with no windows must be such

to allow 15 litres/second air extraction capacity. In the kitchens the requirement is 60 litres/second (or 30 litres/second where a cooker hood extractor fan is fitted.) Fans must work intermittently with 15 minute over run. Provide 8000 m2 background ventilation to bedrooms by means of 225 x 150 air bricks built into external wall a minimum of 1.75 m. above floor level. Closable shutters are required to the air brick trickle vents.

LINTELS : Use **Catnic** or similar equivalent lintels over openings complete with insulation infill , & minimum 150mm end bearings. On External walls provide weep holes above the lintels.

LEAD WORK & FLASHING : Lead flashing to be laid in accordance with BS 6915: 1988 as below :

1. Min. 150mm upstand in Code 4 lead to BS 1178:1982 chased 25mm into wall with lead wedges at 450 centres. Max. single length of lead to be 1500 mm. **Patination** oil is to be applied to lead as soon as possible to prevent carbonation of the surface.

2. Horizontal and racking abutment flashing to have a min. 100mm upstand in Code 4 lead chased 25mm into wall with lead wedges at 450mm centres (lead wedges ateach step to stepped flashing.) lead to extend over the tiles or slates min. 150mm or 200mm where plain tiles are used. Soakers to be Code 3 lead.

STEEL WORK : All steel work to have min. end bearing on to padstones of 100 mm. Beams to be encased in 2 layers of 9.5 mm plasterboard with 1.6 mm wire binding at 100 mm pitch , and 5 mm gypsum plaster finish , or **2 coats of intumescent paint** applied to manufacturers instruction to provide min. 30 minutes fire resistance.

GLAZING : All glazing within 800 mm of finished floor level is to be toughened glass (Class A) to BS.6206 , together with glass within 1500 mm of floor level in a door and any adjacent side panel within 300 mm of door.

All new windows and external glazed doors to be timber triple glazed, or powder coated aluminium frames with a min. 40mm gap between panes and low-e glass (Pilkington K glass) Max.**U value to be1.6 W/m2K, or WER B and C.**

SMOKE ALARM : Mains operated **smoke detector** with battery backing , is to be fitted in all kitchens

LIGHTING : **All lighting is to be low voltage energy efficient fitting to comply with Regulation L1B.**

All electrical work is to be carried out by a competent engineer recognized by **NICEIC , ECA , or NAPIT**. A copy of the appropriate BS7671 electrical installation and Test Certificate will be provided to the Council on completion of the work.
Any electrical meters fitted below any staircase , or elsewhere must be in a 1 hour fire proof box.

WATER : Supply for kitchen is from the **mains water system.**

CENTRAL HEATING : New **Condensing** boilers are to be installed for each flat with a **SEDBUK in Band A.**
All the new radiators must be fitted with **thermostatic radiator valves.**
All work is to be done and certified by a Corgi approved engineer.

SMOKE DETECTOR : Is to be fitted on each floor , and a **heat detector** is to be installed in all kitchens.

GAS WORK : Must be carried out by a registered member who will issue a **Gas SAFE Certificate** on testing and completion of work.

SAP REPORT : Is to be provided on completion of work.

ACOUSTIC REPORT : **Is to be provided on completion of work.**

Sound insulation must be provided both horizontally and vertically between each flats and in common circulation areas.

Monarfloor Trideck acoustic insulation system or other can be used for floors, and sound block acoustic panels can be used for vertical walls.

GENERAL : **All work is to be carried out in line with the current Building Regulation and to the Building inspectors satisfaction.**

ALL THE U VALUES RELATING TO THE VARIOUS ELEMENTS OF THE BUILDING HAVE BEEN SPECIFIED ABOVE. THESE CONTRIBUTE TOWARDS THE SUSTAINABILITY OF THE NEW DEVELOPMENT.

All measurements are to be taken by the contractor and checked on site.