BRIEF SPECIFICATION FOR COMPLIANCE WITH

THE BUILDING REGULATIONS

2013 (as amended)

For works at

THE COTTAGE

18 MONMOUTH STREET

LONDON WC 2

For

NASH HOMES & PROPERTY LTD

JUNE 2015

THIS DOCUMENT IS TO BE READ IN CONJUNCTION WITH:

ARCHITECT'S DRAWING NO'S:

(SEE REGISTER OF PRODUCTION DRAWINGS)

STRUCTURAL ENGINEERS DRAWING NO'S:

(SEE REGISTER OF PRODUCTION DRAWINGS)

Note:

For structural purposes, where the Architect's and Engineer's drawings are at variance, the Structural Engineer's drawings are deemed to prevail.

BUILDING REGULATIONS 2013 (AS AMENDED)

ALTERATIONS & IMPROVEMENTS AT:

THE COTTAGE, 18 MONMOUTH STREET, LONDON WC2

PART A: **STRUCTURE**

A.1 LOADING

New works will be so implemented that the combined dead, imposed and windloads as sustained are transmitted to the ground safely and without causing such deflection or deformation of any part of the building or such movement of the ground as will impair the stability of the building beyond that already sustained.

The structure of the new modified conservatory roof will comprise new structural glazing components and supporting structure spanning onto existing load bearing masonry walls and new structural supports as indicated, to S/E and Specialist Supplier details and specifications.

New vertical loads from the modified conservatory roof are to be spread and transferred to ground via new foundations as required, designed so that formation levels are no deeper than the existing immediately adjacent foundations of structures in other ownership.

Adequacy of existing foundations to carry additional loads to be confirmed following opening up works on site – additional underpinning to be carried out as required subject to the above.

Intermediate support to other new and existing structures, where required, is provided by new beams, lintels and trimmers as indicated.

Lintel to head of existing window opening to be checked prior to removal of existing window frame and formation of new Bay Window at ground floor level.

New non-load bearing internal partitions to be constructed of sw timber stud, unless otherwise indicated.

If on replacement of existing roof coverings and decking it is discovered that roof structures require repair and/or replacement, then all new rafters and roof joists will be tied back to external walls with galvanized ms vertical & horizontal restraint straps:

- 30x5 @1250 c/c over end three joists for lateral restraint.

- 30x2.5 @ 2000 c/c with 900mm turn down leg for vertical restraint.

Replacement of existing remaining suspended timber basement floors, are to be of in-situ ground bearing concrete (reinforced as required).

A.2 GROUND MOVEMENT

New works to the building will be implemented so that movements of the sub-soil caused by swelling, shrinking or freezing will not impair the stability of any part of any building beyond that already sustained.

Note:

The project Structural Engineer will provide all necessary calculations, details and specifications to justify all beams, joists, trimmers, lintels, posts, floors and foundations, as required to achieve compliance with Regulations A1 & A2

A.3

DISPROPORTIONATE COLLAPSE

It is assumed that the building falls within Building Class1 – Houses not exceeding 4 Storeys (Table 11).

No additional measures required.

PART B: (Vol 1 – Dwellinghouses)

Note:

The property is a single family dwelling unit on three levels accessed via a common parts corridor and with a private open terrace at basement level and is, for these purposes, deemed to fall within the definition of Dwelling House.

B.1 MEANS OF ESCAPE

It is assumed that the building comes under the purpose group of 1(c) Dwelling House which does not contain a habitable storey with a floor level more than 4.5 above Ground Level. (Appendix D. Table D1)

Existing provisions for means of escape comprises a single staircase, open at ground level, delivering to the the dwelling entrance, which opens onto a common parts corridor leading to a final exit.

The first floor is separated from the head of the stair by half hour fire resisting construction and alternative means of escape is provided by a guarded flat roof affording access to the above mentioned common parts.

Two other separate escape routes are possible in different directions more than 45 degrees apart across adjacent roofs to points sufficiently remote to provide refuge from fire

The basement level is separated from the foot of the stair by half hour fire resisting construction and alternative means of escape is possible into adjacent buildings via existing windows and/or ladder rungs leading to adjacent roofs as described above.

Means of escape provisions are to remain as existing and nothing included in the proposed works will result in means of escape provisions being made any worse than as currently exists.

AUTOMATIC FIRE DETECTION & ALARM	Mains powered interlinked smoke / heat alarms incorporating a standby supply are to be provided in all circulation spaces that form part of escape routes and in all rooms or areas that represent a high fire risk to occupants as indicated; in accordance with Para 1.8. Smoke Alarms to BS 5446 : Pt1 : 2000 installed in accordance with B1 / Para 1.10–1.18 Heat Alarms to BS 5446 : Pt2 : 2003 to high risk areas. Standby supply to be provided in the event of a mains failure. Type LD2 / Grade D, in accordance with requirements of BS 5839-6:2004 or the equivalent of BS 5839-1:2002
B.2/3/4 FIRE SPREAD	Fire resistance to new non load bearing elements and for the purposes of means of escape is deemed to be half hour. (Table A1) All entrance doors to new & existing habitable rooms to internal openings within fire resisting construction are to be FD20 min fire resisting, fitted with self closing devices as a non-mandatory option. The new works will achieve half hour fire resistance requirements for elements of structure (Table A2).
EXISTING EXTERNAL WALLS	Existing external walls are elements of structure and are deemed to comply. Modifications to openings to existing external walls as indicated are to be carried out in masonry work to suit the existing fabric.
NEW EXTERNAL WALLS	New external walls are elements of structure and will comply. New Bay Window to be constructed of load bearing timber stud and corner window posts. Apron to be constructed of insulated 100 x 50 sw timber stud @ 400c/c and insulated sheathing finished externally with cement sand render on eml, on battens and breather membrane to match existing OR Code 4 milled lead sheet cladding, on sheathing ply with airspace behind.

STRUCTURAL COMPONENTS	New structural components contributing to the stability of the building as a whole (ie. beams supporting floors) are to be encased in 12.5mm Fireline plasterboard using non-combustible fixings – to provide half hour min fire resistance where not totally enclosed within the fire rated construction.
ROOF CONSTRUCTION	The modified conservatory roof is within 6m of adjacent boundaries and will have AA rating (Table 5) – unwired toughened float glass to double glazed units / fully supported Code 5 milled lead sheet coverings to perimeter box gutters New and existing roofs are within 6m of adjacent boundaries and will have AA rating (Table 5) -three lap natural slate to match existing to primary pitches where roof coverings renewed / fully supported Code 5 milled lead sheet to new Bay Window roof.
SEPARATING WALLS	Separating walls are as existing of continuous masonry construction and are deemed to comply
COMPARTMENT WALLS	Where walls enclose new and existing habitable rooms, they are to provide half hour minimum fire resistance.
CONCEALED SPACES AND	Where new services pass through fire resisting construction or an element of structure, the cavity will be fire stopped by a mineral wool quilt fire barrier, or proprietary intumescent collars, to provide half hour min fire resistance. Where recessed light fittings are to penetrate fire resisting construction, manufacturers instructions are to be strictly followed & suitable precautions implemented to maintain the required period of fire resistance – ie. proprietary intumescent fittings, or in-situ fire resisting boxing.

INTERNAL SURFACES

All internal surfaces of new and refurbished walls, partitions ceilings & sofits are made of one or other of the following materials:

a) British Gypsum plasterboard with 3mm Gypsum plaster skim coat finish.

1no. 12.5 Wallboard to vertical surfaces / 1no 12.5 Fireline to horizontal surfaces – For 0.5 hr fire protection to combustible non loadbearing elements and loadbearing elements of structure contributing to the stability of the building as a whole.

1No 12.5 Wallboard to ceilings & sloping roof sofits (ie. non-fire rated).

b) British Gypsum wet undercoats and finishing plasters to existing refurbished masonry walls and around modified internal and external openings where applicable

c) Ceramic tiles to sanitary and culinary accommodation.

d) Float glass glazing

i.e. All Class O materials.

STAIRWAYS

Existing stairs to be retained are constructed of sw timber with plasterboard linings to sofits.

B.5 ACCESS FACILITIES FOR THE FIRE SERVICE

As existing.

PART C. **SITE PREPARATION & RESISTANCE TO CONTAMINANTS AND MOISTURE**

C1 PREPARATION OF SITE AND RESISTANCE TO CONTAMINANTS

C1.1	CLEARANCE OR TREATMENT OF UNSUITABLE MATERIAL	Not applicable Site drainage as existing.
C1.2	RESISTANCE TO CONTAMINANTS	Site in residential use since mid 18th century approx.
C1.3	SUB-SOIL DRAINAGE	As existing (London clay).

C.2 RESISTANCE TO MOISTURE

C2.6	Roof coverings	Existing roof coverings to be overhauled and repaired or replaced to match: - natural slate to principal roof pitches - milled lead sheet or single ply membrane to box gutters Modified roof to conservatory to comprise factory sealed double glazed units in proprietary aluminium drained and weather sealed glazing bars and Code 5 milled lead sheet covering to perimeter box gutters to fall New roof to Bay Window to be covered with Code 5 milled lead sheet with timber core roll joints. New roofline windows to existing flat and pitched roofs to be installed with proprietary pressed metal flashings to suit roof covering All non-proprietary flashings to be of Code 4 lead min.

	Condensation	New modified conservatory roof lantern to be of factory sealed double glazed units in thermally broken proprietary aluminium glazing bars. New and existing flat roofs to be (re) covered with lead sheet or single ply membrane fully supported on timber decking to fall with 50mm ventilated void between underside of decking and top of insulation board placed between and below joists. The existing principal pitched roofs are to be re-covered with natural slate and a breathable sarking membrane (Kingspan Nilvent or similar approved) laid across the top of the rafters. 25mm min air gap between breather membrane and under side of roof covering, with new PIR insulation board laid between and below existing rafters (unventilated warm roof construction). All existing re-lined first floor ceilings / sloping sofits to be lined with proprietary vapour control layer with all joints, taped and sealed.
C2.4	New ground bearing conc floors	Ground bearing floors to Basement to comprise: 75mm - 65mm min cement / sand screed, on under floor heating matrix where applicable, on 500g polythene vapour control layer, on 75mm nom thick insulation board, on 100mm min thick in-situ conc slab (reinforced to S/E spec), on 1200 nom gauge polyethelene dpm (Visqueen or similar approved) turned up at perimeter and linked to waterproof wall render, on 20mm sand blinding, on 150mm min sulphate free consolidated hardcore, on prepared and compacted earth (all to replace remaining suspended timber floors).
C2.5	Existing Walls	Injected horizontal and vertical chemical dpc's and waterproof rendering to be installed at basement level in accordance with Specialist Subcontractor Survey & Report. Copings to existing raked parapet walls (to principal pitched roof) to be overhauled & repaired or replaced with new projecting and throated conc copings on lapped and bonded polymeric dpc. New proprietary coping weathering to be installed to parapet walls at main roof level as part of single-ply membrane re-lining to existing box gutters.

PART D: **CAVITY INSULATION**

Not applicable.

PART E: **AIRBORNE AND IMPACT SOUND**

E.1 SEPARATING WALLS — As existing.

SEPARATING FLOORS — Not applicable.

E.2 INTERNAL WALLS AND FLOORS

New internal partitions to be constructed of 100 x 50 sw timber stud @ 400mm c/c with 15mm min plasterboard and skim finish to all faces (10kg/sqm min mass per unit area) and 25mm min mineral wool insulation to cavity (10kg/cum density, providing laboratory airborne sound reduction of 40 Rw dB min (Type B Internal Wall / Section 5 / Diag 5-2)

Existing timber stud partitions at first floor level between existing Bedrooms and refurbished en-suite Bathrooms are to be upgraded to meet the performance of new internal partitions as specified above.

Where extensive areas of defective floor decking & ceiling finishes are required to be replaced, then the existing timber joisted upper floors are to be upgraded to meet the performance for new internal floors as follows:-

Wood based board decking (15kg/sqm min mass per unit area) and plaster (board) soffit (10kg/sqm min mass per unit area) with 100mm min thick mineral wool insulation between joists (10kg/cum density) to provide laboratory airborne sound reduction of 40 Rw dB min (Type C Internal Floor / Section 5 / Diag 5-7).

On site testing of walls and floors to verify performance is not a requirement for these purposes.

PART F: **VENTILATION**

F1(1) MEANS OF VENTILATION

There shall be adequate means of ventilation so that adequate supply of air may be provided for people in the dwelling.

Ventilation is to be provided by a System 1 installation, comprising background ventilators and intermittent extract fans.

NEW ACCOMMODATION

Ventilation to be provided by background ventilators with min openable area of 5000sqmm to habitable rooms and 2500sqmm to wet rooms. Ventilators to be 0.5m min from any extract fan within the same room

10mm air gap below doors for input air to mechanical extract ventilation and cross circulation to whole building ventilation.

Purge ventilation direct to external air to be provided at a min rate of 4 air changes per hour. Ventilation to habitable rooms to be provided by opening doors and windows whose openable area is not less than $1/20^{th}$ of the floor area of the room served ($1/10^{th}$ for windows opening less than 30 degrees).

Purge ventilation to wet rooms to be provided by openable windows (no minimum size) where applicable and by extract ventilation as specified below to internal wet rooms.

INTERMITTENT VENTILATION

Intermittent extract ventilation to be provided to wet rooms and sanitary accommodation as follows (Table 5.1a):

Kitchen – 30l/s adjacent to and above cooking surface
60l/s elsewhere

Bathrooms – 15l/s not more than 400mm below ceiling

Laundry – 30l/s not more than 400mm below ceiling

Toilet – 6l/s not more than 400mm below ceiling

	Extract fans to be operated manually and / or automatically (humidity controls not to be used for sanitary accommodation) with a manual override and 15 minute over run to rooms with no openable windows where applicable. Fans to internal rooms to be operated from the main light switch where applicable.
AIR FLOW RATE TESTING	No requirement (new dwellings only).
F1(2) COMMISSIONING	The person carrying out the work shall, no later than 5 days after completion of the work, give sufficient information to the owner regarding the ventilation system and its maintenance requirements to enable the system to be operated so as to provide adequate means of ventilation. No later than 5 days following completion of Commissioning works, notice to that effect shall be served on the LA in accordance with Regulation 15(4) or no more than 30 days where the works have been carried out & self certified by a member of an approved Competent Persons Scheme.
PART G:	
G.1 COLD WATER SUPPLY	The existing installation for the provision of wholesome or softened wholesome cold water is to be upgraded within the refurbished building that is reliable, with a pressure and flow rate sufficient for the operation of sanitary appliances planned in the building and which conveys water to appliances without waste, misuse, undue consumption, or contamination of wholesome water. The water is to be provided by the existing Statutory Water Undertaker or a licensed water supplier, or from a source complying with the Private Water Supplies Regulations 2009 (SI 2009 / 3101).

The installation is to convey wholesome water to any place where drinking water is drawn off and wholesome, or softened wholesome water to:

a. Any washbasin or bidet provided in, or adjacent to, a room containing a sanitary convenience

a. Any washbasin, bidet, fixed bath or shower in a bathroom

b. Any sink provided in any area where food is prepared

The installation is to include for the provision of water of suitable quality to any sanitary convenience fitted with a flushing device.

G.2 WATER EFFICIENCY

Reasonable provision is to be made in the design of cold and hot water systems to ensure that the installation of fittings and fixed appliances uses water efficiently for the prevention of undue water consumption and to facilitate an estimated consumption of wholesome water of not more than 125 litres / head/ day.

A notice specifying the potential consumption of wholesome water (per person, per day) calculated in accordance with the Water Efficiency Calculator for New Dwellings and taking into account the use of alternative sources of water, is to be provided to the BCB not later than 5 days from the completion of the Building Work.

The building owner / occupier is to be provided with a record of sanitary appliances, white goods and alternative sources of water used in the above water consumption calculation and installed / supplied to the dwelling, along with sufficient other information to enable the building owner / occupier to secure the water efficiency of the building by means of the ongoing maintenance of the building and its services.

G.3 PROVISION OF HOT WATER SUPPLY

1. The building will contain a suitable installation to convey heated wholesome water, or heated softened wholesome water to the following sanitary appliances, without waste, misuse, or undue consumption:

a. Any washbasin or bidet provided in or adjacent to a Room containing a sanitary convenience (wc / urinal)

b. Any washbasin, bidet, fixed bath & shower in a Bathroom

c. Any sink provided in an area where food is prepared.

2. The modified hot water system to the refurbished accommodation contains an existing cistern / expansion vessel, designed, constructed and installed in accordance with BS 6700:2006 & A1:2009 (Systems) and BS 853-1:1996, BS 1566-1:2002 or BS 3198:1981 (Storage Vessels) to resist the effects of temperature and pressure and safely contain the hot water:

   a. During normal operating conditions

   b. Following failure of any temperature control thermostat

   c. During the operation of any safety devices in the event of a reasonably anticipated malfunction.

3. Adequate precautions shall be incorporated into the installation to ensure that:

   a. Stored water does not at anytime exceed 100 degrees centigrade

   b. Discharge from safety devices is safely conveyed to where it is visible and will not cause danger to people in or about the building

      ie. Vent pipe to expansion tank to BS 417-2:1087 or BS 4213:2004 (Vented System)

      2No independent safety devices – non self re-setting energy cut out and combined temperature and pressure relief valve – in addition to any thermostatic temperature control discharging via a tundish located adjacent to the hot water system (Unvented System).

4. Where provided, the hot water supply to any fixed bath will be designed and installed to incorporate an in-line blending valve to BS EN 1111:1999 or BS EN 1287:1999 to ensure that the temperature of water delivered to the outlet does not exceed 48 degrees C.

Gen. Where required, commissioning is to be carried out by a competent person and notice served to that effect to the relevant BCB no later than 5 days after the completion of the commissioning work, or 30 days where carried out by a person registered with a Competent Person Self Certification Scheme.

Note:

Performance Specification for Central Heating & Domestic Hot Water.

An existing primary heat source is to be retained with adequate capacity to serve a domestic hot water installation and space heating system, and to provide domestic hot water at a temperature of 60º C and so as to ensure that the following internal room temperatures are maintained when the external air temperature is minus 1ºC with room air rates of 1 A/C/H:-

	Temp ºC
Bathrooms	22
Receptions/Bedrooms	19 - 21
Kitchens	19
Halls	19

G4. SANITARY CONVENIENCES

1. Adequate and suitable sanitary conveniences appropriate to the use and occupation of the building are provided in bathrooms and other designated sanitary accommodation.

2. Hand washing facilities which are sited, designed and installed so as not to be prejudicial to health are to be provided in all rooms and spaces within which, or adjacent to, is located sanitary conveniences.

3. Rooms containing a sanitary convenience, a bidet, or facilities for washing hands in association with sanitary conveniences, are to be separated by a door from any kitchen or other place used for the preparation of food.

G5. BATHROOMS

A minimum of one bathroom is to be provided containing a fixed bath or shower and a washbasin with a supply of hot water as previously specified.

G6. FOOD PREPARATION

A suitable sink is to be provided within the Kitchen and any other place used for the preparation of food.

PART H: **SANITARY INSTALLATIONS AND DRAINAGE**

H1. SANITARY PIPEWORK & DRAINAGE

Sanitary drainage - all new sanitary pipework and drainage will be installed in such a way as to prevent syphonage of traps and blockage of pipe runs and will contain facilities for the clearance of blockages; all in accordance with H.1 of the current Building Regulations.

See drawings for details of above and below ground drainage runs, pipe sizes and inspection points.

All new above ground drainage pipework to be UPVC or Polypropylene @ 18mm/m min fall.

All appliances will be fitted with 75mm deep seal self – cleansing S or P traps as appropriate.

Internal stubstacks as indicated are to be fitted with air admittance valves.

An existing soil-vent pipe, as indicated, is carried up to atmosphere as vent to head of the drain and terminated at 1.0m min above any adjacent opening into the building – wire cage to terminal.

All below ground drainage and access for cleansing is as existing, to be flushed through and left in good working order

All existing disused drains to be removed or adequately sealed to prevent access by rats or other vermin.

H.2 CESS POOLS & TANKS

Not applicable.

H.3 RAINWATER DRAINAGE

All rainwater drainage as existing, to be overhauled, repaired and upgraded to comply with section H3 of the Building Regulations i.e. surface water from roofs to discharge to existing rainwater outlets & rwp's via gutters of adequate capacity laid to fall.

Existing rwp's to discharge to below ground drainage via existing retained above ground connections.

H.4	BUILDING OVER EXISTING SEWERS		Not applicable.
H.5	SEPARATE SYSTEMS OF DRAINAGE		Existing modified foul water drainage installation to discharge to existing below ground combined drain as indicated. Existing surface water drainage installation to discharge to existing combined below ground drain as indicated.
H.6	SOLID WASTE STORAGE		As existing.

PART J: HEAT PRODUCING APPLIANCES

J.1	AIR SUPPLY	a)	The existing Gas fired boiler is a room sealed appliance served by a through wall balanced flue. (The room in which the boiler is located is a ventilated space).
		b)	A Decorative Fuel Effect secondary heat source is to be provided at ground floor level with combustion air via permanent open vents with a total area of at least 10,000sqmm (Para 11.3 a)
		c)	A clean burn flueless decorative gas fire is to be installed at basement level with 100 -125sqcm free air vent
		d)	The volume of the new Kitchens is in excess of 10cum - no permanent vent required for gas cooker.
J.2	DISCHARGE OF PRODUCTS OF COMBUSTION	a)	The existing gas fired boiler is served by a proprietary horizontal balanced flue to suit – 100mm nom dia.
		b)	The wall mounted flue outlet is as existing to be retained.
		c)	The new DFE gas fire is to be located on a new non combustible hearth and fireplace recess to suite the appliance used in accordance with manufacturers instructions.
		d)	The new DFE gas fire is to discharge to a new twin wall insulated metal chimney terminating at roof level. In accordance manufacturers instructions to suite the appliance served

J.3	PROTECTION OF BUILDING	a)	The gas fired boiler is wall mounted as existing
		b)	New DFE gas fire is to be located on a new non-combustible hearth and fireplace recess – in Accordance with Para's 3.40 – 3.41.
		c)	New clean burn decorative gas fie to be wall mounted in accordance with manufacturers instructions
		d)	All new appliances are to be installed by suitably qualified and registered operatives.
		e)	The person carrying out the work in respect of any hearth, fireplace, flue or chimney construction, shall draw up a report to be given to the client (& Building Control, if so requested) to show that materials & components used are appropriate to the intended use and that flues have passed the appropriate tests (Ref Appendix A for checklist and sample report).
		f)	All new appliances in connection with the above to be installed by suitably qualified and registered operatives in accordance with applicable current British & European Standards & Codes of Practice.
J.4	PROVISION OF BUILDING INFORMATION		Notice plates providing information essential to the correct application and use of the new hearths and flues shall be provided in accordance with Para 1.7– 1.9
J.5	PROTECTION OF LIQUID FUEL STORAGE SYSTEMS		Not applicable
J.6	PROTECTION AGAINST POLLUTION		Not applicable.

PART K:

K.1

S1	STAIRS & LADDERS	a)	All stair flights as existing to be retained.
		b)	Replacement stair hand rails will conform to Para 1.34: - 900mm above pitch line - 1100mm above floor level
		c)	Replacement guardings will conform to Para 1.38 – 1.41 and Diagram 3.1: - Ballusters @ 100mm c/c max - strength @ 900mm above floor level to BS EN 1991-1-1 with UK national Annex & PD 6688-1-1
S2	RAMPS		Not applicable
K.2	PROTECTION FROM FALLING		- As b) & c) above. - All cill heights to new windows above ground level are to be not less than 800mm above adjacent floor level. - Guardings to Juliette Balcony to be 1100mm from adjacent floor level to top of guarding & designed to resist min loads as c) above.
K.3	VEHICLE BARRIERS & LOADING BAYS		Not applicable.
K4	PROTECTION AGAINST IMPACT FROM GLAZING		Toughened or annealed safety glass to be installed to: - New glazed doors up to 1500mm above adjacent floor level (min). - Inner pane of double glazed roof glazing & roof lights. - Any other glazed elements within 800mm of the adjacent floor level.

K5

1.	PROTECTION FROM COLLISION WITH OPEN WINDOWS	Not applicable.
2.	MANIFESTATION OF GLAZING	Not applicable.
3.	SAFE OPENING AND CLOSING OF WINDOWS ETC	Not applicable.
4.	SAFE ACCESS FOR CLEANING WINDOWS ETC	Not applicable.
K6	PROTECTION AGAINST IMPACT FROM TRAPPING BY DOORS	No requirement

PART L: CONSERVATION OF FUEL AND POWER

L.1B EXISTING DWELLINGS

Extensions & Material Alterations	New & refurbishment works will be carried out to make reasonable provision for the conservation of fuel and power in respect of limiting heat gains and losses, providing and commissioning energy efficient services and controls and providing sufficient information to enable the building to be operated in an energy efficient manner.

a) Building Fabric

U values for new & upgraded thermal elements are as set out below and are not to exceed standards for thermal elements – Table 4 – Column (a):

<u>New Timber Frame External Wall – 0.19 W/sqmK</u>

External Finish – cement sand render on eml carrier on sw timber battens
OR
Code 4 milled lead sheet cladding on 15mm external ply sheathing board with 25mm ventilated space behind on sw timber battens
50mm min Celotex GA4000 insulation board
Breather membrane, on 15mm external ply sheathing board
100 x 50 sw timber studs @ 400c/c
50mm min Celotex GA4000 insulation board between timber studs
12.5mm Vapour Check Plasterboard taped and jointed to form VCL / 3mm skim coat finish

<u>New Ground Bearing Floor Slab - 0.18W/sqmK</u>

65mm min cement / sand screed
20mm nom deep under floor heating matrix where applicable
500g Polythene vapour control layer
75mm min Celotex FF4000 insulation board
100mm min ground bearing in-situ concrete slab
1200g nom polyethelene DPM (Visqueen or similar)
20mm sand blinding
150mm min consolidated sulphate free hardcore
(P/A = 0.4)

<u>Existing Upgraded Pitched Roof Loft – 0.13 W/sqmK min</u>

Sealed cold roof:
3 lap natural slate
38 x 25 nom sw tanalised tiling battens to suit
Kingspan Nilvent breather membrane (un-supported)
Softwood timber rafters as existing
100mm Crown Loft Roll mineral wool insulation between existing ceiling joists
200mm Crown Loft Roll mineral wool insulation above and across existing ceiling joists, tucked into sealed eaves
12.5mm Vapour Check Plasterboard taped and jointed to form VCL / 3mm skim coat finish

	<u>Upgraded Pitched Roof Skeilings – 0.13 W/sqmK min</u> Unventilated warm roof: 3 lap natural slate 38 x 25 nom sw tanalised tiling battens to suit Kingspan Nilvent breather membrane (un-supported / 20mm min drape space) 100mm nom extng sw timber rafters @ 400 min c/c 80mm min Celotex GA4000 insulation board between rafters 77.5mm Celotex PL4000 plasterboard thermal laminate to underside of rafters, taped & jointed to form VCL 2.5mm skim coat finish <u>New & Existing Flat Roofs – 0.13W/sqmK</u> Code 5 milled lead sheet / single ply membrane 15mm external ply decking on sw firings @ 1:40 min fall 50mm ventilated void 150 x 50 nom sw timber joists @ 400c/c 150mm min Celotex GA4000 insulation board between joists 77.5mm Celotex PL4000 plasterboard thermal laminate to underside of rafters, taped & jointed to form VCL 2.5mm skim coat finish.
b) Air Permeability	Reasonable steps are to be taken to limit air paths and to seal all junctions between internal and external elements
c) Controlled Fittings	<u>Windows / Rooflights & Doors – 1.4 W/sqmK</u> New Glazed Components Timber frames to new external doors, windows & rooflights Glazing – double glazed 4/16/4 argon filled low-e coating (1.4 W/sqmK U value / Band B WER) Openable Areas – 34.02sqm = 23.6% of total floor area (144sqm) i.e. Not worse than Table 4.

d) Controlled Services

The existing building services are to be overhauled, modified and extended to serve the upgraded and altered accommodation.

Efficiency:
Efficiency of existing Gas fired boiler not less than 90% (SEDBUK rating)

Circulation:
New systems to have fully pumped circulation / bypass to be provided by automatic bypass valve in accordance with manufacturers instructions.

HW Storage:
Hot water is stored in an existing unvented storage vessel in compliance with BS 7206 and insulated to meet the requirements of the Water Heater Manufacturers Association performance specification for thermal stores. The unit carries a label with information in respect of the type of vessel, nominal capacity, standing heat loss and heat exchanger performance.

Preparation & Treatment:
New systems to be cleaned, flushed through and prepared and commissioned to BS 7593 and manufacturers instructions / feed water to boiler to be treated to reduce limescale if water hardness exceeds 200 parts per million.

Commissioning:
New installations, together with associated equipment and controls, to be commissioned in accordance with manufacturers instructions and user manuals issued to the end user.

Commissioning is to be carried out as specified above and notice served on the Local Authority to that effect by a suitably qualified person, no later than 5 days after completion of the work, as required by Regulation 15(4) where applicable.

Alternatively, the works may carried out and Self Certified by a member of an approved Competent Persons scheme & notice of completion of commissioning served on the LA within 30 days of completion of the works.

Controls:
Boiler and other heat source interlock controls to be provided to switch off boiler and other heat sources and pumps when there is no demand for either space or water heating.
2No min space heating zones are to be provided, with separate timing and temperature controls to each (where usable floor area greater than 150sqm).
Separate hot water service zone(s) to be provided in addition to space heating zones.
Space and water heating time controls to be provided by a full programmer with separate timing to each zone.
Separate temperature control of space heating zones to be provided by a combination of room thermostats and TRV's to radiators, where fitted.

Temperature control of stored hot water to be provided by cylinder thermostats and zone valves, or similar equivalent. 2No hot water circuits to be installed with separate timing and temperature controls to each circuit (where usable floor area greater than 150sqm).

Pipework Insulation:
New circulation pipes and pipes connected to hw storage vessels to be insulated and labelled in accordance with the Domestic Heating Compliance Guide throughout their length, subject only to practical constraints and at least 1.0m from the point of any connection to a hot water cylinder.

<u>Under Floor Heating:-</u>

The principal water fed radiant panel space heating installation is to be supplemented by a wet under floor heating system to the Basement accommodation incorporating suitable controls to ensure safe system operating temperatures.

Room temperatures are to be controlled with individual room sensors or thermostats and weather compensating controllers. Ensuite bathrooms sharing a heating circuit with an adjacent bedroom are to be provided with independent heated towel rails or radiators.

The installation is to be divided into at least 2No space heating zones (dwellings with useable floor area greater than 150sqm) with separate timing and temperature controls.

[NB: notwithstanding that the floor screed is not in excess of 65mm thick, it is proposed that the controls will incorporate an automatic set back of room temps at night, or when unoccupied].

The system controls are to be interlocked with heat source and stored hot water temperature controls to ensure that there is no call for heat when there is no demand.

Exposed floors are to be adequately insulated to limit downward heat loss to 10W/sqm max, with insulation below the heated plane having a min thermal resistance of 1.25sqmK/w.

Intermediate floors with heated rooms below are to incorporate thermal insulation to BS EN 1264 Pt4 (0.75sqmK/W min thermal resistance).

Distribution manifolds are to be centrally located and service pipes insulated to minimise distribution losses and overheating of spaces.

Secondary Heating:-

Secondary heating is to be provided by a new decorative fuel effect gas fire to BS EN 509:2000, with a min efficiency (Gross calorific value) of 20%.

The above to be supplemented by additional independent gas or electric appliances to provide a total efficiency (Gross calorific value) of not less than 45%.

All the above in accordance with the Domestic Heating Compliance Guide 2010 and Low or Zero Carbon Energy Sources: Strategic Guide 2006.

e) Mechanical Ventilation

To be provided per Part F (Intermittent extract fans and background vents).

Specific fan power (power divided by extract capacity) to be 0.5 litres/sec.watt or better – Table 3.2

Automatic activation devices and / or local manual switches to be located and installed to avoid operation when not required.

	Terminals to be located to avoid cross contamination with other terminals. Any ducting to be cut to length to avoid flow resistance due to kinks and to be firmly clamped to input and output fittings to avoid leakage. Fans and ancillary fittings to be installed to facilitate occasional cleaning to maintain fan performance. All in accordance with Domestic Building Services Compliance Guide 2010 & Energy Savings Trust good practice recommendations (GPG 268)
f) Lighting	75% (3 in 4) of new fixed lighting provision in excess of 5 circuit-watts are to be light fittings that only take lamps having a luminous efficacy greater than 45 lumens per circuit-watt & total output greater than 400 lamp lumens (ie. fluorescent and compact fluorescent light fittings & lamps). All new fixed external lighting to be not greater than 100 lamp-watts per fitting, automatically controlled with both movement and daylight sensors OR Lamp efficacy greater than 45 lumens per circuit-watt, manually controlled with daylight sensor automatic override.
g) Limiting Solar Gain	Contributions to the effect of solar gain by Internal Gains is to be limited by the use of low energy lighting and the insulation of heating installations as previously specified. All in accordance with Energy Savings Trust design guide (CE 129).
h) Commissioning	All fixed building services installations with accessible plant and equipment is to be commissioned and notice served to that effect on the LA Building Control Body in accordance with Section d) – Controlled Services, as specified above.

j) Providing Information	Operating & Maintenance Instructions: The building user is to be provided with a suitable set of operating and maintenance instructions relating to the building and its fixed building services, to explain how to operate the systems to achieve economy in use, including: - adjustments to timing, temperature and flow control settings - routine maintenance requirements
k) Energy Performance Certificate	Not applicable.

PART M: **ACCESS & FACILITIES FOR DISABLED PEOPLE**

M1. Not applicable.

M4. Not applicable.

PART P:

P1 **ELECTRICAL SAFETY**

1. DESIGN & INSTALLATION

The new installation will be low voltage as defined in BS 7671 and will be designed and installed by a competent party in accordance with BS 7671:2008 (incorporating amendment No1:2011), to afford protection against mechanical and thermal damage and to negate electric shock and fire hazards.

Information sufficient to ensure that the installation can be operated, maintained or altered with reasonable safety shall be provided in accordance with BS 7671, to include:

* Installation certificates / reports describing and giving details of the installation and works carried out

* Permanent labelling of circuits and equipment, including earth connections and bonds, consumer units and RCD's

* Operating instructions and logbooks

* Detailed plans as required for large / complex installations

2. APPLICATION OF PART P

The works comprise of an installation within a dwelling house and are therefore subject to the requirements of Part P.

The works are hereby notified in accordance with Para 2.5 and Regulation 12(6)A.

On completion, the installation is to be inspected and tested by a competent party to show compliance with BS 7671.

Within 5 days of the completion of the work, the person ordering the work is to be supplied with an electrical installation condition report in accordance with BS 7671 signed by a registered third party certifier, to show that the electrical installation work has been inspected to verify that components have been selected and installed in accordance with the relevant British or harmonised European Standards and tested to check satisfactory performance in all respects.

Within 30 days of the issue of the above, the registration body of the third party certifier is to provide the occupier with a Building Regulations Compliance Certificate (to copied to Building Control).

Alternatively, where the works have been designed, installed, inspected and tested by a competent person registered with an electrical self-certification scheme authorised by the Secretary of State, that person is to supply the person ordering the work with a Building Regulations Compliance Certificate (to be copied to Building Control) along with an Electrical Installation Certificate to BS 7671, within 30 days of the completion of the work.

3. CERTIFICATION, INSPECTION AND TESTING

If neither of the two above processes is to be followed, then the installer is to notify Building Control who will take the necessary steps to carry out inspection and testing as required and thereafter issue the occupier with a Building Regulations Completion Certificate and make the appropriate inspection fee charge.

Note:

Where installation works are not notifiable, the person ordering the work is to be supplied with the appropriate forms in accordance with BS 7671 signed by a competent person to show that the electrical installation work has been inspected to verify that components have been selected and installed in accordance with the relevant British or harmonized European Standards and tested to check satisfactory performance in all respects.