



# CONSTRUCTION PLAN

The appointed contractor is to allow for :-

- careful demolition of the existing conservatory incl. removal of existing foundations
- a contingency sum for any possible additional foundation/drainage works.

**FOUNDATIONS**  
The existing ground within the extent of the proposed building construction site shall be cleared of all turf and vegetable matter prior to any further excavation being made. Method of disposal of any contaminated soil to be agreed with the Local Authority Environmental Officer. Any demolition works shall be carried out methodically and systematically with due consideration of adjacent grounds and buildings. The disposal of debris shall be actioned via skips and approved/licensed environmental/recycling centres. Foundation trenches shall be clean, true and checked for soil areas, water etc. and left with compacted bottoms. Foundations shall be located centrally under external and load bearing internal walls. All foundations shall be designed with due regard to subsoil conditions, water table, presence of sulphates and previous ground use etc. Depth and design to Local Authority requirements and subject amendment when site conditions have been fully investigated. Mass concrete (1:2:4) strip foundations 600mm x 200mm deep. Depth of foundations to be determined on site but a minimum 600mm cover to G.L. and/or depth of existing foundations within 1000mm of a drain to be taken down to invert level minimum. Concrete to be Grade C19P to BS 5328 (1:1:6) using OPC cement and 20mm nominal maximum size of aggregate.

**EXTERNAL CAVITY WALLS**  
Outer skin to comprise 100mm thick matching facing bricks (75mm high) (to be agreed with client) laid in matching mortar (1:1:6 cement, lime & sand) and bonded with strack joints with 100mm wide cavity and 100mm thick Cektex Solar (or similar approved) blockwork inner skin (2.8N/mmsq), laid to existing or abutted to Cantic 'Stronghold' stainless steel (or similar approved) extension ties plugged and bolted to existing brickwork. 7N/mmsq, Cektex Trench Blocks, or similar approved, 300mm wide up to within 300mm of DPC.

The cavity is to be filled with a lean mix concrete up to a level of 225mm below DPC and is to be laid with sulphate resistant mortar. Provide perpand weep holes every 4th vertical joint in the outer leaf at the base of the cavity at 150mm below DPC. The cavity is to be closed at all window and door openings using proprietary cavity cover 'Thermabater' or similar approved, installed in accordance with manufacturer's instructions and at eaves level with blockwork. Maintain a continuous cavity between new and existing walls. Skins to be tied together with 25mm long proprietary galvannead wall ties and integral insulation retaining clips. These ties are to be spaced at 900mm centres horizontally and 450mm centres vertically and at 225mm centres at openings. Provide additional ties within 225mm of side of openings at no more than 300mm centres. Ensure cavities are kept free from debris, by approved method, as works proceeds. Vertical DPC to be provided at all un-bonded joints. The horizontal damp-proof course shall consist of a layer of 2000 gauge polythene damp course to B.S. 743/6515 adequately lapped at corners and joints on a mortar bed maintaining a min. 150mm above adjacent ground level. 150mm laps to be provided with any existing DPCs. Ensure that DPCs do not project into the cavity. Where external wall cavity is bridged i.e. air brick/Ventilator openings and meter cupboards etc. provide polythene cavity trays complete with stop ends over in the external wall with open proprietary perpends. Provide polythene lapped and continuous cavity trays with stop ends above all lintels and over short piers between closely spaced openings. Provide open perpends or PVC perpends at 300mm centres minimum 2no. per opening. Cavity trays are to project 150mm beyond either side of lintel/opening. At all low roof abutments ensure stepped cavity trays with stop ends are provided and linked to Code 4 lead flashings and soakers. Code 4 lead crossed beneath cavity trays and over roof slopes with alternate perpends left open for weep holes all as necessary to form weep proof junction. Structural openings to be supported using Cantic Lintels for similar approved as per the Lintels Schedule using galvannead B.S. insulated lintels to B.S. EN 10327:2004 with 150mm end bearings to both ends or resting on concrete padstones. Refer to attached Calc's on-line package for details/specification of the steelworks and jacking methods.

**EXTERNAL SOLID WALLS - BALCONY**  
Skins to comprise 100mm thick matching facing bricks (75mm high) (to be agreed with client) laid in matching mortar (1:1:6 cement, lime & sand) and bond with strack joints with 10mm wide cavity and abutted to Cantic 'Stronghold' stainless steel (or similar approved) extension ties plugged and bolted to new brickwork. Cantic to be on top course. Skins to be tied together with 'Butterfly' proprietary galvannead wall ties. These ties are to be spaced at 900mm centres horizontally.

client) laid in matching mortar (1:1:6 cement, lime & sand) and bond with strack joints with 10mm wide cavity and abutted to Cantic 'Stronghold' stainless steel (or similar approved) extension ties plugged and bolted to new brickwork. Cantic to be on top course. Skins to be tied together with 'Butterfly' proprietary galvannead wall ties. These ties are to be spaced at 900mm centres horizontally.

**EXTERNAL CAVITY WALL INSULATION**  
Knauf Dri-therm Cavity Slab 32 Ultimate 100mm thick, or similar approved, cavity wall insulation batts to provide a min. u-value of 0.28W/m<sup>2</sup>K. Fix batts securely with tightly butted joints, ensuring that all edges are not damaged and that top edges are not damaged and that top edges are covered with a temporary batten to ensure they remain free from mortar droppings and other debris. The cavity wall insulation is to commence below the DPC to avoid cold bridging.

**EXTERNAL/INTERNAL WALLS INTERNAL FINISH**  
12.5mm plasterboard on plaster dabs with 2.3mm thick plaster skim finish ready for decoration.

**SOLID GROUND FLOOR CONSTRUCTION**  
Granular material, free from harmful matter, well graded and passing a 75mm B.S. sieve. Crushed hard rock or quarry waste, not chalk or crushed concrete, bricks or tiles free from old plaster. Average thickness of hardcore bed to be 200mm. Increase thickness as necessary to make up levels and backfill foundation at trench. Hardcore to be thoroughly compacted in layers not exceeding 200mm. Surfaces of hardcore to have a sufficient consolidated layer of 25mm blinding sand to fill interstices and provide a close smooth surface for 1200 gauge polythene DPM to PFA standard 603A, Visqueen Econombreane or similar approved, laid with edges lapped not less than 300mm and turned up the perimeter walls and tucked under DPC to provide a complete water proof membrane. Concrete to be grade C19P to BS 5328 (1:1:6) using OPC cement and 20mm nominal maximum size of aggregate. Concrete floor slab to be 150mm thick with light gauge wire mesh reinforcement in centre. 80mm thick Kingspan Kooltherm K3 Insulation Slabs, or similar approved, overlaid with building paper to BS 1521:1972 (1994) Grade Bif. 20mm Kingspan Kooltherm, or similar

No.	Location	Catic Ref.	Notes
L1	Sun - lounge	C690/100	
L2	Sun - lounge	C690/100	
L3	Sun - lounge	C690/100	
L4	Sun - lounge	C690/100	

approved, perimeter insulation slabs - all to achieve U-value of 0.022W/m<sup>2</sup>K. 60mm thick Isocrete K Screed, or similar approved, to BS8204-1. Screed to be floated smooth and finished flush with existing floor level unless otherwise stated. Falls to be provided within showering area. Maintain ventilation (if required) to existing suspended ground floor with 100mm diameter PVCu pipes laid under new concrete floor and to terminate through the new cavity wall with proprietary 'clay' air bricks (colour to match existing) in conjunction with 'cranked' void ventilators at external walls at max. 2m centres, all to provide a minimum clear air space equivalent of 1300mmsq. per metre run of external cavity wall. Where appropriate, provide air gaps within intermediate masonry sub-structure walls to ensure full cross-ventilation.

**SUSPENDED GROUND FLOOR CONSTRUCTION**  
Granular material, free from harmful matter, well graded and passing a 75mm B.S. sieve. Crushed hard rock or quarry waste, not chalk or crushed concrete, bricks or tiles free from old plaster. Average thickness of hardcore bed to be 200mm. Increase thickness as necessary to make up levels and backfill foundation at trench. Hardcore to be thoroughly compacted in layers not exceeding 200mm. Surfaces of hardcore to have a sufficient consolidated layer of 25mm blinding sand to fill interstices and provide a close smooth surface for 1200 gauge polythene DPM to PFA standard 603A, Visqueen Econombreane or similar approved, laid with edges lapped not less than 300mm and turned up the perimeter walls and tucked under DPC to provide a complete water proof membrane. Concrete to be grade C19P to BS 5328 (1:1:6) using OPC cement and 20mm nominal maximum size of aggregate. Concrete floor slab to be 150mm thick with light gauge wire mesh reinforcement in centre. 80mm thick Kingspan Kooltherm K3 Insulation Slabs, or similar approved, overlaid with building paper to BS 1521:1972 (1994) Grade Bif. 20mm Kingspan Kooltherm, or similar

**DRAIN RUNS UNDER BUILDINGS**  
To be surrounded in 100mm granular fill. On sites where excessive subsidence is possible additional flexible joints should be provided. Where the top of the pipe is within 300mm of the underside of the slab concrete encasement shall be used and integral with the slab. Provide flexible movement joints of compressible board at each pipe junction when encasing in concrete. Where a drain runs through a wall or foundation provide a length of pipe (as short as possible) built with its joints as close as possible to the wall/foundation faces (within at most 150mm) and connected on each side to rocker pipes with a length of at most 600mm and flexible joints.

**PITCHED ROOF CONSTRUCTION**  
100x50mm softwood wallplate bedded to top of internal cavity wall skin and held down with 30x6mm mild steel straps at 1.2m centres (1.2m long) bent at right angles to give a 75mm flang to top of wallplate - note - stepped wallplate for different type of roofs. Vaulted roof - Class C24 38x150mm softwood rafters at 450mm centres birds-mouthed over wallplates and fixed to bearer within ridge purline, all spiked together. Lateral and vertical restraints straps are to be provided to roof members in accordance with BS 5628 from the roof to adjacent parallel walls at maximum 2.0m centres using 30x5mm galvnead steel straps turned down 150mm minimum over blockwork and fixed over solid blocking, to a minimum of three rafters. Knauf 'Breathelime', or similar approved, breather membrane on top of the rafters - breather membrane to B.S. 4016 or Agreement Certified. Roof tiling to match existing, fixed to manufacturer's recommendations. Roof battens to be regularized softwood to B.S. 5534, tanalised - size and fixed as recommended by roof tile manufacturer. PVC verges, fascias and soffits - White - fixed to battens/rafters with softwood battens. 25mm continuous vents to be provided to the trussed roof area.

**RAINWATER GOODS**  
112mm wide PVCu semi-circular section gutters laid to falls to discharge into 65mm diameter round rainwater downspouts - colour to match existing.

**FLASHING**  
Code 4 patinated lead, 25mm deep within brickwork, held in place with lead wedges, pointed in with matching pointing and with 100mm overlaps and over roof finish.

**ROOF INSULATION - CEILINGS**  
Vaulted Ceiling - TLX Silver below rafter in conjunction with 80mm thick Phenolic Board between rafters and with TLX Silver sandwiched between the underside of the rafters and 38mm thick battens, to which the glassboard will be fitted onto. Trussed roof ceiling - 2 layers of quilted insulation - 100mm and 170mm laid between trusses and perpendicular over the 100mm thk. insulation. Separate but linking gull to be laid over the softwood wallplate and wedged into the cavity to avoid cold-bridging and close the cavity. Pack the space between last rafter and gable wall with insulation. Roof to achieve a U-value of at least 0.16W/m<sup>2</sup>K.

**EXTERNAL WINDOWS AND DOORSET**  
Check with Client on openings, colour and U.p.v.c. extrusion/system. Windows to provide min. opening lights equal to 5% of the floor area of the room served and provide min. background ventilation via controlled trickle ventilators to achieve 4000mmsq. in the bathroom and 8000mmsq. to sitting room. All windows for emergency egress to have an operable area of at least 0.53m<sup>2</sup>. and have an unobstructed dimension of at least 450x50mm. The bottom of the operable area should not be more than 1100mm above finished floor level. To be glazed with 28mm (t=20.4) sealed double glazing units ( Pilkington 'K' or similar to achieve lower emissivity of 0.15) with a min. U-value of 1.6 W/m<sup>2</sup>K or centre pane value of 1.2W/m<sup>2</sup>K or energy rating band D. All glass shall be in accordance with BS 6262:1978. Obscure glazing, to be selected by Client, is to be provided to W.C. All windows to be weather stripped. Safety glazing in accordance with BS 6206:1981 shall be fitted in the following critical locations :-

- 1- All glazed doors.
- 2- All full height sidelights.
- 3- Any window within 300mm of a door opening up to a height of 1500mm.
- 4- Any window between finished floor level and 800mm above that level.

**VELUX WINDOWS**  
To be installed in accordance with manufacturer's instructions. To include all proprietary flashings, aprons and vapour barriers. Breather membrane to be carefully cut and dressed in. Provide double rafters and trimmers to all sides of the window. Windows ref. U04 980 hg x 1340 wide ref. GGL or GGU - to be checked with Client for manual or remote controlled operation.

**UNDERGROUND DRAINAGE - ACCESS POINTS**  
Hodding eyes, access fittings, inspection chambers and manholes are to be provided at the following points :-

- a) On or near the head of each drain run.
- b) At a bend and at a change of gradient.
- c) At a change of pipe size.
- d) At a junction unless each run can be cleared from an access point.

450mm PVCu inspection chamber on a 100mm thick concrete base and surrounded with 150mm of pre-shingle for invert-levels of 1000mm or less. Traditional brick built manhole 1200x700mm internal size with a 600x600mm cover for invert-levels up to 2700mm deep. manhole to comprise of 215mm thick engineering bricks on a 150mm thick concrete base. half round vitrified clay channels and swept branches to discharge in the direction of flow and be benched up at least to the top of the outgoing pipe and at a slope of 1:12. Benching should be rounded at the channel with a radius of at least 25mm. Provide step-irons or vertical ladder for depths exceeding 1000mm. Manhole or inspection chambers should have removable non-ventilating covers to be either cast-iron or pressed steel and be of suitable strength. Covers inside buildings shall have mechanically fixed airtight covers.

**INTERNAL WALLS - NON-LOAD BEARING PARTITION**  
140mm thick Cektex Solar (or similar approved) blockwork inner skin (2.8N/mmsq) laid in matching mortar (1:1:6 cement, lime & sand) and bond with strack joints. Note - Visqueen SAM (Self adhesive membrane) to be adhered to wall, on the rear, below the upper floor level. 12.5mm plasterboard on plaster dabs with 2.3mm thick plaster skim finish ready for decoration.

**ARCHITRAVING/SKIRTING/DOORSETS**  
Architraving/skirting/doorsets matching to Client's selection, wherever possible, softwood, nailed/plugged and screwed to backgrounds, prepared to receive paint finish.

**ELECTRICAL INSTALLATION**  
Discuss/check with Client re. light fittings/sockets and locations. To be in full accordance with BS 7671:2001 and with the latest edition of the IEE wiring regulations and should be carried out in accordance with current installation techniques applicable to the material and equipment being used. All electrical works shall also comply with the Building Regulations Part P.

All cables which are covered or surrounded with thermal insulation to be de-rated in accordance with Appendix A of BRE Thermal Insulation: Avoiding Risks 2002 Edition. Down-lighters in ceiling voids are to be either boxed in with 12.5mm plasterboard or fitted with an intumescent cover to maintain half hour fire resistance. Services and fittings within the roof space are to be protected from overheating. Lighting circuit cables to be 1.50mm. minimum where within insulation - all other cables runs to be supported by and clipped to roof timbers and be kept clear of insulation. External light fittings should have automatic controls, and/or be capable of only taking lamps having a greater efficacy of greater than 40 lumens per circuit watt. Installations should be tested at the end of installation before they are taken into service to verify that they are safe and that they comply with BS 7671:2001. This report shall be signed by a competent person who should be a Corporate Member of the Institution of Electrical Engineers (IEE) or with the National Inspection Council for Electrical Installation Contracting or Electrical Contractors Association. The report should show that the installation has been :-

Inspected and verified that the works are in compliance with the appropriate BS and not visibly damaged or defective so as to be unsafe. Tested to check satisfactory performance in relation to continuity of conductors, insulation resistance, separation of circuits, polarity, earthing and bonding arrangements, earth fault loop impedance and functionality of all protective devices including residual current devices.

Such works on the existing fixed electrical installation in the building as are necessary to enable the additions and alterations, the circuits which feed them, the protective measures and the relevant earthing and bonding systems to meet the requirements. Establish that the mains supply equipment is suitable. Efficiency light fittings are to be fitted as per 1 light fitting per 25sqm. of floor area or 1 energy light fitting per 4 light fittings, whichever is greater. Such fitting are fluorescent tubes and compact fluorescent lamps but not GLS tungsten lamps with bayonet cap or Edison screw bases.

Halls, stairs and landings count as one room but may contain more than one fitting. Efficiency light fittings cannot be located in garages, lifts and outhouses. The exact locations of these light fittings are to be determined on site.

**SMOKE ALARM**  
Smoke alarm unit to BS 5445, Part 1, 1990 and is fitted min. 300mm from light fittings and walls. Alarms must be connected to a separate fused mains electricity supply with a transformer (if needed) and where more than one unit is fitted within a dwelling they must be interconnected. Alternatively, with agreement with Building Regulations Inspector battery operated interconnected units may be fitted.

**CENTRAL HEATING**  
Existing central heating system to be extended into new room in accordance with BS 5449 as per client's request. radiator/towel warmer to be fitted with thermostatic valves and to match with existing wherever possible and/or to the client's requirements. Domestic hot water distribution pipes to be insulated with wrap max. 0.045W/m<sup>2</sup>K. Where cold water pipes in roof spaces, all cold water service pipes, and all central heating pipework, not contributing useful (designed) heat, to be insulated to BS 5422:1990.

New replacement/relocated boiler to be condensing boiler with a minimum SEDRUK A rating of 86% (Worcester Bosch G37 or similar approved with flow rate to supply two shower mixers) with appropriate controls and radiators, fitted with thermostatic valves, via copper distribution pipework. Primary pipework must be copper but flexible pipework may be used for heating distribution, where concealed, but only with prior written approval of the heating engineer and the Client. The proprietary flue is to be installed strictly in accordance with the manufacturer's instructions. Flue to be provided with a protective cow. Position of flue outlets to comply with part 1 of the Building Regulations and is dependent on the type of appliance and appliance rating. All gas installations to comply with the British Gas Council recommendations and the acceptance of the relevant Local Gas Authority.

**PAINTING & DECORATING**  
1 ct. primer to all walls and discuss with Client on colour and paint finish as well as extent. 1ct. primer (after knotting), 1 ct. u/c & 2 cts. gloss to all new woodwork.

**FLOOR FINISH**  
Discuss with Client on type/colour/pattern for the extension.

**HARD LANDSCAPING**  
Discuss with Client any flagging/making good works to be carried out. Note : check with Client on the Decking finish - 50mm thk. P.C.C. flagging laid on 25mm thk. sand bedding laid on 150mm MOTFS compacted aggregate.

**BALCONY RAILING**  
Discuss with Client type to be installed - coated metal, glazed or timber. To be installed to achieve overall height of 900mm above finished ground level of decking. To be installed in accordance with manufacturer's recommendations.

**Notes**  
All works to be in accordance with the current Building Regulations and British Standards, and to the satisfaction of the Building Control Officer/inspector and Planning Officer where applicable. Details may be subject to change at the request of the Building Control Officer/inspector.  
The Contractor is responsible for checking all dimensions on site prior to commencement and during the duration of the works with any errors brought to the attention of the client as soon as possible.  
The Contractor shall inspect the property being worked on, all grounds, adjoining properties, public highway, surface and underground services which may be affected by the works and record and report to the Client any defects.  
The Contractor shall be entirely responsible for the security, strength and stability of the building(s) during the course of the works which is to include carrying out investigations of the existing structure(s). The Contractor shall allow for the protection of existing groundworks including paving, plants and landscaped areas, and to existing fixtures and fittings, by the use of dust sheets, screens etc., and is to make good any damage to their own exposure. The site is to be kept in an orderly manner and cleared/checked up at the end of each working day.  
All relevant security precautions and protection, including against the weather, is to be afforded at the end of each working day. The Contractor is to allow for any liability claims against themselves.  
All materials are to be used and installed in accordance with the relevant manufacturer's instructions and recommendations. The quality of any materials shall be no lower than that defined in the relevant British Standard, current Agreement Certificate or that the material has been satisfactorily assessed by an appropriate independent authority and/or 'CE' marked. (Sanitary auxiliaries and fittings, electrical fittings and locations, and radiators to be at the Client's requirements. All skirting/architraving to match existing or subject to Client's agreement. All ceiling, walls and floor finishes to Client's requirement. All paint types and colours to Client's requirements.  
All Certificates, including the Building Regulations Notice and Electrical, Gas and Heating together with all Warranties to be handed over to the Client upon completion of testing/commissioning.  
Refer to dwg. S01 for details of Sections A - A and B - B.  
Refer to the attached Calc's on-line Structural Engineer's Specifications/Details for the steelworks.  
Roof pitches to be confirmed on site prior to any assembly.

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Rev.	Description	Date	By



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Project	Client
Proposed Demolition of Conservatory & Constr. of Single Storey Extension in lieu. Construction Plan & Specifications.	Mr. I. Howarth & Ms. M. Evans. Address 12, Alnwick Dr., Hollins, Bury, BL9 8BZ.
Date 10.12.14.	Drawing no. CSP01
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