1.0 General
It is deemed that all materials and equipment supplied and/or installed within the works will be supplied and installed to the requirements of all relevant British, European, and Warranty Standards and will accommodate manufacturer'fs recommendations and instructions.

Concrete shall be specified correctly to ensure adequate strength and durability. Designated mixes to conform to Table 5 of BS 8500-2:2012. Chemical and mechanical resistance requirements to be considered fully and designated mixes to be specified by Consulting Engineer for all sub structure concrete requirements.

Building work shall be carried out with adequate and proper materials which are appropriate for the circumstances in which they are used, are adequately mixed or prepared and are applied, used or fixed so as adequately to perform the functions for which they are designed.

Structural design shall be carried out by suitably qualified persons in accordance with British Standards and Codes of Practice.

All foundations to comply with the requirements of Approved Document Part A1/2 Loading and Ground Movement; Section 2E: Foundations of plain concrete of the Building Regulations 2004 edition (incorporating 2004, 2010 and 2013 amendments)

2.0 Floor Construction

Constructed in accordance with Approved Document C, Section 4 and installed to consultant engineers designs and details.
Topsoil containing roots and vegetation to be removed and weed killer applied to the stripped out soil. Below ground fill shall be suitable to support ground bearing floors without undue movement. Precautions should be made to ensure that made ground and fill materials are free from harmful or toxic substances. Where sulphates or other chemicals are present in the ground, concrete to the floor slab should be of the appropriate mix to resist attack and be protected from moisture under the slab by an impervious layer of 1200g polythene sheet, with all joints lapped and sealed at least 300mm where necessary. Where expansive materials are present, a suspsended floor system should be specified.
Floor construction to consist of the following build up;

- 150mm minimum well compacted hardcore with 50mm uniformly thick sand blinding
- 1200 gauge min. damp proof membrane to extend around the concrete slab, up the inner face of the cavity and dressed under inner leaf of blockwork in line with DPC to external leaf of brickwork at 150mm above external ground level
  Refer to site specific geotechnical report for any uplift required in DPM / Gas Protection Membrane
- 25mm thick batt insulation tightly butting the blockwork wall to perimeter of floor slab
- 100mm thick RC32/40 Concrete floor slab to consultant Engineers design for any reinforcement with power float finish

Ground bearing slabs should not be continuous through the cavity party wall.

3.0 Surface Water Drainage

The installation of rainwater goods shall be in accordance with manufacturer instructions and to Approved Document H3.

Each downpipe to serve a Max. 37m² effective roof area and a flow capacity of 0.78 litres/second.

4.0 Construction Below DPC

3.6 N/mm² insulite dense concrete blocks meeting a min 1500kg/m3 density (100 x 215 x 440).

Cavity wall to extend min. 225mm below lowest damp proof course or a cavity tray to be provided with weepholes at 900mm centres.

Mortar mix 1:1:5 1/2 cement:lime:sand with plasticizer as a minimum.

Cavity to be filled with lean mix concrete to a level 225mm below underside of the ground floor slab.

Cavity wall insulation to be taken to a min of 215mm below ground floor construction as below in line with Constructive Details prepared for Aircrete Products Asscociation.

5.0 Construction Above DPC - U Value 0.24w/m²k TBC

Ancon Cavity wall starter kits to be used where proposed brickwork meets existing.

Blockwork inner leaf Tarmac Durox Supabloc (or similar approved) 3.6 N/mm² (Thermal conductivity value 0.11, min. density 460kg/m3) OR Tarmac Toplite Standard (or similar approved) 3.6 N/mm² (Thermal conductivity value 0.16, min density 630kg/m3)

100mm blockwork inner leaf to suit storey heights as above with 100mm insulated cavity

Cavity to be fully filled with 125mm kingspan kooltherm to meet the above U value. or similar approved

102.5mm facing brickwork to match existing - matching soldier courses to door/window heads.

Wall ties to be Stainless Steel Type 4, 225mm long with a minimum embedment depth of 50mm in both leaves with the tie either level or sloping downwards to the outer leaf in external cavity walls.

Wall ties to be spaced maximum 900mm centres horizontally and 450mm centres vertically, staggered on alternative courses. Ties to be positioned at 300mm vertical centres within 225mm of reveals to openings and tops of gable walls.

DPC to be 2000 gauge black polythene in positions indicated on drawing but minimum 150mm above external ground level.

Cavity trays installed above all openings with Minimum 2No weepholes per opening provided at 450mm maximum centres above cavity tray.

All standard opening reveal details to be formed with a flush reveal. Cavities to be closed with proprietary insulated cavity closer at jambs and cill. Internal face of window/door frame to overlap front face of cavity by 30mm. Refer to standard details for further information.

All fairfaced brickwork specified to have a Freeze/Thaw resistant rating of F2 and a soluble salt content rating of either S1 or S2.

Plasterboards generally to use 12.5 mm Knauf (or similar approved) Wallboard on 12.5mm dabs to blockwork walls, with 2.5 mm plaster skim finish.

6.0 Lintels/Steelwork

Lintels and steelwork to be specified by structural engineer.

All lintels manufactured with galvanised steel and coated with black coloured polyester resin finish.

Lintels to all external openings are supplied pre-insulated. Any lintels with a base plate traversing across the cavity will be perforated with an effective conductivity through the base of less than 30W/mK.

Lintels to all openings in external walls installed in accordance with manufacturer instructions, with minimum 150mm end bearings, unless specified otherwise.

Preformed proprietary cavity trays to be installed over all cavity wall lintels with weep holes installed at 450mm centres, all openings should have at least 2 weep holes.

7.0 Doors U Value 1.5w/m²k

All external doors to comply with Approved Document Q. Inherent to our products specified are that they are manufactured to BS publication PAS 24:2012 in most instances and the personnel garage door to BS 3621/8621/10621. All creating securing sets with product certification to part Q compliance. All frame fixings to use steel straps in accordance with manufacturers recommendations.

Door reveals to be built flush with internal face of frame to overlap front face of cavity by 30mm. Cavities to be closed at jambs with proprietary insulated cavity closer. Refer to standard details for more information.

Provide proprietary sealant between the brickwork and frame, plasterboard and frame including cills

Bi-fold doors to be manufactured from Eurocell (Aspect) (or similar approved) PVC-U profile.

11.1 Windows U Value 1.3w/m²k

All ground floor and any easily accessible first floor windows to comply with Approved Document Q. Inherent to our products specified are that they are manufactured to British Standard publication PAS 24:2012. All creating securing sets with product certification to part Q compliance. All frame fixings to use steel straps in accordance with manufacturers recommendations.

Window reveals to be built flush with internal face of frame to overlap front face of cavity by 30mm. Cavities to be closed at jambs and cill with proprietary insulated cavity closer. Refer to standard details for more information.

Provide proprietary sealant between the brickwork and frame, plasterboard and frame including cills.

Windows supplied to BS 7412 (PVC-u) with manufacturers name or trademark and kitemark all marked between the casement and frame.

Windows to all rooms to contain trickle ventilators located in the main frame of the window casement providing background ventilation in accordance with Table 5.2a of Approved Document F1.

All glazing to be in accordance with Part K4 of the Building Regulations 2013 edition and glazing standards – IGU units to BS EN 1279 /BS 5713 with manufacturers name or trademark and kitemark all marked on glass or spacer bar to every unit.
All windows are to be double glazed with Low-E Soft coating to achieve an emissivity of 0.05
Critical locations being between FFL+ 800mm to windows and FFL+1500mm to doors, windows and panels within 300mm of the door to be toughened safety glass.

12. Lighting

100% of all light fittings to be low energy, defined as an efficiency greater than 45 lamp lumens per circuit watt, whilst delivering 400lm.

Fixed external lighting to be either not more than 150W per light fitting and the lighting automatically switches off when there is enough daylight and when it is not required at night or the light fitting have sockets that can only be used with lamps having an efficacy greater than 40 lumens per circuit watt.

All down lights to be positioned at minimum 900mm centres and are 75mm in diameter.

13. Ventilation

The system is designed to operate continuously to provide ventilation rates in line with the requirements of Approved Document F: Ventilation 2010.
Where ceiling mounted fans are necessary 100mm flexible ducting from fan to suitable tile or wall vent to external air.

Ductwork should be insulated where it passes through unheated areas and voids (eg Loft spaces) with the equivalent of at least 25mm of a material having a thermal conductivity of <0.04w/m²k to reduce the possibility of condensation forming. Where a duct extends above roof level the section above the roof should be insulated or a condensate trap should be fitted just below roof level.
Ventilation systems MUST be fully commissioned and tested for design air flow and a signed compliance document issued by installer.

14. Below Ground Foul Drainage

Proposed SVP Foul drainage to tap into existing
drainage system.
All drainage to be laid to regular falls to pre designed invert levels, on a granular bed. Drains under buildings are to be surrounded in free flowing granular material. All pipe runs to be designed and laid to avoid damage and blockages.

Drains passing through foundations or walls, to have either a lintel over the opening to give 50mm space all round the pipe. Mask opening on all sides with rigid sheet material to prevent entry of fill or vermin. Granular backfill around pipe. OR short length of pipe bedded in wall, with joints formed within 150mm of either wall face. Flexible material to be provided around pipe. Adjacent rocker pipes to be provided to a max length of 600mm, fitted with flexible joints.

15. Above Ground Foul Drainage

Traps; Bath, shower and WC pans to be fitted with minimum 50mm deep seal traps. All other fittings to be fitted with minimum 75 mm deep seal traps.

Waste pipes to be provided between all attached appliances, sanitary fitments soil pipes, roddable back inlet gullies as shown on drawings. Minimum waste pipe size and lengths to be

- WC - 110mm diameter, branch pipe maximum 6m long, gradient between 18 & 90mm per metre.
- Basins - 32mm diameter, branch pipe maximum 1.7m long, gradient between 18 & 22mm per metre.
- Sinks - 40mm diameter, branch pipe maximum 3m long, gradient between 18 & 44mm per metre.
- Sinks - 50 mm diameter, branch pipe maximum 4m long, gradient between 18 & 44mm per metre.
- Basins, Bath, Washing machine, Dishwasher - 40mm diameter, branch pipe maximum 3m long, gradient between 18 & 44mm per metre.
- Baths, Washing machine, Dishwasher - 50mm diameter, branch pipe maximum 4m long, gradient between 18 & 44 mm per metre.

Any access points should be fitted above the spill over level of all the appliances. External svp'fs to be fitted with a cage. Internal svp'fs to be taken up through roof space and terminated with a tile or ridge vent.

All internal SS and SVP to be surrounded with min 25mm insulation and encased with 2 x layers of 12.5mm plasterboard and 2.5mm skim finish.

SVP at ground floor to be 12.5mm Promat Superlux or Masterboard to be fixed with countersunk M4 screws at 200mm centers with all joints filled with moisture resistant filler. Superlux/ Masterboard to be finished with 2no. coats of white masonry paint (1st coat used as primer). Set on 50x50 timber frame.
DPC TO BE LAID BETWEEN SVP BOXING AND BRICKWORK PLINTH

All bathroom taps to be fitted with a water mixer valve to ensure the temperature of the water output does not exceed 48degC. Valve to be installed as close to the final outlet as possible to prevent the colonisation of waterborne pathogens.

16. Upper Floor COnstruction

22mm Egger Peel Clean XTRA (or similar approved) chipboard moisture resistant to BS7331:1990 or BSEN312 part 5:1997 tongued and grooved flooring panels laid staggered in a brick bond pattern. All boards fixed to joists in accordance with manufacturers instructions. Support noggins are required at all floor perimeters where unsupported edges abut a wall and where boards overhang joists.

Steico (or similar approved) - Engineered Timber 'el'f joist (Typically 240mm deep) system to be laid in accordance with manufacturer'fs recommendations with all installation details in line with the Steico Masonry Construction Guide that is supplied to site with the delivery.

Do not cut or notch into either top or bottom flange. Any access and service hole positions to fully adhere to the rules prescribed in the Steico Masonry Construction Guide.
Joist to be built in to cavity walls, with web stiffeners and finished with silicone mastic seal. Min 38x38mm perimeter noggins skew nailed to joist with 25-75mm spacing away from face of blockwork. Masonry hangers must sit directly onto a masonry wall and should always be seated against a vertical face.
Floor joists tied into masonry using 30 x 5 x 1200mm galvanised mild steel restraint straps at Max. 2m centres when runs are parallel to outer walls and taken over three floor joists. Blocking to be full depth I joists or solid timber to half the depth of the joist.
Support for internal partition walls running parallel but not directly over joists to be provided with 38 x 75mm noggins fixed between joists using z-clips.

Floor voids above walk through/carport to have 250mm Knauf Loft roll 40 (or similar approved) thermal quilt fitted between floor joists to the full garage area.
9mm Promat Superlux or Masterboard to be fixed with countersunk M4 screws at 200mm centers with all joints filled with moisture resistant filler.

17. Cold Roof Construction - **U Value 0.24w/m²k**

Concrete interlocking tiles fixed strictly in accordance with manufacturer'fs instructions. All ridge and hip tiles to be mechanically fixed and tiles secured and clipped to exposure rating recommended by manufacturer, fixed to 50 x 25 mm factory graded/ treated softwood battens to BS5534, batten joints should always be staggered, on breathable roofing membrane (Croma Vent 3 / Protec VP 300 or similar approved), draped 10-15mm between rafters with min horizontal lap <15 deg-150mm, 15-35 deg 100mm, >35 deg 75mm, all other details in accordance with appropriate manufacturers recommendations.
Roof tied into masonry using 30mm x 5mm mild steel anchor tie straps to gables at maximum 2m centres over three rafters and bottom chords, or as otherwise instructed by engineer or roof manufacturer.
Noggins should be provided between rafters at lateral restraint strap positions. Grade C16 timber to be used for all structural elements.
Roof Insulation to be 100mm thick Knauf (or similar approved) Earthwool Loft Roll 44 rafter roll laid between trusses with 2 additional 150mm thick Knauf (or similar approved) Earthwool Loft Roll 44 layers cross laid over, (Total 400mm thick) making sure there are no air gaps, and taken through to eaves so as to meet up with cavity wall insulation.
Minimum 50mm clear ventilation void to be maintained between loft insulation and roof felt at eaves to ensure adequate cross flow ventilation.
15mm Knauf (or similar approved) Wallboard finish to underside of trusses with skim coat finish.
Support noggings are required at all ceiling perimeters to avoid unsupported edges.
Roof space to be ventilated by continuous ventilators 10mm wide at eaves and by 5mm wide continuous ventilators at ridge level. Ventilation openings should prevent the entry of birds, etc.
All timbers to be treated against fungal decay and insect attack as necessary.

Eurocell fascia and soffits to match existing.

Revisions

rev.	revision	dr	chkd	date
A	Layout updated to suit client comments.	MB	-	06/21

Note :
- Do not scale. Only use figured dimensions.

Proposed Extension, Ivy House, Town Street, Cottam, Retford, DN22 0EZ

Construction Details — drawing.

NTS (scale.)	August 2022 (date.)	MB (drawn by.)	(chkd by.)

SK/22-11/** - (drawing no.)