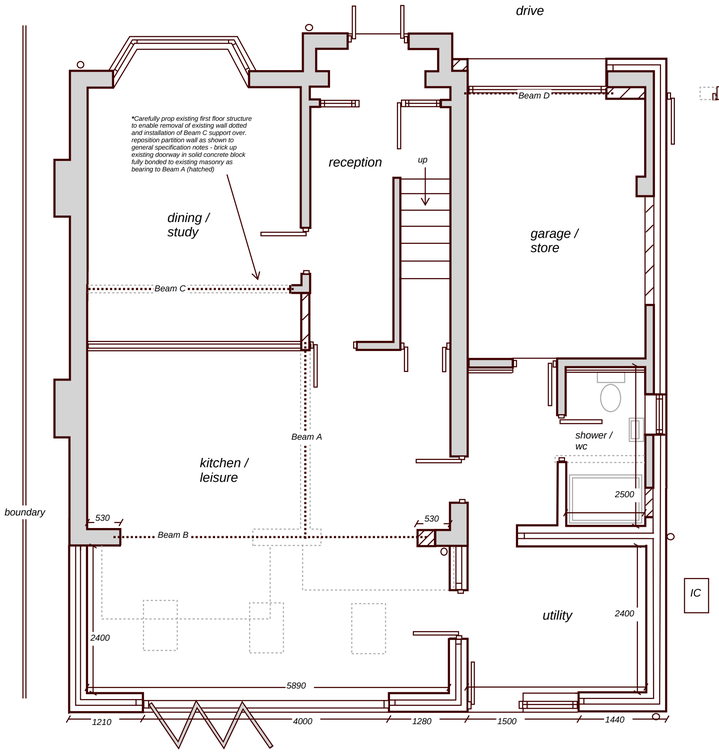
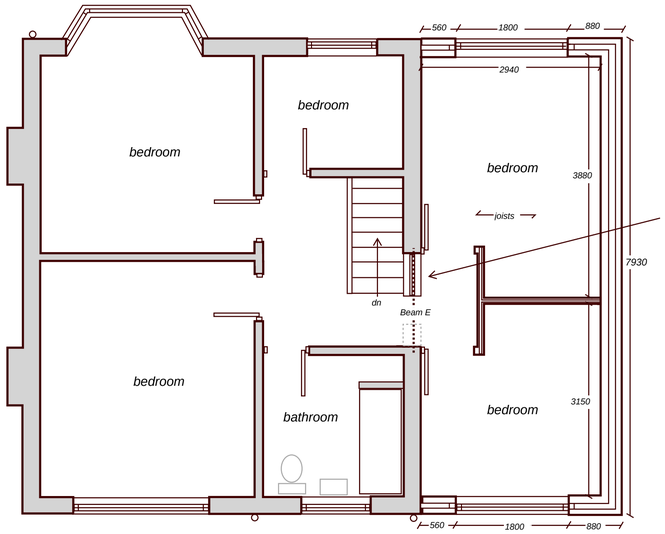
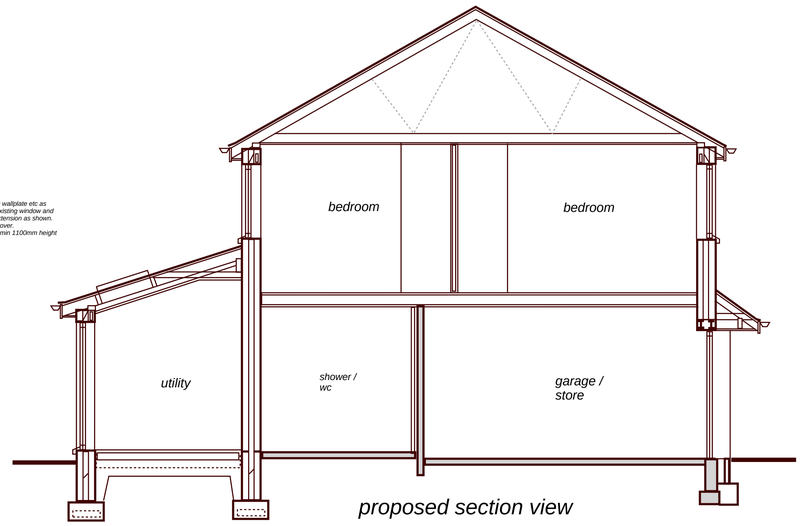


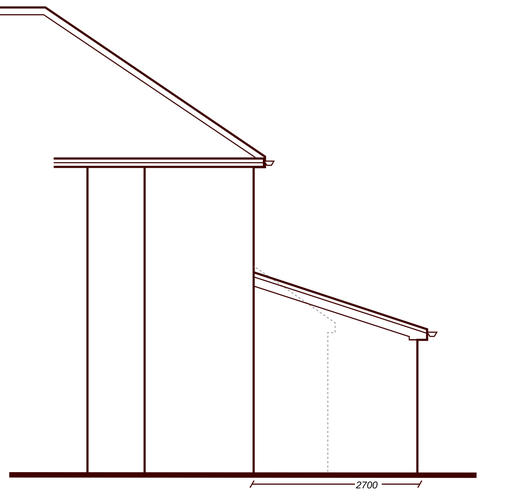
proposed ground floor layout plan



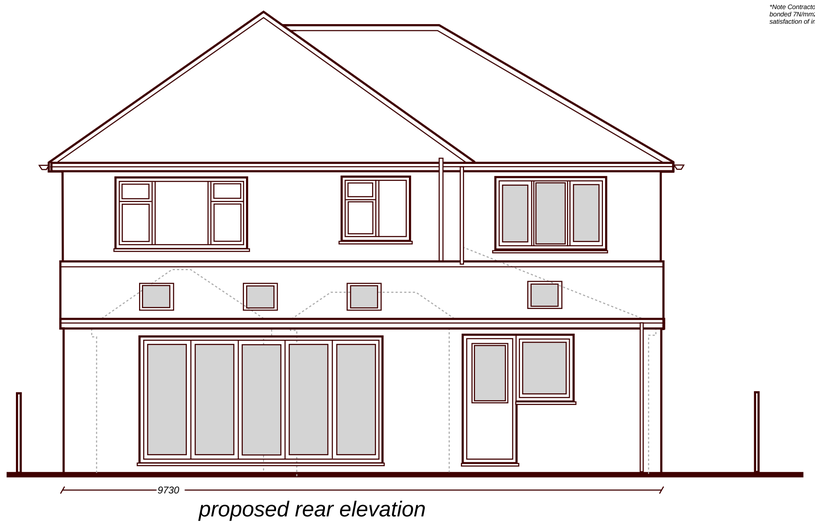
proposed first floor layout plan



proposed section view



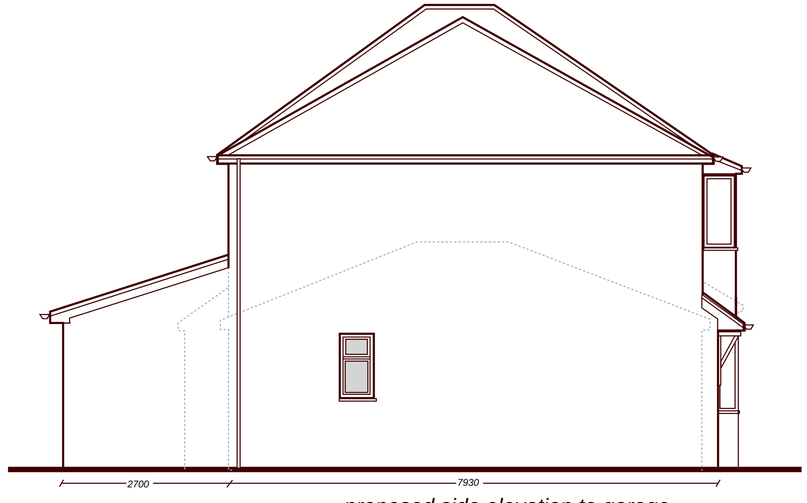
proposed side elevation to rear



proposed rear elevation



proposed front elevation



proposed side elevation to garage

General Specification:

Preliminary Works:
Examine existing drainage runs at site to assess falls and lines and verify new drainage layout.
Strip back existing single storey garage etc roof and examine walls and foundation to verify if fit for purpose to retain in situ.
Remove all rubble from site to an authorised and licensed tip facility.
Check existing foundations to assess ground bearing conditions etc. and assess soil type to verify new foundation type.

Walls (External):
Selected faced brick to match existing min 100mm cavity enclosing Dritherm 32 insulation fill to manufacturer specification and internal leaf of approved 100mm load bearing thermal block work (maximum 0.15W/mK) faced internally with 52.2mm PIR plasterboard finish (40mm PIR+12.5mm plasterboard) on treated battens or cement dabs.This or similar construction to achieve max 0.18W/m2 k U-Value
Install Thermadate or similar insulated cavity closures at all opening jambs.
**Note: new walling to be effectively bonded to existing structure to satisfaction of inspecting authority surveyor and wall ties to be stainless steel suitable for 100mm cavity width and compliant with DD140. set at 5 per m2 and at each block course at jambs.*

Internal Walls (non load bearing):
100x47 sw timber stud faced on 100x75mm sole plate and dpc faced with plasterboard incorporating vapour check and enclosing 100mm rockwool acoustic grade insulation.

Wall between Utility Room etc and Garage:
This wall to achieve 30 minutes fire resistance plus max. 0.18 w/m2 U value viz:-
Existing 110 masonry wall to garage side with utility and wc lining wall of 100x50mm timber stud frame enclosing 100mm GA4000 between studs + 50 mm GA4000 lining and 12.5mm plasterboard finish (or similar approved insulation board to manufacturer specification).
**Extend partition wall up to underside of new floor over with tight dense rockwool packing to maintain fire break and thermal performance.*
**Install 30 minute fire door with intumescent smoke seals and self closing device between garage and utility room and maintain minimum 100mm step down to garage floor.*

Main New Roof:
Plain double lap tiles to match existing and suitable for pitch, fixed in place in accord with manufacturer specification and BS5534 on treated battens on approved breathable membrane over prefabricated trussed rafter units by specialist design and supply compliant with BS5268 secured with purpose made steel clips to continuous 100x75mm sw wall plate anchored to supporting walls by approved galvanised ms straps at maximum 1000mm centres.
Ensure all necessary handling, bracing and lateral restraint strapping to roof frame and adjacent structure is completed in accordance with manufacturer specification and compliant with BS5268.
Horizontal ceilings to have 150mm rock wool between joists and a further 150mm thickness laid across joists.
Note: This or similar construction to achieve max 0.15 w/m2k U-Value

Structural Works:
Install steel beams encased in gyproc fire line board to achieve min. 30 minutes fire resistance. See Engineer's design sheets for all structural beam etc information.

**Beam schedule (All steel grade S355)*

Beam A - 203 x 102 x 23 UB

Beam B - 203 x 203 x 86 UC (with 280x8mm steel spreader plate welded to top flange)

Beam C - 178 x 102 x 19 UB

Beam D - 2No 152 x 89 x 16 UB (bolted together using tubular steel spacers at maximum 1000mm centres)

Beam E - 152 x 89 x 16 UB

**Note Contractor to assess bearing capacity of existing retained masonry to receive ends of new Beams and if necessary rebuild in bonded 7N/mm2 engineering quality concrete brick/ block to required bearing capacity beneath spreader pad stones to full satisfaction of inspecting authority.*

Lintels:
Install Catnic or similar combined steel lintels over new openings with minimum 150mm end bearings to manufacturer spec. Carefully form new access doorway to extension as indicated and install precast concrete lintels over to manufacturer spec. Make good to all disturbed surfaces.

Single Storey Extension Roof:
Selected concrete single lap tiles to match existing and suitable for pitch (approx 18 degrees) fixed in place in accord with manufacturer specification and BS5534 on treated 25mm deep battens on approved breathable membrane over 170x47mm sw C16 rafters at 450mm centres birds-mouthed and screwed through truss type steel clips to continuous 100x75mm sw wall plate anchored to supporting wall by galvanised ms straps at max.1000mm centres.
Head of rafters screwed to 170x63mm sw pole plate rawl bolted to wall at maximum 600mm centres..
**Provide raised ceiling ties hung from pole plate with 100x47mm sw C24 joists with M16 bolt and dog tooth washer connections to each rafter.*
**Pitched ceilings to have Celotex GA400 (100mm) insulation board between rafters ensuring min 50mm air gap behind roof membrane and under-draw with Celotex PL 4060 insulation backed plasterboard (60mm+12.5mm plasterboard) incorporating vapour check membrane all to manufacturer specification - insulate to full length of rafters.*
Note: This or similar construction to achieve max 0.15 w/m2k U-Value.

New Lean To Roof at Front of Garage / Store:
Plain double lap tiles to match main roof on treated battens on approved breathable membrane over 125x47mm rafters and ties at 400mm centres with head of rafters notched and screwed to 150x63mm pole plate rawl-bolted to brickwork at max. 600mm centres.
100x47mm sw C16 ceiling ties at 400mm centres screwed to rafter feet and 100x75mm sw wall plate.
**Ensure that where the roof abuts new brickwork Code 4 stepped lead flashing and soakers are installed plus the flashing is linked to a continuous 2000g dpc cavity tray at abutment with new fist floor extension wall.*

Ground Floor Slab:
Extension floor slabs to comprise floor finish to client requirement on min 60mm screed or power float finish to 100mm concrete slab reinforced with A193 steel mesh on 1200g dpm over Celotex GA 4000 (100mm) or similar approved insulation board turned up in 25mm thickness at floor perimeter to avoid cold bridge. Lay further dpm over well blinded 150mm min. compacted natural stone sulphate free hardcore.
**U-Value max 0.18W/m2k*

Foundation Detail:
Subject to prior exposure of existing house foundation lay 600x300mm deep concrete strip foundations to new walls at depth to to suit site conditions and to satisfactory bearing strata to approval of inspecting authority. Reinforce throughout with 2 no layers B503 steel mesh.
**NOTE - Expose existing garage etc perimeter foundations to assess ground bearing and suitability to receive new external leaf of faced brick to general specification with 2000g horizontal dpc to match level of dwelling and supported off new 300x200mm concrete strip set at level of existing foundation base and subject to ground bearing assessment and approval of Inspecting Authority Surveyor.*
**New foundation to create no surcharge on drainage lines at any point.*
All works to be carried out with full agreement of client and adjoining neighbours and any disturbance to existing structures to be made good to satisfaction of all parties.

Drainage:
Lay new 100mm pvc drains on granular bed at min 1:40 falls to connect to existing system on site.
Ensure adequate support and protection to all drains passing through walls and building footprint.
Upvc rainwater goods to match existing carried to existing system as required.
internal waste plumbing to satisfy BS5572 with 75mm deep seal traps as required. Wastes to discharge to 100mm stub stack fitted with Durgo or similar air admittance valve positioned above flood level of fittings to full satisfaction of inspecting authority surveyor.

Fenestration:
Install high performance double glazed upvc window units to match existing style using Pilkington Low E 'k' glass and min 25mm cavity – max 1.40 w/m2 k U-Value.
Opening casements to represent minimum 5% of adjacent floor as natural vent plus min 10000mm2 trickle ventilators to head of frame.
**Install high performance velux type roof light to new roof (550x780mm) or to client requirements and to manufacturer spec. with double trimmer rafters etc. as required. (U-Value 1.2 w/m2k).*
**Escape Window: Where required provide opening casements to habitable rooms capable of safe egress in emergency i.e. min 0.33m2 clear opening (say 800x450mm) set within 1100mm of internal floor level.*
Ensure that all doors and critical window areas are fitted with laminated or toughened safety glazing compliant with current BS:EN:12150.

Floor - First:
*21mm t&g boarding across 190x50mm sw C16 joists at max 450mm centres supported off heavy duty galvanised ms joist hangers fixed to comply with manufacturer specification. Provide suitable strutting at mid span with end wedges as necessary. Under draw joists with plasterboard to achieve min 30 minutes fire resistance incorporating vapour control membrane where required and enclosing 200mm Rockwool Flexi between joists to achieve maximum 0.18W/m2k. *Note any notching of floor joists for services to be minimal and compliant with BS5268 part 2-1991.*
Install double joists beneath partition line bolted together with M16 bolts and steel dog tooth washers at 600mm max centres.

Ventilation:
Natural ventilation from opening casemenes plus install mechanical extract fan to kitchen area set to achieve min 60 litres/sec extract rate (30 litres/sec if over cooker hood) and new wc/shower room set to achieve min 15 litres/sec extract rate. Similarly provide mech vent to utility (30 litres/sec)

Heating:
All boiler alterations and flue discharge criteria plus any extended space heating to be to the full requirements of a suitably qualified heating engineer and assessment of existing heating system plus compliant with current Part J Building Regulations. Install thermostatic control valves as necessary throughout.

Electrical Work:
All notifiable electrical work to be carried out by a suitably qualified contractor registered with an approved national body. A formal completion certificate to be issued in compliance with current Part P building regulations and to satisfaction of inspecting authority surveyor
Note: all lighting to be low energy type to client spec
**Install sockets to extension area to requirements of client and provide co-axial and satellite ports as needed.*
**Install a mains operated inter-linked smoke alarm system with battery back up to circulation areas and critical locations in compliance with BS5839 and to satisfaction of inspecting authority surveyor*

Proposed Two Storey Side and Single Storey Rear Extensions at 111, Heath Avenue, Werrington ST9 0HU

Scale 1-50 (A1) - proposed layout Dwg ref HA2b April 2023

Geoff Rouane C.Build.E, MCABE, MRICS.
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RICS cabe chartered building engineer

Important Note:
This drawing has been prepared for submission to the Inspecting Authorities for necessary Statutory Approvals. Nominated contractor to verify all dimensions either written or scaled together with drainage lines and inverts etc. prior to commencement of formal construction work on this site and any discrepancies to be referred to the Client and Agent. All works to be carried out with full agreement of client and adjoining neighbours and any disturbance to existing structures to be made good to satisfaction of all parties.
This drawing is not to be reproduced without prior consent.