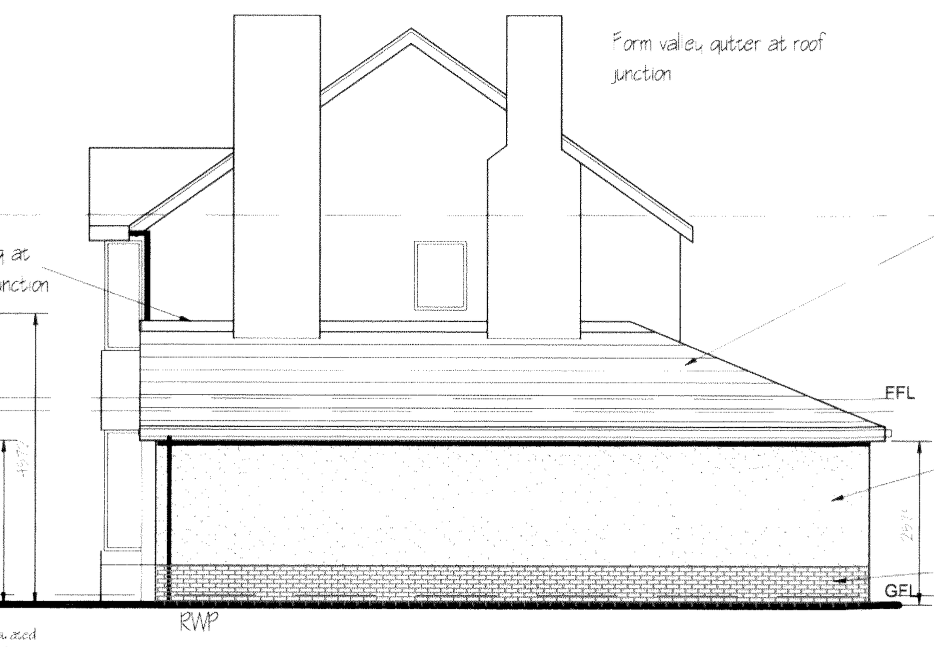
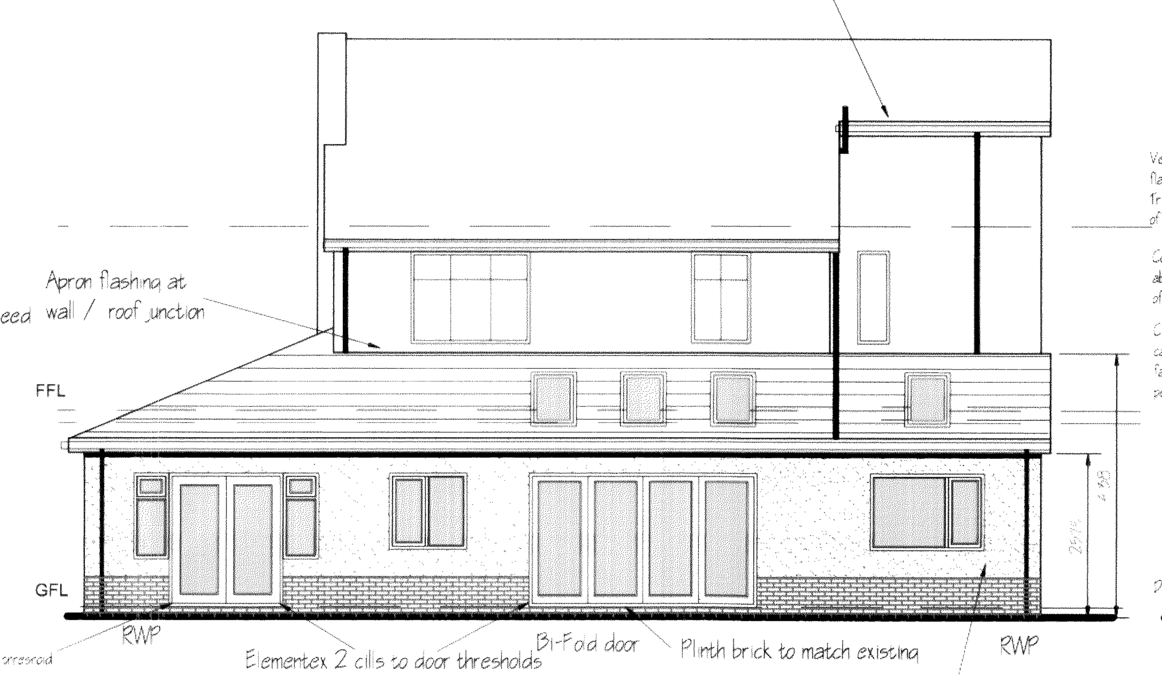
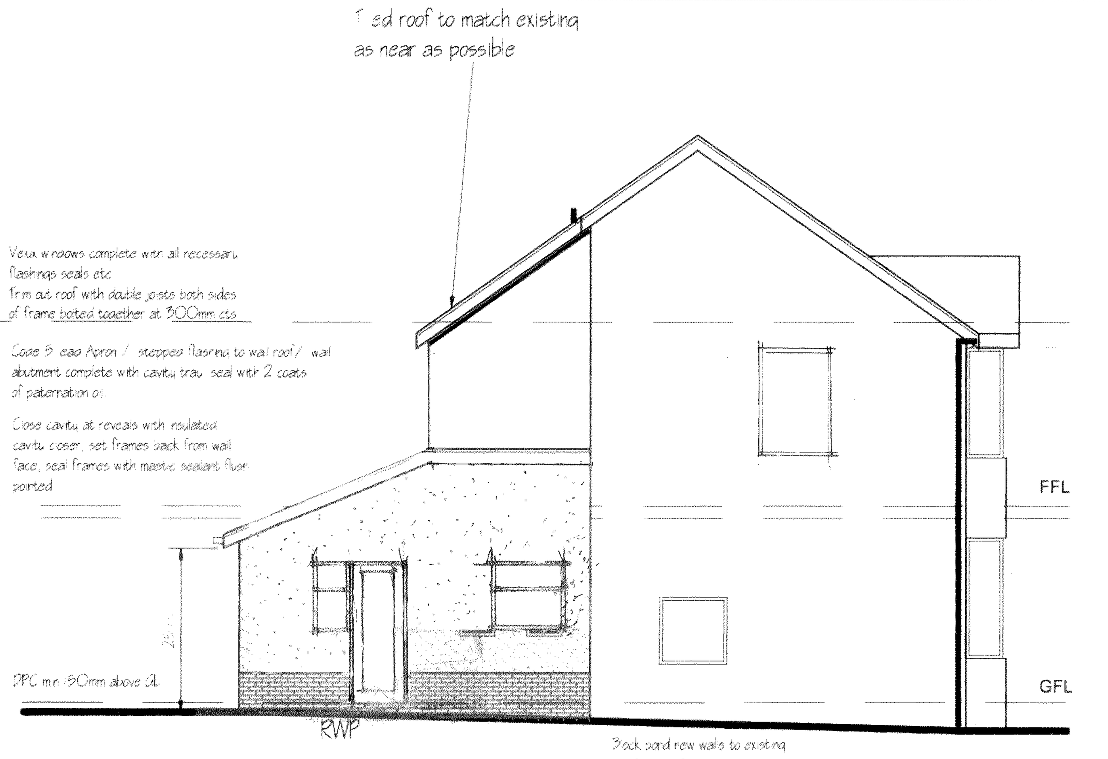
Ex. FRONT ELEVATION (unaltered)



Ex. GABLE ELEVATION (unaltered)



Ex. REAR ELEVATION



Ex. GABLE ELEVATION

THE CLIENT SHOULD NOTE THAT THE DRAWINGS ARE FOR BUILDING REGULATIONS PURPOSES ONLY AND THAT THE CLIENTS OWN CONTRACTOR AND SUB-CONTRACTORS SHOULD LIASE WITH REPRESENTATIVES FROM THE LOCAL AUTHORITY FIRE DEPT. STATUTORY UNDERTAKERS AND ANY OTHER RELEVANT BODIES,TO ENSURE THAT THE WORKS COMPLY TO THEIR REQUIREMENTS AND CODES OF PRACTICE.
ANY MODIFICATIONS, AS A RESULT TO BE AGREED.
ALL DIMENSIONS TO BE CHECKED ON SITE
ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH RELEVANT BRITISH STANDARDS CODES OF PRACTICE AND BUILDING REGULATIONS.
ALL TO THE SATISFACTION OF THE LOCAL AUTHORITY.
ALL WORK TO COMPLY WITH REQUIREMENTS OF COVENANTS OR AGREEMENTS,RELATED TO THE PROPERTY
NONE OF THE WORKS SHOULD ENCROACH ONTO THE ADJACENT PROPERTY WITHOUT THE EXPRESS PERMISSION OF THE NEIGHBOURING OWNER.
THE CONTRACTOR IS TO ENSURE AND CONFIRM FOR HIMSELF THE LOCATION, POSITION AND SIZES OF ALL EXISTING SERVICE CABLES/DUCTS SURROUNDING AND WITHIN THE SITE TO ENSURE THAT NO DAMAGE OCCURS DURING CARRYING OUT OF THE WORKS.
THE CLIENT IS TO TAKE RESPOSIBILITY FOR THE APPOINTMENT OF A PARTY WALL SURVEYOR TO MAKE THE NECESSARY NOTICES TO ADJOINING PREMISES WHERE THE PARTY WALL ACT 1997 APPLIES.

Window fenestration to match existing
Glazed area 1/10th floor area
opening light 1/20th floor area
Escape window as gen spec notes
Frames set back from wall face and sealed with mastic sealant flush pointed

NOTES:
(WHERE APPLICABLE - ALL DIMENSIONS TO BE CHECKED ON SITE)
This specification and all other drawings to be checked and verified by the contractor prior to work commencing on site. This drawing is not to be used for construction purposes unless approved by the Local Authority.
This drawing has been prepared to comply with the current Building Regulations June 2006. Extension to be built in accordance with the Robust Construction Details as produced by the DTLR.

Specification
The intention of the drawing and specification is not to detail every aspect and or item of material to be used. It is expected that the contractor shall have the necessary experience and knowledge to undertake the works as is depicted in this drawing/specification. Where discrepancies occur between the drawing and specification this shall be brought to the attention of the client prior to submission of the quote. Where this is not the case it shall be deemed that the works identified or inferred by the drawing and specification are included within the overall price submitted by the contractor. Where details are shown on the plan but not indicated in this specification or vice versa it shall be concluded that the contractor has priced for the works in their entirety.
The contractor shall allow for the provision of a scaffold to be erected to the side elevation to allow materials to be moved to the work area with a minimum of disturbance to the main house. The contractor shall protect all existing fittings, furnishings, decorations etc and shall ensure that dust and disturbance is kept to a minimum for the duration of the works.

Party Wall Act 1996
The proposed works fall within the provisions of the Party Wall Act and as such the Building Owner shall obtain consent from any Adjoining Owner affected by the works.
The client's attention is drawn to the requirements and responsibilities of the 'Party Wall Act' where the works are to be adjacent to a party wall or boundary. Client is to ensure that all obligations and notices are served on adjacent parties before works commences.

General Details
1) All exposed timber to be treated with preservative prior to fixing.
2) All drains to be connected to existing invert levels and laid to proper falls. New drainage to be 100mm pipes conforming to BS 8301 and manufacturer's recommendations. Where a drain passes through or under a load-bearing wall, a RC lintel is to be provided. All drainage runs are assumed lines: the correct position of existing drainage is to be confirmed on site.
3) All services/meter installations etc. to be extended repositioned or provided as necessary in conjunction with statutory undertakers requirements. (It is recommended that consultation takes place with all relevant statutory undertakers prior to commencement).
4) Draught seals to be fitted to the opening elements of all windows and doors
5) All wall / frame junctions and service entries to be sealed.
6) Trickle vents to habitable rooms to be minimum 8000 mm2
7) Provide and fix new loft access doors complete with catch and draught seals.
8) All glazing to conform to part N / K4 of the approved documents.
9) All timber to be SC3 unless stated with preservative treatment.
10) All RSJ's to be bolted to concrete padstones and encased in 30 minutes fire resistant Fireline board.
11) Broken lines indicate existing doors, frames and walls to be removed and remaining surfaces to be made good to match existing.
12) Minimum 300mm thick fibreglass quilt insulation (3 layers 100mm thick cross laid) to all roof voids.

GENERAL NOTES
All materials and construction works are to comply with the current BS standards and codes of practice. Building regulations and schedules and specifications,
All materials and proprietary goods shall be suitable to there purpose and shall be stored mixed and fixed in accordance with their suppliers / manufacturers instructions or specifications
The contractor shall take account of everything necessary for the proper execution of the works to the satisfaction of the inspector, whether or not indicated on the drawings.
Any variations from the drawing carried out without the Architects written agreement shall be the responsibility of the contractor.
The Architect has not been appointed to carry out inspections during the construction of this project and responsibility for standards of construction rests with the contractor / developer.
The contractor is to check and verify all building and site dimensions, levels and sewer invert levels at connection points before work commences.
This drawing must be read with and checked against any structural or specialist drawings provided.
The contractor is to comply in all respects with the current Building Regulations whether or not specifically stated on these drawings.
No dimensions are to be scaled from this drawing, all dimensions to be checked before work commences and any discrepancy to be reported to client.
Before work commences - ensure all Planning conditions and Building Regulation conditions have been resolved to the satisfaction of the Local Authority.
All works to comply with the workmanship clauses in BS8000 series and to be in full compliance with the Building Regulations.
Contractor is to notify Building Control at the appropriate stages in construction - necessary for them to determine the works statutory compliance.
Should the indicated thermal elements construction (walls / floors /ceilings / roofs / windows / doors) below be altered at the construction stage - contractor is to seek approval from Building Control prior to construction and is to be responsible for achieving the indicated minimum 'U' values for each element.
Contractor shall allow for the provision of all suitable access equipment and scaffolds and must comply with all health and safety legislation, including safe working at heights.
Contractor shall remove all rubbish from site during the course of the building operations.
Contractor is to protect all existing fittings, furnishings, decoration etc and shall ensure that dust and disturbance is kept to a minimum for the works duration.

EXISTING SERVICES
There are no records of under ground services available within the site curt ledge therefore the main contractor will be responsible for carrying out all necessary investigations before execution of the works, in particular - excavation works.

ASBESTOS REPORT
An asbestos survey report as not been carried out and therefore should the contractor find any evidence of asbestos related substances during strip out of the property then it should be reported to the client or supervising officer

DRAINAGE
Above ground drainage to comply with BS 5572 1978. All vent pipes unless stated otherwise to terminate at roof level with roof tile outlet. Vent pipe outlets within 3m of adjacent windows to terminate 900mm above. New inspection chamber to be added as shown on drawing. Lead flashing where pipe passes through roof. 40mm dia wastes to sink & bath, 32mm to wash basin. Pipes exceeding 2m in length to be 50mm dia. All fittings to have 75mm anti-siphon straps. Stub stacks to terminate above flood level of highest fitting with automatic air admittance valve

DRAINAGE
100mm UPVC under ground drainage (Hepworth or similar approved) with flexible joints connected to IC. Provide rodding access points.
Encase internal SVP with 9mm plywood, paint finished, complete with access cover and removable access point cover. Soil waste pipe complete with slow bend and to discharge to main drains. Sanitary pipe work cages to be fitted to top of SVP in metal. WC pipe work must not allow light to pass through.
Boiler condensate may connect to sanitary pipe work; pipes to be minimum 22mm diameter, 75mm trap rodding points to SVP to be over the spill over level of the lowest connected appliance.
All drains running through walls to have RC lintels over. All drains under building to be encased in 150mm concrete, C20/20 with flexel movement joint at each collar. Pipes passing through walls to be bridged over with 2 course deep RC lintels, 50mm clear opening to be masked both sides with rigid plate to prevent ingress of vermin or soil.
new drainage to be Hepworth Super Sleeve or similar approved with 100mm diameter pipes. IC's to be Hepworth (polypropelene) Super Sleeve 100mm 930mm deep with 100mm diameter inlets. Foul drains at minimum 1:40 fall and surface water drains at minimum 1:100 fall. IC's over 950 deep to be P.C.C. sections.
Rodding points to be provided at head of drain. Protect existing drains to be retained ensuring that manholes, gulleys etc are not damaged and drains are kept free from debris at all times. Existing inspection chambers to be cleaned and inspected for internal defects. Any cracks, spalled or dislodged bricks to be replaced with equal and suitable engineering brick. Mortar for bedding in new bricks and/or pointing of defective bed/cross joints to be 1/3 cement/sand mix. Semi-universal gulleys with filter buckets to driveway/turning heads, discharging to existing surface water sewer.
All invert levels to be agreed on site.
All drains to be connected to existing invert level of property boundary and laid to proper falls- new drains to BS 8301 and manufactures recommendations.
All drain runs are assumed lines (the correct position of existing drains to be confirmed on site).
The Builder / contractor shall verify on site whether any existing drains on the site are combined or separate and shall ensure that correct connections are made. Note :- Check existing drains to determine if the system is separate or combined. if separate system ensure that new connections are made to appropriate drain i.e. Foul to Foul / sw to sw and that there is no combination of above ground water systems.
Any drain running under proposal to be checked for damage, adequately protected and adequate rodding access is to be provided.
Below ground drainage to be approved 100mm plastic or clay drainage system laid at minimum 1 in 40 falls - bedded and installed in accordance with manufacturer's recommendations.
Proprietary inspection chambers to be provided as indicated and as necessary to provide rodding access to drainage runs. Sizes to suit depth - as recommended by manufacturers.
Internal I.C to have double seal bolt down cover fitted and I.C's in traffic areas to have heavy duty covers fitted.
All gullies to be back inlet and roddable - wastes to discharge below grating but above water line.
Drainage runs indicated on drawing are assumed - checks to be made on site to determine exact locations before works commences. All redundant drainage to be capped and sealed.

Check to be made to determine if the existing drainage system is combined or separate. If system is found to be separate ensure that new connections are made to appropriate drain i.e. foul to foul / s w to s w and that there is no combination of above ground water systems.
100mm dia SVP to be provided as indicated - accessible rodding eye to base and to all changes of direction. SVP to discharge with caged outlet 900mm above windows or rooflights. Weathered slate fitted to roof penetrations.
Air relief valves (where specified) to be installed above the flood level of highest appliances overflow and in accordance with manufacturers instructions.
SVP casings to be demountable for waste pipe maintenance and rodding access.
Rainwater goods to be min 100mm gutters connecting to 75mm dia rwps - installed to manufacturers recommendations.
Where wastes are fitted in roof void - fit insulated and draught sealed access hatch in ceiling for maintenance access.

IC
IC concrete ring system on 200mm concrete base and haunching complete with cast iron cover double sealed and medium duty. Polypropylene chambers are only to be used to a depth of maximum 1200mm with 450mm diameter cover, all bases to be concrete with haunching and benched as applicable. Cover slabs to BS5911 minimum reinforcement A142 mesh with covers to soil usage. Rocker pipes to be used where required. Lintels over drains passing through walls ends of runs not terminating in an IC shall be fitted with rodding access points. Provide rodding access points to base of all SWP's.
Concrete base slab min 150mm thick C20/20, concrete benching C20/20, finished with 40mm granolithic.
Note - Inspection Chambers located internally to be fitted with double seal screw down heavy duty cover.
Construct new inspection chamber over existing / new drain run including new connections to drain within inspection chamber using 100mm dia. Sgw or other equal and approved under ground drain pipe work from 2 Nos rodable gullies with grated access plates as indicated to take waste discharge from kitchen and rainwater from roof.
All drainage, to be approved and inspected by L.A.B.C.O. prior to covering up.
Drains to be replaced / taken to existing mains near boundary, including IC and rodding eye as necessary to suit site conditions. Provide rodding access at the junction and to the base of internal / external s.v.p. as required.

SANITARY PIPEWORK
Sanitary pipe work in accordance with BS5572 and soil pipes and accessories with BS4514, 100mm diameter SVP positioned internally and surrounded in 25mm minimum glass fibre sound insulation quilt. If in a habitable room in 38 x38 softwood frame duct, covered with 6mm ply board and accessible throughout its length for maintenance and repair. Caged top of SVP terminating 900mm above any opening lights or venting in roof space using Durgo Air admittance valve by Marley Extrusions or similar approved. Discharging directly into an inspection chamber via 100mm rest bend. WC waste connected by 100mm pipe to SVP or direct to drain. LB's, baths and sink to have 75mm deep seal anti-vac trap discharging respectively though 32mm, 40mm and 40mm diameter waste pipe to SVP or directly to BIG.
Branch connections from washing machines to be 38mm dia with washing machine trap. Combined branch connections to be min 50mm dia max length of 32mm dia branch 1.7mts. max length of 40mm dia. 4.0mts
Rodding points to be provided at points where access cannot be obtained by removing traps. All sanitary pipe work to comply with the recommendations of BS 5572. All waste pipes to be UPVC Caradon terrain or similar approved

PLUMBING DETAILS
Where any two pipes combine the diameter of the waste pipe to be increased to min 50mm. 50mm pvc vent pipe to discharge 900mm above any opening within 3000 and be fitted with a cage pipe to be taken through the roof void and covering
Bath room to incorporate mechanical extract ventilation capable of extracting at a rate of no less than 60ltrs per sec which may be operated intermittently. Where vertical extract ventilation is used discharge pipes through a roof (fitted with a condensation trap)Where soil pipes pass through floors rodding access points to be fitted at junctions with additional rodding access point at the base of pipe. Where relevant, soil pipes to be clipped to joists at max 1000mm ctrs at min 1:40 fall Provide an insulated access trap for the purpose of maintenance and rodding points repair - Rodding access points within the roof void to be positioned as per building inspectors instructions, No opposed waste connections within 200mm of wc branch, kitchen sink to be provided with 75mm deep seal anti vac trap to discharge below grid level of big and above water line.

FOUNDATIONS GENERALLY
Excavate to form new strip foundations min 200x600mm wide to struct. Eng details and or building inspector's satisfaction.
For tendering purposes to be considered not less than 1000mm below GL.
APP doc Section 1E projecting min 200mm on each side of the supported wall with min 750mm cover to finished ground level taken down below invert level of any adjacent drainage to suitable strata and to a depth agreed with the Local Authority Building Inspector dependant on site conditions
All concrete to be ready mixed, grade C16 to strip and C24 to slab.
Foundations min 900mm below GL depth to invert of drain if within 1 mtr of foundations.
Min 600x200 concrete strip with A 142 mesh, 50mm min cover, depth to be determined on site between builder and DBS to full satisfaction of the LA inspector, any drains passing through foundations to be encased in 200mm concrete, provide RC lintel over drains passing through walls, provide rodding access points
All work to comply in every respect and entirely with the building regulations new edition.

EXISTING FOUNDATIONS
To be exposed for inspection by the LA inspector and or structural engineer and any works to be carried out strictly in accordance with inspectors/engineers report and recommendations. Trench to be excavated along side of the wall and footing to be underpinned with concrete in 1mtr lengths as indicated on drawings to prevent collapse of wall

UNDERPINNING
Allow a PC sum for underpinning existing foundations if during investigation by the LABC officer deems existing foundations to be inadequate
Underpinning to be carried out in lengths in numbered sequence 1,4,2,5,3 etc depth of underpinning to be determined on site and subject to sufficient sub strata bearing capacity

GROUND FLOOR SLAB
Solid Ground floor construction (0.22 W/m2k minimum 'U' value required).
Excavate all topsoil and contaminated fill material from under floor slabs and back fill with stone and dust (M.O.T) in 150mm max compacted layers. 50mm sand blinded to receive d.p.m. If filling exceeds 600mm under floor slab, slab to be changed to a suspended concrete mesh reinforced type - details to be agreed with Building Control
Lay 1200 gauge dpm onto sand blinding and fit perimeter insulation Celotex-T-Break TB4030 (30mm) insulation around slab perimeter. Lay 80mm Celotex Tuff -R GA4000 insulation (thickness to comply with manufacturers P/A table and to give 0.22 'U' value) to insulate slab - additional vapour control layer 1000g d.p.m laid directly over insulation. 100mm min thick concrete slab cast over reinforced with A142 mesh - level to match existing allowing for any floor finishes.
Floor dpm to lap new and existing walls dpcs. D.p.m joints to be taped and sealed using proprietary jointing tape. (NOTE: - refer to slab detail for methane or radon protection provisions which may be necessary to project)
Any airbricks covered by proposal to be ducted via 100mm dia ducts to new external walls and insert telescopic airbricks sleeved with cavity trays over to connect to outside air.

GAS MEMBRANE
Install gas membrane below ground floor - MONOFLEX -or similar approved gas retardant membrane sealed in accordance with manufacturers details and recommendations complete with vent outlets within cavity, gas sealed to prevent ingress of methane or similar gases.

GENERAL DETAILS - FLOORS and FOUNDATIONS
Where existing sub floor ventilation air bricks are covered by new build solid floor construction. - Duct air under the proposed floor via 100mm min diameter UPVC pipes. Extended into existing sub floor void and connected to external air via telescopic air brick and adaptors. Any contaminants found under the proposed extension to be adequately dealt with in accordance with Approved document C - (section 2) Where a drain through or under a load bearing wall, a RC lintel must be provided.
All drainage within 500mm of the works to be exposed, protected and back filled in accordance with the building inspectors instructions

CEILING FINISHES
Ceilings to underside of trusses / rafters are to be finished with 15mm foil backed plasterboard and finished off with 3mm skim coat of plaster

TRIMMERS & TRIMMING POSITIONS
Provide required trimmers and trimming around
a) Stairwell openings Staircase Manufacturer to confirm size prior to fabrication of staircase
b) Openings for soil stacks
c) Ducts for extractor fans or waste pipes
d) Void

EXTERNAL WALLS
Brickwork / Renderered blockwork to match existing as near as possible 100mm facing brick, 100mm block inner leaf 100mm cavity with halfen or similar st st wall ties at 450mm staggered ctrs 250mm ctrs at quoins. Brickwork only below DPC, block bond new walls to existing and maintain cavity, close cavities at eaves with 2 layers of slate, close cavity at reveals with DPM or proprietary cavity closer, 75mm thick Kingspan K8 / TW 75 rigid insulation within 100mm cavity fixed to inner leaf to give min 'U' value of 0.25w/m2 deg C
Blockwork 100mm thick Celcon Solar or similar, aerated thermo blockwork in accordance with BS 6073: Pt1, 440 x 215 x100mm block to receive 13mm lightweight plaster or 9.5mm plasterboard on dabs (U- Value 0.25 W/ W/m2K).
Maximum length of internal wall not to exceed 6000mm without movement joint, Min. 7n/mm2 crushing strength, flush pointed and to receive 12mm plaster board and dabs finish internally) as by Thermalite or similar approved, skim finish to board to receive clients decorative finish
Facing brick and pointing to match existing as near as possible and to commence min 4 courses below DPC. All brickwork above and below DPC to be solid or frogged to BS 3921, below DPC to be class B engineering brick, flush pointed or similar approved., Allow for lean mix concrete cavity fill to GL splayed to outer face.
Allow for weep holes every 4th perpend
All wall ties to be st st safety pattern to BS 1243, 1978 or fish tailed type at 5 No / m2
Allow for weep holes as above and building in cavity trays as by Glidevale or similar approved to lintels etc.
St St wall ties to be HRT4 type to engineer's specification. Wall to be finished with 13mm plaster (min 10kg/m2 both sides)
All sockets switches, piped services etc are to be fitted within boxes / ducts of 22kg/m2 plasterboard with mineral wool as main wall
All new brickwork to be bonded to existing and cavities to be maintained - alternatively use proprietary bolted starter anchor system together with inserted insulated V.c.p.c (installed in strict accordance with manufacturers recommendations).
All return corners to be min 550mm unless otherwise indicated.
Proprietary stainless steel double triangle wall / vertical twist ties to be provided to cavity walls at maximum 450mm vertical centres and 750mm horizontal centres - staggered across wall elevation. 225mm max vertical centres at reveals. Ties to be long enough to have 50mm minimum embedment into wall. Proprietary insulation clips to be provided to suit cavity insulation system.
All lintels to have 150mm end bearing and all timbers to have 100mm min end bearing.
Steel beams to bear onto concrete pad stones min 300mm X 250mm x 150mm deep. Where only 100mm seating is possible (i.e. no pier provided) steel to sit on minimum 450mm long x 100mm wide x 150mm deep concrete spreader pad stones. Piers and walls under steel to be made good and rebuilt if formation of openings has weakened structure or structural engineer has specified a rebuild. Steel beams to be bolted to pad stones via M12 bolts.
Cavities to heads of wall to be closed with mineral wool quilt and dressed over wall plate to prevent cold bridging.

RENDER WALL FINISH
Apply render finish to external wall face, min. undercoat thickness not to exceed 15mm, with 2/3 coatwork each succeeding coat to be thinner and weaker than the preceding coat, scratch coat to form key.
Final coat to be applied up to 10mm thick. Allow for protection from frost / rain with plastic sheeting for a minimum of 24 hrs.
Tyrolean finish - a) Honey comb texture firm mixture, b) Smooth rubbed honeycomb texture.
Renders to be applied in accordance with manufacturers recommendations and specifications.

EXTERNAL WALL RENDER
External leaf of block work is to be suitable medium density masonry to take a designation III mix (1:1:6) - this should be confirmed by the manufacturer. Apply weber. rend aid key coat if required to prepare masonry substrate then weber.pral M one coat render system spray applied to a thickness of 15-25mm depending on site exposure in accordance with BS5262. Render is through coloured to client and Planning Officers approval. Apply further coat of weber.pral M to achieve feature render effects such as roughcast or ashlar finish. All render to be applied in strict accordance with the manufacturer's instructions and recommendations: Weber, Dickens House, Enterprise Way, Flitwick, Bedford. MK45 5BY Tel: 01525 718877. Include for providing a stainless steel bell stop to the bottom of the render to finish 150mm (dpc level) above finished external ground level. Paint exposed block surface with 3 layers liquid applied bituminous finish in colour; black.

ARTSTONE FEATURES
Artstone cills where indicated, to suppliers details

WALL TIES
To be stainless steel ties or similar fixed at 450mm centres vertically and 750mm centres horizontally staggered. At jambs reveals ties to be at 225mm centres vertically and within 150mm if the opening & to be embedded min 50mm into the joint

DAMP PROOF COURSE
Main horizontal damp proof course to be bituminous fibre based laminated with lead core to BS 6398, BS 743 Type Door E to be laid min 150mm above ground level with lap joints 150mm. Other damp proof courses / membranes to be polythene to BS 6515 vertical DPM of 225mm width to be used at all cavity closers and project min 25mm beyond wall face
Cavities to be closed at all openings using insulated cavity closers with lintels acting as closers to head of openings, alternatively cut brick or block to eaves and verge
Cavity closers to BBA 2648

THERMAL BRIDGING AND AIR LEAKAGE
Thermal bridging and Air leakage to be limited by compliance with Robust Construction Details for dwellings and similar buildings. Provide Air leakage-Measures designed to reduce air leakage from the building. Air tightness measures will depend on the form of construction and level of workmanship. The objective being to form a definable, continuous air leakage barrier around the dwelling.

Ways of preventing air leakage to be considered at every penetration of this barrier. Particular care on site should be paid to
1) Joints between structural components e.g. wall to floors.
2) Joints around components and opening within walls
3) Services penetrations - plumbing, electrical, and ventilation.

In General
Close any vertical ducts at floor level, top and bottom (e.g. boxing in to SVPs). Seal any service penetrations Select the appropriate sealant or gap filler for the size of gap and degree of movement anticipated. Pipes over 40mm in diameter passing through compartment walls & floors are to be fitted with intumescent collars.

LINTELS
Lintels to be to BS 5977,pt 2 1983 existing lintels to be checked for stability.
New lintels type IG L1/ HD 100 or similar approved min 150mm minimum bearing and galvanised steel or pre-painted finish with cavity trays or DPC's over as required, allow for ½ hr fire protection to soffit and other surfaces of lintels as necessary by fixing 12mm plaster board /master board or similar approved, fixed with proprietary fixings. cavities to be closed and insulated.
Lintel complete with integral insulation by lintel manufacturer.
Lintels to be suitable for loading and spans, complete with cavity tray over with stop ends and weep holes at 900mm ctrs min, 2 per cavity tray
SEE CONSULTANT ENGINEERS DRAWINGS and CALCS

All lintels to have 150mm end bearing and all timbers to have 100mm min end bearing.
Steel beams to bear onto concrete padstones min 300mm X 250mm x 150mm deep. Where only 100mm seating is possible (i.e. no pier provided) steel to sit on minimum 450mm long x 100mm wide x 150mm deep concrete spreader padstones. Piers and walls under steel to be made good and rebuilt if formation of openings has weakened structure or structural engineer has specified a rebuild. Steel beams to be bolted to padstones via M12 bolts.
Steel beams e.g. r.s.j's, u.b's etc to be coated in zinc primer prior to building in and to be spaced and bolted together via M12 bolts and spacers at 1000mm c/s (unless specified by structural engineer). Fully encased in 2 layers 12.5mm plasterboard and skim support on 50 x 50mm cradle to give half hour fire resistance (web flanges packed with mineral wool to reduce cold bridging)
Lintels over openings to be proprietary insulated steel lintels e.g. Catnic or I.G etc - lintel type to be suitable for loading configuration and spans. Install d.p.c cavity tray over with stop ends and weep holes at max 900mm c/s - min 2 per cavity tray. Where 100mm cavity is specified ensure correct lintel is used to deal with wider cavity. All lintels to be encased in plasterboard to give half hour fire resistance.
Internal door openings (max 1200mm opening size) to have 150mm x 100mm reinforced concrete lintels over or proprietary steel lintels of approved manufacture - min 150mm end bearing.

STEEL BEAMS
All RSJ/U.BEAMS to be wire brushed, hand chipped and receive 2No coats of zinc rich oxide paint prior to fixing. Provide 2 layers of 12mm Fire line board linings with skim finish to give half hour fire resistance. For size position and fixing instructions SEE CONSULTANT ENGINEERS DRAWINGS and CALCS

CAVITY BARRIERS
Provide Rocksil cavity stop sock or similar approved to fully fit the cavity, to be friction fitted as required by designer. vertical barriers to have all joints closely butted & horizontal barriers to be fixed side by side at their joints with a lap of at least 150mm, the junctions between vertical and horizontal barriers should be closely butted for horizontal applications a dpc cavity tray with a min upstand of 100mm must be installed immediately above barrier
Barriers to be installed within cavity adjacent to all separating walls and floor positions

INTERNAL WALLS
Stud partition walls at ground/first floor are to be faced with plaster board and skim finish both sides, studs at max 600mm ctrs and incorporate all necessary noggins and fixings. All stud walls to be fully insulated using Celotex / Rockwool or similar insulation
Partitions to bathrooms and WC. s should incorporate a sound deadening insulation quilt to achieve a min sound reduction of 30db at a frequency range of 100-3150 kHz
Skirting boards to be 100x25 sw bull nosed or to match existing, plugged and screwed to walls spaced off walls min 25mm spaced of floor min 5mm.

DEMOLITION
Remove existing windows, frames doors as directed, make good to floor, walls etc
Remove brickwork/blockwork below cills
Remove all defective wiring, sockets switches etc
Remove all defective plumbing /sanitary appliances
Remove all defective timbers to floors walls ceilings etc
Remove existing kitchen fitments as necessary
Remove existing heating system / boiler
Allow for making good of all surfaces prior to reconstruction and fitting of new appliances
Remove existing wall tiles
Remove existing stairs
Remove conservatory / garage / out buildings
Strip out all existing timber screens, doors, windows, frames, architraves, walls and ceiling plaster and any redundant timber works. Walls to be left in a suitable condition to receive new wall and ceiling finishes as specified.

CHECK EXISTING
All existing beams/lintels to be checked for stability, replaced as indicated. Renew all defective beams check all brickwork below beams and cut out and replace defective areas of brickwork.

FLOOR FINISH
To clients requirements. Slip resistant finish, adhesives in accordance with manufacturers details and recommendations. Seam weld all joints as necessary.
Concrete floors/timber floors to receive clients specified finishes to be confirmed by client.
Sicement screed min 65mm thick to be steel trowel finished to receive carpet finish. Apply dust inhibitor in 2 coats in accordance with manufacturer's details and recommendations prior to installing floor finish
Carpets on manufactures recommended adhesive.
Sheet vinyl / tile finishes to be applied on manufactures recommended adhesive, seam welded joints and coved skirtings.
Ceramic tile / quarry tile finis applied on adhesive / s/c bed, provide moisture resistant grouting flush pointed.
Remove all arrisses from timbers prior to priming and painting one undercoat two coats gloss finish.

RAFTER ROOF
ROOF
Concrete interlocking tiles mechanically fixed with terracotta ridge laid broken bond with min head lap of 75mm to match existing as near as possible, on 40x25 softwood tanalised roof batons, .(wire cut or improved nails)gauge and lap as per manufacturers recommendations for a pitch of 22.5 degrees on Andersons Twin Plex type 1F reinforced under slating felt (breathable) (or similar approved to BS 747) Breathable Felt to be fixed with second galvanised nails 20mm into rafters with minimum 150mm overlaps and 50mm dressing into gutters. Flashings to be Code 4 with laps and per felt fixed into brickwork with lead wedges
Roof timber sizes as follows:
150x50mm C16 rafters at 400mm centres back clipped to C16 purlins - Not required. (FLAT ROOF)
150x50mm C16 ceiling joists.
175x75mm C16 binders at 1500mm centres.
50x25mm C16 ceiling hangers at 1500mm centres along binders.

150x50 roof joists (Rafters) at 600mm centres and BAT clipped to 225x100 purlins and 100x75mm wall plate. NOTE wall plate to be strapped down to wall at minimum 2metre centres Purlins to be built into wall and strapped to wall with 1000x50x6mm MS straps. 150 x50mm ceilings joists and 600mm centres built into wall, under draw ceiling in 12mm plaster board and skim, provide and lay minimum 300mm Rockwool insulation or similar approved (300mm Kingspan)to entire roof area. (to achieve min U value of 0.18 w/ms deg C). Provide 2x air bricks within gable walls at high level minimum 225x150mm.
Andersons Roofing grade felt to be dressed over roof joists and Glidevale Eaves Vent into gutter, 150mm laps to felt no vertical joints. 125mm half round PVC gutter seamless, 19mm EQ plywood fascia and soffit to line with existing fascias and soffits
Allow for softwood stud bracing between joists at mid span fit eaves/rafter ventilator spaces at abutment detail with existing side elevations. Fit FV 250 ventilators all as by Glidevale. Provide 0.3metre % ventilation to roof void by inserting eaves vent grills (fitted with insect guards). Ceiling incorporating vapour barrier to be foiled backed 12mm plasterboard with taped and skimmed finish. Ceiling height above finished floor level to be approximately as existing.
Wall plate 100x75,mm softwood. NOTE - proposed eaves are nominal only and may be amended on site as necessary to suite site conditions.
Areas of sloping ceilings to be insulated between rafters with min 150mm Kingspan therma pitch TP10 / Kooltherm K7 and under drawn with 50mm thick Kingspan thermawall TW56 board on 50x50 sw counter battens with 12mm thick foil backed plaster board, 50mm airgap to be maintained above insulation to ensure adequate cross flow ventilation to roof void. (to achieve min U value of 0.18 w/ms deg C)
Proprietary eaves sleeving provided to maintain unrestricted roof ventilation. Facia/soffit provided to match the existing, packed off brickwork to provide cross ventilation with 25mm air gap fitted with insect mesh. Rainwater to discharge via a 125mm seamless gutter to match existing to discharge via a 75mm black square section PVC rain water pipe into a newly formed and existing trapped gully as per proposed plan, into existing drainage system

ROOF RESTRAINT STRAPS :
30x5mm MS straps (galvanised) at 2000mm max. ctrs fixed over inner leaf of external wall and screwed to 3 No. Trusses at both ceiling and roof level, and in accordance with A.D. Section A1/A2 Part CC33-37. 75x50 sw noggins are to be fixed below all gable peak and ceiling line straps.

PLASTERBOARD EDGE FIXINGS:
50x38mm sw noggins fixed between trusses or perimeter edge fixing 50x38mm sw noggins at 600mm cts for partition head fixing with 125x19mm board fixed central over partition head rail for plasterboard fixing.

VALLEY AT ROOF INTERSECTIONS:
Form Code 4 lead valley or install proprietary GRP preformed valley trough on 255x19 softwood valley boards fixed to main roof trusses and diminishing trusses/sw rafters. Provide 175x32 sw lay boards fixed to main roof trusses to support ends of diminishing trusses/rafter feet.

EAVES:
Preservative treated 200x25 sw fascia with 12mm WBP quality ply soffit board 25x25 sw framing.

VERGE:
Preservative treated 200x50 sw bargeboard on sw gable ladder fixed to last truss

ROOF LIGHT
VELUX or similar approved
Velux roof lights incorporating proprietary flashings. seals weather and finishing strip covers to be fixed within trimmers set out to suit size of windows, Velux windows by specialist manufacturer complete with all necessary flashings, seals vents and trimmings as standard, Trim out roof timbers to receive roof light and make good to surrounds, insulate voids around trimmings. Roof light to be manually operated, (allow for electrically operated window operated by weather sensors wired to mains supply and complete with emergency cut off. - wire to smoke alarm system)
Glazing to be Pilkington's. Antisun K glass as general specification for glazing.
Glazing to be double glazed hermetically sealed units pinned and beaded to frames as per manufacturers recommendations
Frames to have trickle vents
U value of roof light to be 1.6 w/m2 deg C

RAINWATER GOODS
Gutters generally to match existing
Marley UPVC rainwater gutters discharging via 65x65 upvc down pipe square section/dia. Semi universal gullies
Rainwater system designed in accordance with marley extrusions rainwater system design guidance and the min requirements are indicated, any alterations must have the flow capacity of at least 2.3l/sec.
Gutters to Dormer roofs and hipped ends to discharge to main roof
125mm UPVC gutter fixed to fascia and laid to falls at 1:600 into 75mm UPVC down pipe fixed to wall face to be black. All connected to BIG below grid level and above water line, discharge to main drains

WARM ROOF EPDM
EPDM Rubberized roof on 25mm WDP deck applied in accordance with manufacturer's recommendations, minimum 150mm laps complete with breather membrane, and Felt dressed up 150mm to walls, built into brick joints. Dress EPDM over fascia into gutter. Install on manufacturers recommended vapour barriers using recommended adhesives, Insulation to be laid over decking and roof joists using King span or similar compressed insulation type K5 therma roof min TR 31 min 150mm thick, over joists and 50mm thick therma wall below joists to give U value of 0.18 w/m2 degC.
Decking secured to firring pieces on50x50mm sw tanalised counter battens and joists, size of joists ---------, @ 450/ 600mm ctrs IG gal steel herringbone strutting fixed in accordance with manufacturer's details and specification. 1.70 fall to roof using firring between plywood and battens maintain 50mm air gap between insulation and roof deck
Under draw ceilings in 2x 9mm layers of plasterboard and skim, lap, tape and skim joints. Fascia set proud of wall face by minimum 25mm, allow permanent ventilation to fascia and soffits.
All gaps between elements must be sealed to reduce unwanted air leakage, e.g. follow robust detail sealing as described below.
Provide vapour control barriers on the warm side of insulation - including insulated ground floor construction (follow appropriate manufacturer's detailing requirements).
Use joist hangers to support timbers or seal all junctions of structural timbers/ steel etc where built into an external wall with mastic sealant.
Mastic seal all junctions of doors / windows and walls and under the edges of skirting boards / architraves.
Seal around all services penetrations through the external structure, seal all junctions of walls / ceilings with ducting and close off the tops of all vertical ducts e.g. s.v.p boxings.
For dry lining ensure continuous ribbons of adhesive are provided to fix dry lining at perimeters of external walls openings, around services e.g. socket outlets etc. The sealing of dry lining on dabs is very important as it is a key area of air leakage.

COLD ROOF SLOPES
Kooltherm / thermaroof k7 min 150mm thick with thermawall TW56 below rafters min 50mm thick. Sarking board to be either laid between rafters to give U value of 0.18 W/m2k and ensuring 50mm clear ventilation gap full length of rafter or fixed to underside of spar. 52mm thick (40mm insulation) Kooltherm K18 board complete with plaster board to be fitted under the rafters. The contractor shall ensure that the insulation board is extended to the outer leaf to avoid cold bridging.. Over all insulation thickness 150mm - U value achieved 0.18w/m2 deg C

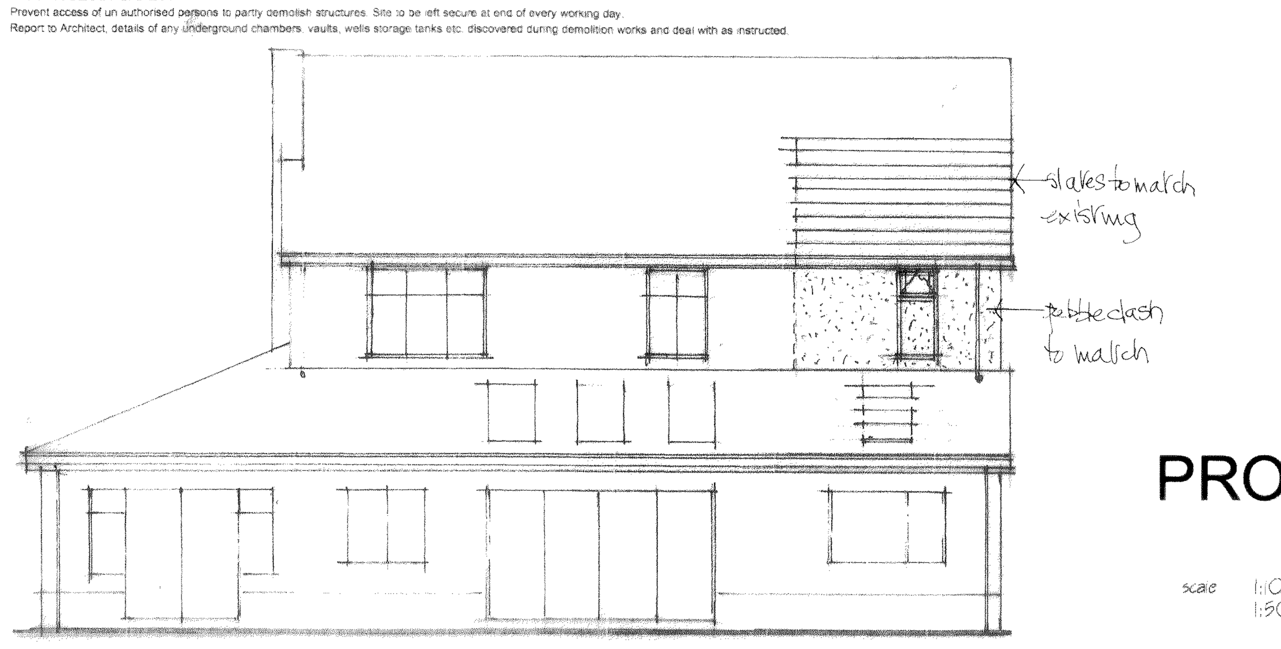
LEAD WORK
All lead flashings to be installed in accordance with Lead Association details and recommendations, all joints and seals to be checked for water penetration prior to completion of the works. Lead to be treated with protective Paternation oils solution as recommended by Lead Association. Flashings and cavity trays to be Code 4 lead to BS1178 and overlap minimum 150mm above abutments. Code 5 lead to be used for valleys with non-woven polyester isolation underlay provided underneath (all lead work to CP143 Part 2). Cavity trays to be installed at abutments in roof/walls, sited minimum 150mm above any such abutments trays to be installed over lintels as required, provide weep holes every 4th purpen with proprietary weep vents. Lead to be complete with all necessary welting, fillets and minimum 150mm lap joints as recommended by Lead Association.
Code 4/5 lead apron, code 5/6 lead back gutter and code 4/5 lead stepped flashing to chimney stacks / walls
Flashings and valley gutters- milled sheet lead to BS 1178 to the size recommended in BS 6915, solder to BS 219 grade J or D. copper clips to be cut from 0.6mm sheet to BS 2870 hard temper.
St St clips to be cut from strip to BS 1449 (grades as BS 6915) min 375mm thickness min 50mm wide
Copper nails at 75mm ctrs to BS 1202 Part 2 jagged shank min 20mm long with large flat heads, screws to be brass or stainless steel to BS 1210]coat backs with bitumen any lead in close unventilated contact with concrete, mortar or other alkaline materials to BS 3416 type 1

PATHS / PAVING / ASPHALT
Break out existing paths as required
New paths to be constructed as follows -
a) Wearing course 20mm - 6mm medium grade macadam wearing course. Base course 40mm - 20mm open graded macadam base course. Sub - base 150mm D of T 1 crushed concrete on proof - rolled sub grade
b) PC / natural stone / brick paviours on 50mm thick weak mix concrete base, laid to falls, 5mm max joints filled with silica sand brushed smooth
c) PARKING AREAS / DRIVE- wearing course 30mm to 10 size open - grade macadam, base course 75mm to 40 single course macadam, sub-base 200mm sub base / D of T1 crushed concrete terram 1000 geotextile on proof rolled sub grade

STRUCTURAL STEEL WORK
Where steel UB are to be utilized calculations are to be provided to the satisfaction of the LABCS. All RSJ / UB's to be encased in two layers of 12mm plaster board and skim wire bound at 100mm ctrs. Beam to bear onto minimum two coarse deep concrete pad stones unless other wise specified. Steel beams to be bolted together using M12 bolts and spacer bars. The contractor is reminded of the dangers involved in lifting and placement of steelwork. Where necessary cranage will need to be catered for in the tender. All steel to be provided in accordance with the structural engineers recommendations

MATERIALS FOR RE-USE
Brick rubble or other hard materials arising from the demolitions may be re-used as hardcore providing it is free from rubbish and other deleterious matter and properly graded so that when compacted filling is dense and without voids. Existing slates to be salvaged, sorted cleaned and neatly stacked on site for re-use. Contractor shall be responsible for ascertaining from the employer whether any materials or equipment shall be required for salvage or re-use. Materials not required by the employer or for re-use shall become the property of the contractor and cleared away from site as work proceeds.

SITE ACCESS / SAFETY
Prevent access of un authorised persons to partly demolish structures. Site to be left secure at end of every working day.
Report to Architect, details of any underground chambers, vaults, wells storage tanks etc. discovered during demolition works and deal with as instructed.



PROPOSED REAR ELEVATION

SAFETY OF STRUCTURES
Provide props, struts, scaffolding and shores etc as necessary to ensure the stability of the existing structure. Make preliminary investigations and calculations where necessary and accept responsibility for the overall safety of the works and existing structures unless expressly made the responsibility of others

SERVICES
Disconnect, divert, seal off or remove existing services before commencing site operations, personnel within the working area mark and protect existing services, which are to remain
Report any benchmarks and other survey information found on structures to be demolished. Do not remove or destroy unless instructed by the architect
An electrical installer's completion certificate and a competent person's electrical test certificate to comply with Part P of the current building regulations will be supplied on completion of the works

SERVICES
All work and installation to comply with regulations and recommendations of the relevant board or authority to the satisfaction of their inspection. Water main to be 750 below ground level and riser to slab to be fitted with an insulation sleeve. Gas main to have a minimum 375mm ground cover, electricity main to have 460mm ground cover and electrical installation to comply with IEE Regulations. Any pipe work running outside insulated shell of building to be insulated. All hot water pipes in roof space and hot water cylinder should be adequately insulated if central heating system is to be provided. Room thermostats or radiator thermostatic valves to be fitted.

SITE CLEARANCE
The site is to be cleared of all buildings, rubble debris and vegetation to a reasonable sub-soil level agreed with Building Inspector. Any underground chambers to be demolished, filled and compacted as Structural Engineers Specification

ELECTRICALS
Check all electrical wiring and replace as necessary by registered electrical engineers. Install new sockets located as directed by client or architect.

Provide efficiency light fittings which will only accept lamps with aluminous efficiency greater than 45 lumens per circuit. Watt locations of proposed fittings as indicated on service drawings switches and sockets are to be positioned between 450mm and 1200mm from finished floor levels. Lighting to all external and vulnerable areas to be operated by photo electric cell time switch or PIR detectors. Power provision for installation for intruder alarms to comply with BS4737 or BS6799 All electrical works are required to meet the requirements of Part P (electrical safety) will be designed, installed, inspected and tested by a person competent to do so. Prior to completion the Local Authority must be satisfied that:

a. An electrical installation Certificate issued under the competent person scheme has been issued, or
b. Appropriate Certificates and Forms defined in BS7671 have been submitted that confirm that the work has been inspected and tested by a competent person. A competent person will have a sound knowledge and experience relevant to the nature of the work undertaken and to the technical standards set down in BS7671, be fully versed in the inspection and testing procedures contained in the regulations and employ adequate testing equipment.
Smoke and heat detectors to be wired to mains supply complete with battery backup and to be located as indicated on drawings within kitchens, hallways and landings.
4) TV distribution system / Cat5/ Data / Voice / Alarm / CCTV etc. by specialist contractor appointed by client.

ELECTRICAL WORKS
Electrical works by a competent person scheme member:
Full details of all notifiable electrical works to be carried out, including earthing provisions and wiring diagrams must be provided to building control - where an existing installation is to be adjusted a report on the existing installation suitability to carry the new loadings should also be included.
All wiring and electrical work will be designed, installed and inspected and tested by a person qualified to do so in accordance with the requirements of BS 7671, the IEE 17TH edition wiring guidance and building regs Part P electrical safety. On completion of the works a copy of installers electrical installation certificate compliant with BS 7671 is to be provided to the local authority and prior to covering of all wiring / cables the installation is to be inspected by building control. This could include a second check and testing of the installation by a competent person scheme member. Any defective works found will be corrected at the owner's experience.
Electrical works by a competent person scheme member:

Lighting (energy saving provisions)
To any new wiring system or when rewiring an existing lighting system - install light fittings as follows. - (note fluorescent or compact fluorescent light fittings must meet this standard. GLS tungsten lamps with bayonet caps or screw bases or tungsten halogen lamps are not acceptable)
Fixed internal lighting: install energy light fittings that only take lamps having a luminous efficiency greater than 45 lumens per circuit - watt (power consumed) as indicated below i.e. pin base fittings only, to ensure only energy efficient fittings can be replaced
Provisions a) 1 per 25m2 of dwelling floor area (excluding garages) or part thereof of b) 1 per fixed lighting fittings.
Note a) a light fitting may contain more than 1 lamp; b) energy saving fittings provided to cupboards/ storage areas cannot be counted; c) Energy efficient lights can be installed in locations that are not part of the works, i.e. replace landing fittings when creating new bed room in a loft,.
Fixed external lighting: (Excludes flats common areas and other communal access-way lighting)
Provisions: a) Either lamp capacity not to exceed 150watts per light fitting and fittings to have automatically daylight and motions sensors fitted. Or
b) Fittings to have sockets capable of only using lamps with and efficiency greater than 40 lumens per circuit - watt.

ELECTRICAL INSTALLATION BRIEF / PERFORMANCE SPECIFICATION.
Rewire as per the electrical brief below - all fittings to be agreed
/located with the Architect and Client on site.
Note that this is a performance specification for information only in the unlikely event that a full rewire will be required. Existing system to be extended wherever possible to include only the fixtures and fittings noted on the electrical legend within drawing number M2331.43
All fittings to be located in strict accordance with the Lifetime Homes Living Standards.
SCHEMATIC LAYOUT supplied only for tender purposes.
Electrical installation to be completely rewired and to include new light fittings, switches, power sockets, etc. as indicated on drawings. Include also for 33% low voltage light fittings.
All works to be in accordance with the latest IEE regulations and Part P.B.REGS.
Light switches and power sockets to be set at heights to be agreed with OT and end user on site.
Provide and fix new consumer unit with RCD protection to power circuits located as indicated on the drawing.
Provide linked mains smoke and heat detectors with battery back up where indicated.
Provide new wall mounted extract fan in BATHROOM (15 l/sec) connected to light switch with 15 min over-r grille as shown on plan to manufacturers recommendations.
Any security lighting to be energy efficient and controlled and have a maximum voltage of 150w, i.e. fitted with movement detection, shut off device (PIR) and fitted with photo cell for dusk to dawn operation
Provide isolation switch with fused spur including neon indicator light over work top to the socket serving for washer/ fridge/freeze under work top
Provide isolation switch fused spur to extraction fans, new boiler and within lobby for intruder alarm.
Provide Low energy efficient light fitting in roof space with switch adjacent to loft access hatch.

Allow for builders works in connection with the above installations.

Kitchen
6 Double sockets with indicating lights
2 Single Sockets with switched spur above WT
2 One way light switch
1 Cooker Point with one electrical socket outlet
1 Switched spur for heating boiler (if one installed)
1 Extract fan with switched fused spur (60 litres/second) connected to light switch
1 Heat detector linked to smoke detectors
Consult Client for requirement of feature lighting to kitchen units and extractor hood

Utility
3 Double sockets with indicating lights
12 One way light switch
1 Switched spur for heating boiler (if one installed)
1 Extract fan with switched fused spur (60 litres/second) connected to light switch
1 Heat detector linked to smoke detectors
Consult Client for requirement of feature lighting to kitchen units and extractor hood

Lounge
4 Double sockets
1 One way light switch
1 Security Timer for room light
1 Carbon Monoxide Detector
2 no. BT tel. sockets

Dining
4 Double sockets
1 One way light switch
1 Security Timer for room light
1 Carbon Monoxide Detector
2 no. BT tel. sockets

Breakfast / Study Area
4 Double sockets
1 One way light switch
1 Security Timer for room light
1 Carbon Monoxide Detector
2 no. BT tel. sockets

Hallway
1 Double Socket
One and two way light switches as shown on schematic
2 Smoke detectors with optical sensors, linked and mains wired with battery back up

Stores
1 One way light switch (low energy)

Bathrooms / En-Suite / W.C. and Shower Rooms
1 Pull switch light (low energy)
1 Extract fan with switched fused spur (15 litres/second) connected to light switch
1 low energy light with shaving point to bathrooms, en-suite and shower rooms.

Security Rear of Dwelling
1 2D low energy bulkhead light fitting adjacent door with night sensor and switch internally

Security Side of Dwelling
1 2D low energy bulkhead light fitting adjacent door with night sensor and switch internally

New Consumer Unit
1 Consumer unit controlled by RCD and MCB's

Electrical Earth Bonding
Kitchen, Bathroom, Airing Cupboard.

Dwelling Earth
Earth Rod and cabling.

PROPOSED GABLE ELEVATION

PROPOSED ELEVATIONS

scale 1:100 01 02 03 04 05 06 07 08 09 10m
1:50 01 02 03 04 05m

ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO ORDERING OR ERECTING MATERIALS DO NOT SCALE.

Davenport and Flinn Ltd
Architects, Planning & Design Consultants
3A Hamnett Street , Hyde, SK14 2EX
Tel No. 0161-368-3064

Drawing Title
EXISTING + PROPOSED ELEVATIONS + NOTES.
Project Title
Mr. N. Walker
37 Higham Lane, Gee Cross
Hyde SK14 5LX

REV. "A" "B"	DRG.NO. 6486 - 03
DATE MARCH 24. MAY 2020	SCALE 1:100 @ A 1