Proposed Extensions and Alterations at 144, Leek Road, Cheadle, Staffs. ST10 1JL

Scale 1-50 (A1) -proposed layout Dwg ref LR1d September 2020

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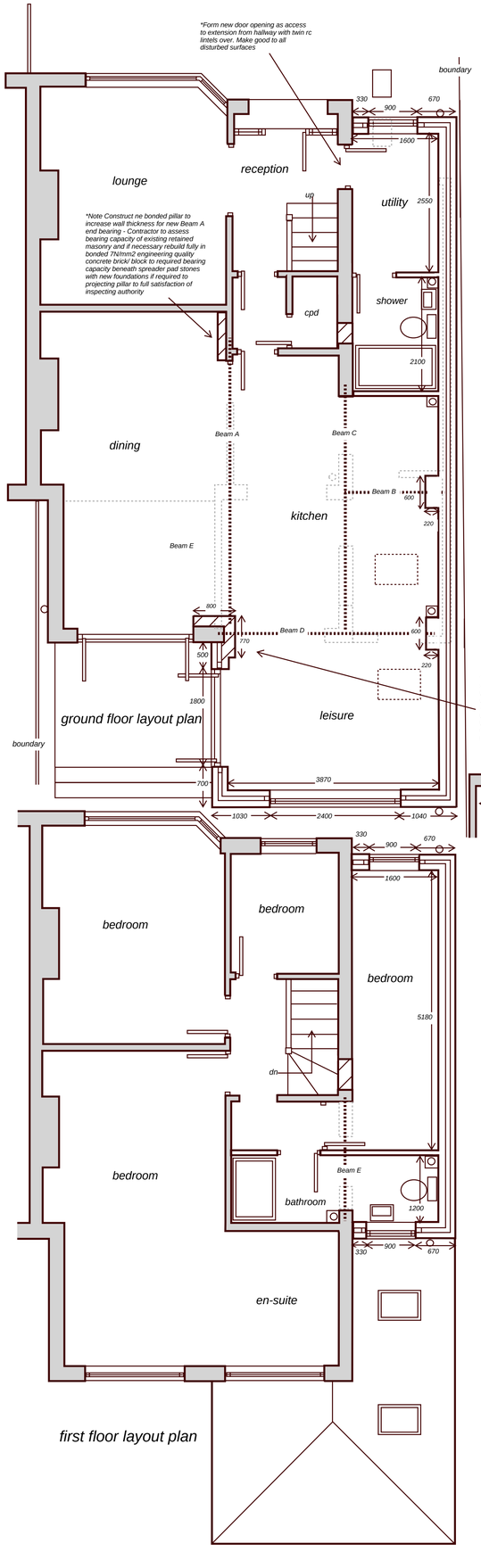
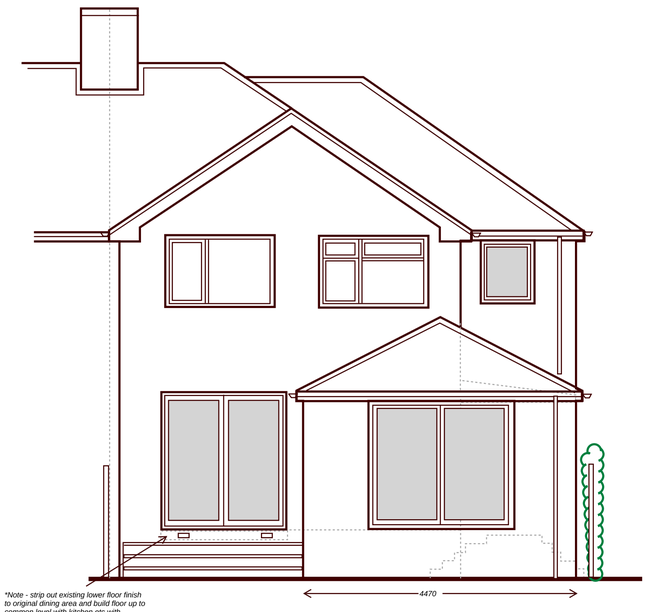
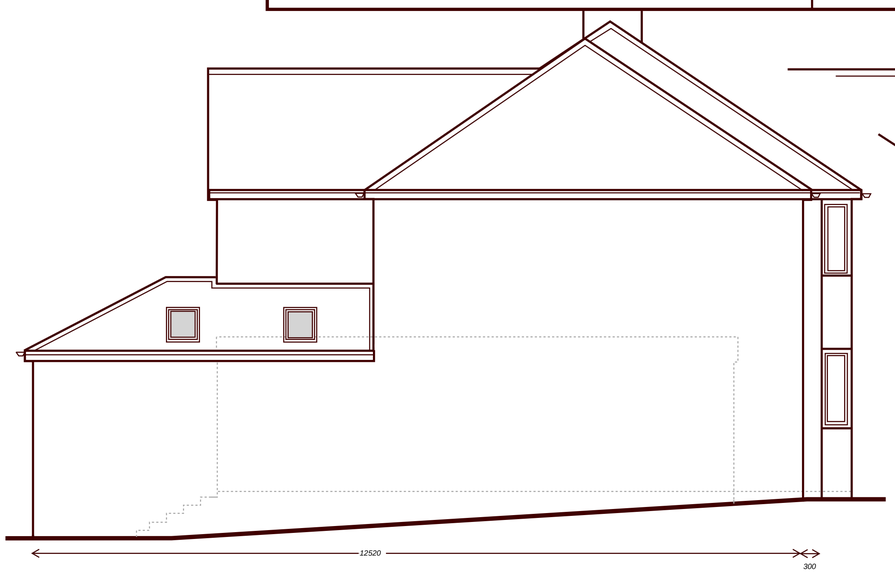


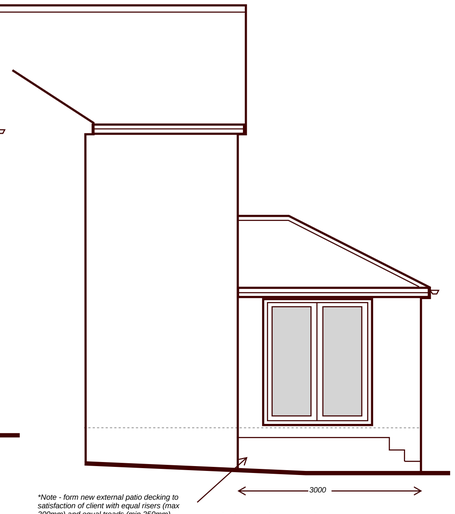


*Note - strip out existing lower floor finish to original dining area and build floor up to common level with kitchen etc with approved floor finish to client requirements on 21mm ply deck over sw joists at 450 centres as required.
*NB provide permanent external ventilation to enclosed void fitted with flyscreen

rear elevation



side elevation

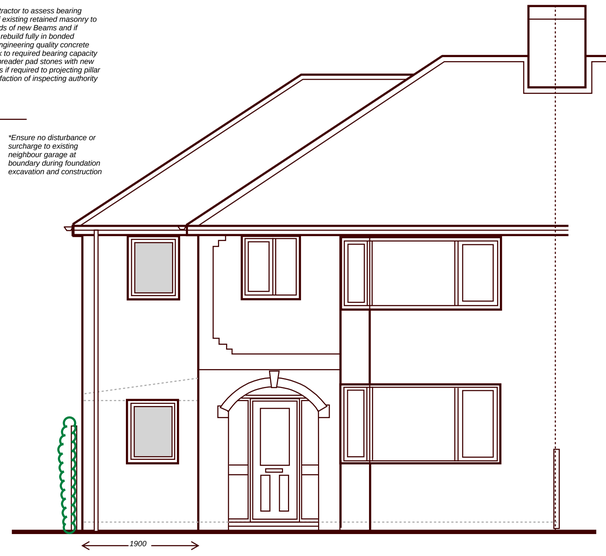


*Note - form new external patio decking to satisfaction of client with equal risers (max 200mm) and equal treads (min 250mm) forming steps down to garden level.

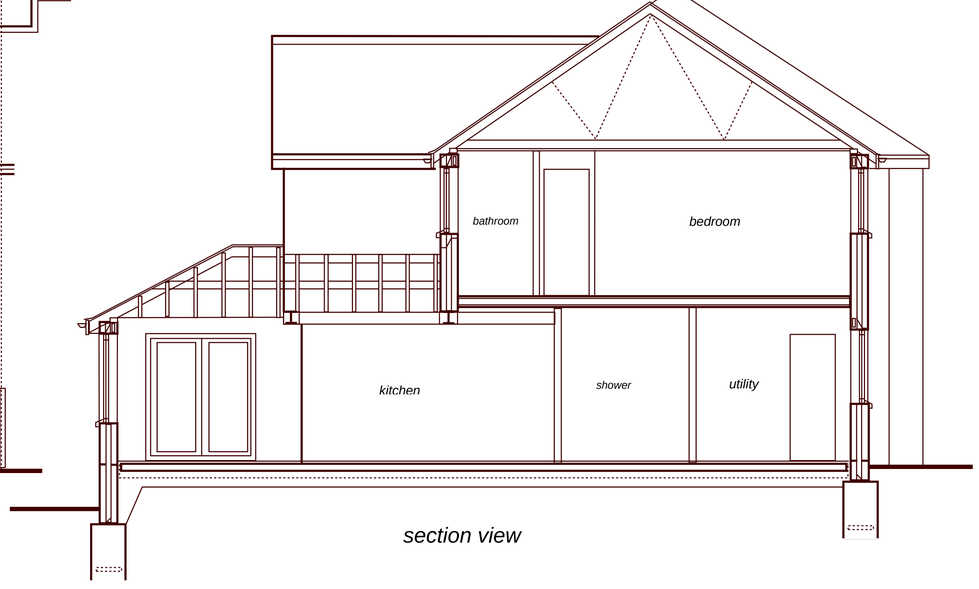
side elevation

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

*Ensure no disturbance or surcharge to existing neighbour garage at boundary during foundation excavation and construction



front elevation



section view

*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.
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***Structural Works:**
*Install steel beams all encased in gyproc fire line board to achieve min. 30 minutes fire resistance. See Engineer's design sheets for all structural beam etc information including pad stone sizes and beam connection details.
*Beam schedule (All steel grade S355)
Beam A - 254 x 146 x 37 UB
Beam B - 203 x 203 x 46 UC (+8mm steel plate welded to top flange)
Beam C - 203 x 203 x 60 UC (+8mm steel plate welded to top flange)
Beam D - 203 x 203 x 60 UC (+8mm steel plate welded to top flange)
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

***General Specification:**

***Preliminary Works:**
Carefully dismantle existing lean to porch and store and completely remove from site to approved licensed tip facility.
Closely examine existing internal structure and position of floor joists and load bearing walls to verify assumed loading p[oints used in new structural design. Examine existing drainage runs at site to assess falls and lines and verify drainage layout
Check existing foundations to assess type to match and ground bearing conditions etc.
*See separate notes for foundation precautions for tree root growth etc.

***Walls (External):**
Selected faced brick to match existing dwelling with min 100mm cavity enclosing Dritherm 32 insulation fill to manufacturer specification and internal leaf of approved 100mm load bearing thermal block work faced internally with plasterboard on treated battens or cement dabs.This or similar construction to achieve max 0.28 w/m2 k U-Value.
*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. Install Thermabate or similar insulated cavity closures at all opening jambs.

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

***Main Roof:**
Plain double lap tiles to match existing type and pitch fixed in place in accord with manufacturer specification and BS5534 on treated battens on approved breathable membrane over 125x50mm sw C16 rafters 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.
Horizontal Ceilings to have 100mm rock wool between joists and a further 200mm thickness laid across joists
Note: This or similar construction to achieve max 0.16 w/m2k U-Value.

***New Single Storey Roof at Rear:**
Selected tiles to match dwelling suitable for pitch (approx. 25 degrees) fixed in place in accord with manufacturer specification and BS5534 on treated 25mm deep battens on approved breathable membrane over 150x47mm 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. Form higped ends with 200x63mm sw C16 higped members with
feet to be notched and screwed to 100x75mm diagonal dragon ties robustly secured to wall plates at corner and provide additional vertical twist steel strap securing faces of hip member and dragon tie. All framing should be completed before roof coverings are laid. All members should be fully supported and tied together. If necessary, temporary support to long span members should be used until the framing is complete.
Head of rafters screwed to 200x38mm sw ridge.
**Provide raised ceiling ties at a maximum one third total roof height to maintain effective tie with 150x47mm sw C24 ceiling ties with M16 bolt and dog tooth washer connections to each rafter to restrict spread Provide double joists bolted together as trimmers to ceiling joists to tie side hip rafters to prevent roof spread - all to satisfaction of Inspecting Authority Surveyor.
NOTE : IT IS RECOMMENDED THAT A PREFABRICATED RAISED TIE ROOF TRUSS DESIGN BY SPECIALISTS MAY BE MORE APPROPRIATE TO RESOLVE THE ISSUE OF A HIGHER VAULTED CEILING FEATURE IF REQUIRED BY CLIENT.
Pitched ceilings to have Celotex XR4000 (120mm) insulation board between rafters ensuring min 25mm air gap behind roof membrane and under-draw with Celotex PL 4050 insulation backed plasterboard (50mm+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 0.16 w/m2k U-Value.

***Floor - Ground:**
Floor finish to client requirement on min 60mm screed or power float finish to 125mm concrete slab reinforced with 2 layers A193 steel mesh on 1200g dpm over Celotex GA 4000 (75mm) or similar approved insulation board turned up in 25mm thickness at floor perimeter to avoid cold bridge.
Lay further dpm over well blinded compacted natural stone sulphate free hardcore laid in max.150mm layers .
Incorporate flexible work/expansion joints as required to allow for separate concrete pours.
*U-Value max 0.22 w/m2k

***Floor - First:**
21mm t&g boarding across 150x50mm sw C16 grade joists at max 400mm centres set to level with existing first floor supported off heavy duty galvanised ms joist hangers fixed to comply with manufacturer specification or built in to walls with solid packing and minimum 90mm bearing.
Provide suitable strutting at half span with end wedges as necessary. Under draw joists with 12.5mm plasterboard to achieve min 30 minutes fire resistance incorporating vapour control membrane where required and enclosing 150mm dense acoustic quality Rockwool between joists. *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 M18 bolts and steel dog tooth washers at 600mm max centres.

***Foundation Detail:**
Subject to prior exposure of existing house foundation lay 600mm wide trench filled concrete strip foundations to new walls at depth to suit site conditions and to satisfactory bearing strata relative to potential influence of boundary side hedge root growth and to approval of Inspecting Authority. Reinforce throughout with 2 no layers B503 steel mesh or otherwise to Consulting Engineer recommendations and provide fibre board sheeting to boundary face of foundation trench to resist ground heave.
Foundation to overlap and step down in maximum 300mm height steps to follow contours in ground levels.
*New foundation to create no surcharge on drainage lines at any point.

***Drainage etc:**
Expose existing drains throughout new footprint and check available falls to ensure that new replacement layout shown will achieve self cleansing.
Lay new 100mm pvc drains on granular bed at min 1:40 falls to connect to existing system on site to satisfaction of Inspecting Authority.
Ensure adequate support and protection to all drains passing through walls and building footprint.
Internal waste plumbing to generally satisfy BS5572 with 75mm deep seal traps as required.
Bathroom and shower wastes to discharge to 100mm stub stack fitted with Durgo or similar air admittance valve positioned above flood level of fittings and connect at 1:40 falls to drainage system
Upvc rainwater goods to match existing carried to existing system as required throughout. *Note any new rainwater discharge points which cannot fall to existing drain sytem to be carried to approved garden soakaway chamber sited 6000mm from buildings and boundaries and subject to approved percolation test as required.

***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.
* Note install sockets to extension area to requirements of client and provide co-axial and satellite ports if 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.

***Fenestration:**
Install high performance double glazed upvc window / door units to client requirements using Pilkington Low E 'k' glass and min 25mm cavity – max 1.60 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.
*Escape Windows: provide opening casements to habitable rooms and inner rooms capable of safe egress in emergency i.e. min 0.33m2 clear opening set within 1100mm of internal floor level.
*install high performance velux type roof light to new leisure room (780x980mm) to client requirements and to manufacturer spec. with double trimmer rafters etc. as required. (U-Value 1.2 w/m2k)
Ensure that all doors and critical window areas are fitted with laminated or toughened safety glazing compliant with current BS:EN:12150.

***Lintels:**
Install Catnic or similar combined steel lintels over new external openings (unless steel beam is specified) with minimum 150mm end bearings to manufacturer spec. Approved single leaf reinforced concrete or steel lintels over internal openings.
Make good to all disturbed surfaces.

***Ventilation:**
Natural ventilation from opening casements plus install mechanical extract fan to new bathroom and shower room set to achieve min 15 litres/sec extract rate.
Also 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 utility to achieve 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.