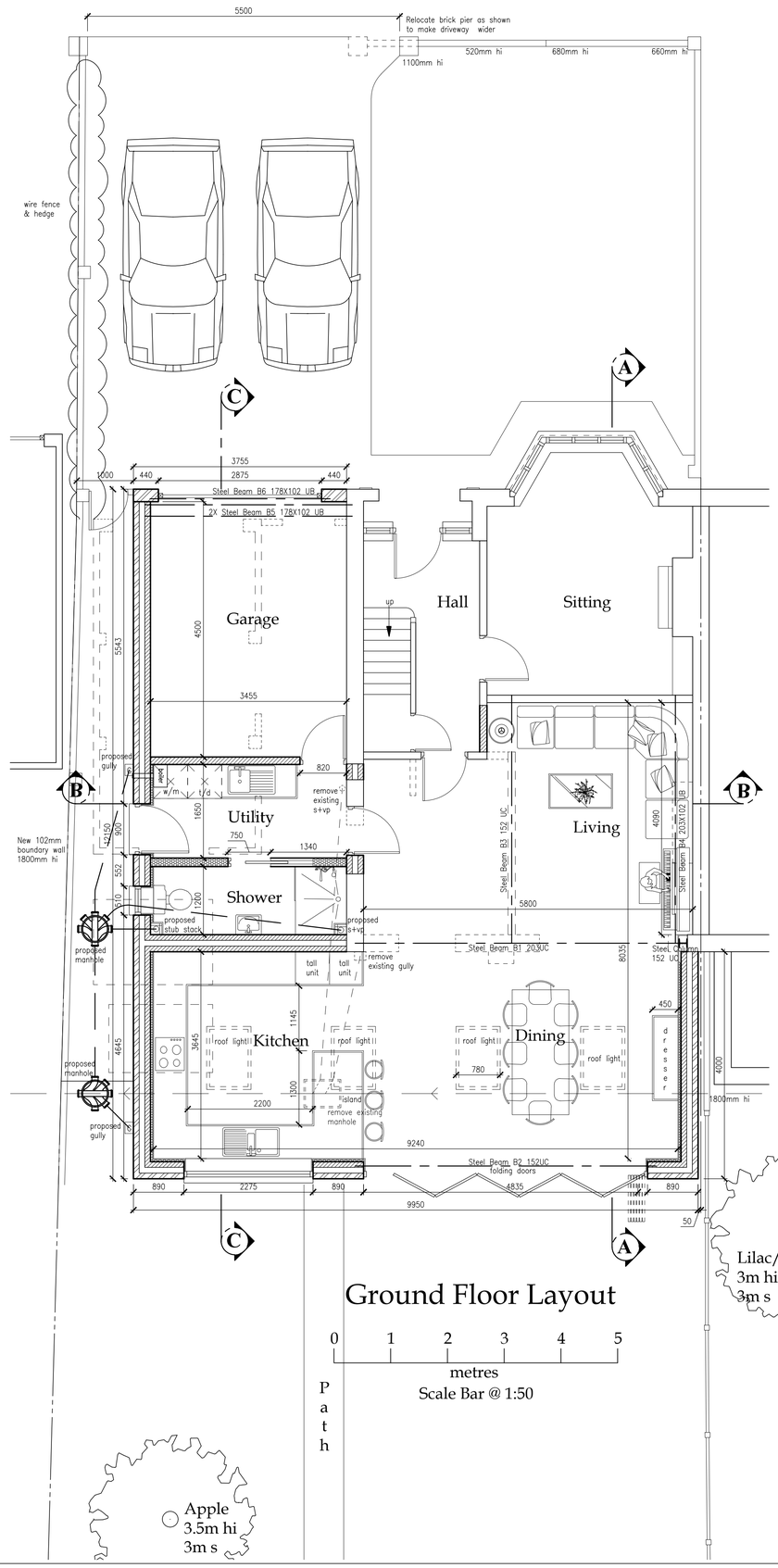
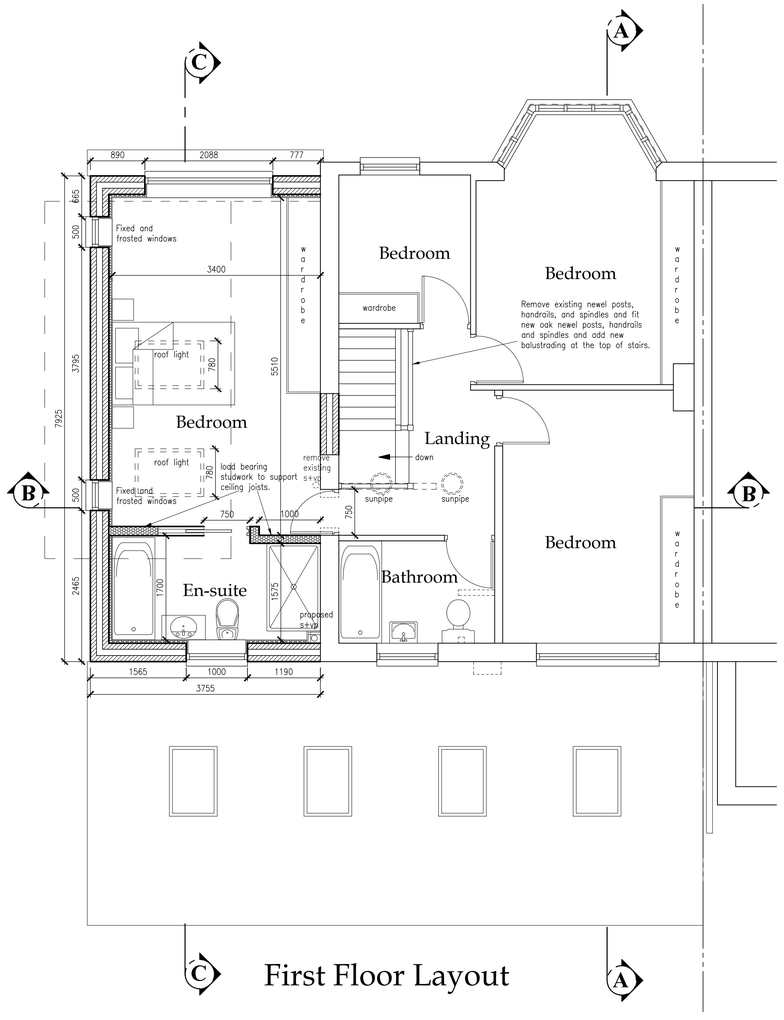


Elements For Calculation:

- Steel Beams B1–B6.
- Steel Column.
- Hip Flitch Beams FB1–FB2.
- Timber Post.
- Double joists to support load bearing studwork.
- Multiple rafters around rooflights.
- Double Rafters in new hipped roof.



SPECIFICATION

Foundations:– Min. 1m deep x 600 wide in GEN 1 concrete or to suit sub–soil conditions and to be agreed on site with the Local Authority.
Foundations to extend 600mm below any tree roots including fibrous tree roots.
Foundation on boundary line to be 600 wide and eccentrically loaded.
Insert bridging lintels in foundations where any drains pass through.
Check extg. foundations for suitability to carry additional loading and underpin if required in C15P concrete min 1m deep.
Garage foundations to be as above but 450mm wide.

Ground Floor Construction:– 65mm sand/cement screed on 100mm GEN 2 concrete on 500g polythene membrane on 100mm Celotex GA4000 insulation on 1200g polythene d.p.m. turned up at edges and linked to d.p.c on 150mm well compacted, sand blinded hardcore. Provide 25mm Celotex Tuff–R GA4000 edge insulation to concrete and screed.
Link new DPM to existing DPM with mastic seal to the joint.
New floor level to line through with extg.
Garage Floor to be 150mm GEN 2 concrete on 100mm well compacted hardcore, with 450x450mm toe below garage door.

Sub Floor Ventilation:– Remove any existing air bricks and lay 100mm dia. uPVC ducts set in thickened oversite from extg. apertures to new 225x75mm air bricks built into external walls to maintain ventilation to extg. ground floor construction.

Cavity Wall Construction:– 102 facing brickwork externally upto the height to match existing facing brick height, 100mm cavity with 100mm rockwool full fill or with 50mm clear cavity with 50mm celotex Tuff–R CW4000 or similar and 100mm plasmor aglite inner skin.
19mm two coat render applied in accordance with the block manufacturers instructions and to BS5262 and incorporating a waterproof additive on 100mm plasmor aglite from the height to match existing render, 100mm cavity with 100mm rockwool full fill or with 50mm clear cavity with 50mm celotex Tuff–R CW4000 or similar and 100mm plasmor aglite inner skin.
Provide 52.5mm Celotex PL4040 Insulated Plasterboard internally to the cavity walls and 27.5mm Celotex at reveals with 3mm skim finish.
Use stainless steel wall ties @ 750 horizontal and 450 vertical centres (225 at reveals) and provide thermabate cavity closer at reveals.
Lay a 100 wide horizontal d.p.c. to each skin, lapped at corners linked to existing d.p.c. and d.p.m. and min. 150 above finished ground level.
All work below d.p.c. to be brickwork and fill cavity with 10:1 semi–dry concrete to within 225 of d.p.c.
Use 152 UC with a steel plate underneath over bi–fold door. Provide medium duty angle cleats to every second rafter to mechanically fix rafters to steel beam.
Use Catnic CG90/100 lintels over rest of the ground floor openings and CGE90/100 over first floor openings, min. 150 end bearing.
Use C.T.&B. where new wall is flush with existing wall. Use furfix batten on an internal corner.
Provide type E Bit. felt cavity tray above lead flashing with weep holes below. For a lean to roof where it slopes up to an existing wall. If we have a lead flashing only 75mm below the window cill the cavity trays will only be between the windows.

Ground Floor Internal Walls:– 100mm load bearing blockwork with 13mm thick two coat plaster finish both sides, built off a horizontal d.p. course on concrete floor slab between utility & garage. 150mm non load bearing stud work to have pocket door for shower room.

First Floor Construction:– 22mm T&G chipboard moisture resistant type II/III glued at edges and secured with 65mm annular ring nails over 150x50 C24 floor joists @ 400 centres, ends build into new wall and treated with cuprinol or similar.
Ends of joists to be supported at house wall end on jiffy hangers over 150x50 plate bolted to house wall @ 600 ctrs. with 12mmø rawlbolts.
Ceiling to have one layer 12.5mm plasterboard with taped and filled joints.
Over garage provide 100mm Celotex tuff–R GA4000 insulation between joists.
Provide 100mm mineral wool insulation between joists.
Timber should be separated from the flue by at least 200mm.
New floor level to line through with existing.

Steel Beams:– Provide new steel beams as shown on floor plans & sections. See engineers structural plans and calculations for steel beam sizes, padstone sizes and connection details.
New steel beams to be encased with 19mm thick Gypsum plasterboard with wire binding at 100mm pitch and finished with 7mm Gypsum plaster finish, or Use brush applied intumescent paint only where beams contained within 1st floor void to achieve half hour fire resistance.
Provide adequate propping and bracing during construction.

Roof Construction Cut Roof:– Roof tiles to match extg.
Provide roofing to BS5534, including 50mmx25mm treated BS battens on one layer Tyvek 'Supro' breathable membrane on 150x50 C24 rafters @ 400 centres over 100x50 wallplates strapped down to walls @ 1.2m centres.
Provide double 150X50 C24 rafters where span exceeds 3.57m.
Provide a 200x38 ridge board.
Provide 200x100 flitch hip beams and supported on 100X100 timber post rasied over existing wallplate.
Provide multiple rafters bolted together all around 2 no. 1400x780 rooflights with jiffy hanger connections.
Provide 100x50 ceiling joists at 400 centers spanning between load bearing studwork and new 100x50 wallplate over en–suite..
Form valleys with pre–manufactured fibreglass valley units on 100x50 noggins.
Put 200x38 layboards on existing rafters and the new rafters will sit on top of these layboards.
Provide 2x 350 dia sunpipes in existing ceiling in landing area, fitted in accordance with the manufacturers instructions.
Ceiling to have one layer 12.5mm plasterboard with 150mm fibreglass quilt insulation laid between ceiling joists and 150mm laid across ceiling joists over en–suite.
Lay 100mm Celotex tuff–R GA4000 insulation board between rafters (with 50mm air gap above) and 75mm below to sloping ceilings with 12.5mm plasterboard finish.
Timber should be separated from the flue by at least 200mm.
Fascias to be 25mm treated softwood and soffits to be 9.5mm W.B.P. ply (or uPVC).
Provide Tyvek eaves carrier at eaves.

To Be Continued On BR–101

all dimensions to be checked on site as work commences and any discrepancies or omissions reported immediately.

client: Dr. M. Slater & Miss S. Gray,
5 Gallows Hill Lane,
Abbots Langley,
WD5 0DB.

job title: Proposed Two Storey Side/ Single Storey Rear Extensions And Alterations.

dwg title: Proposed Floor Plans & Location Plan.

dwg. no: 2023053-BR-100	drawn by: PG	scales: 1:50 @ A1
revision suffix: -	status: **Building Regs**	date: Sept. 2023

Rev.	Description	Date
-	-	-

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