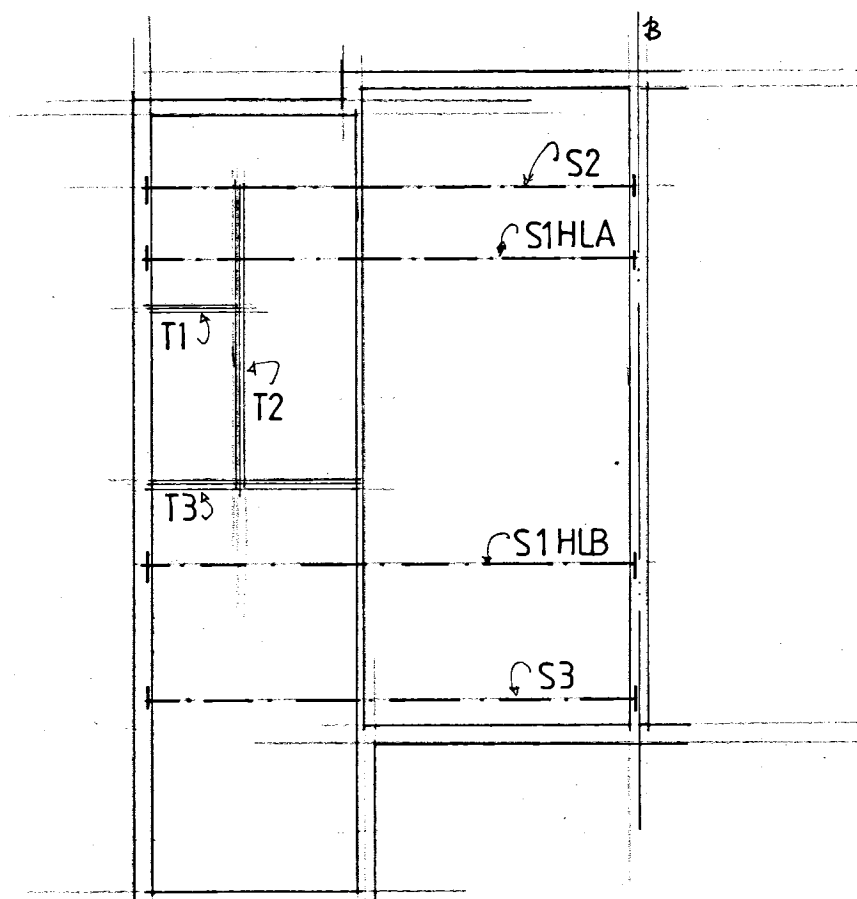
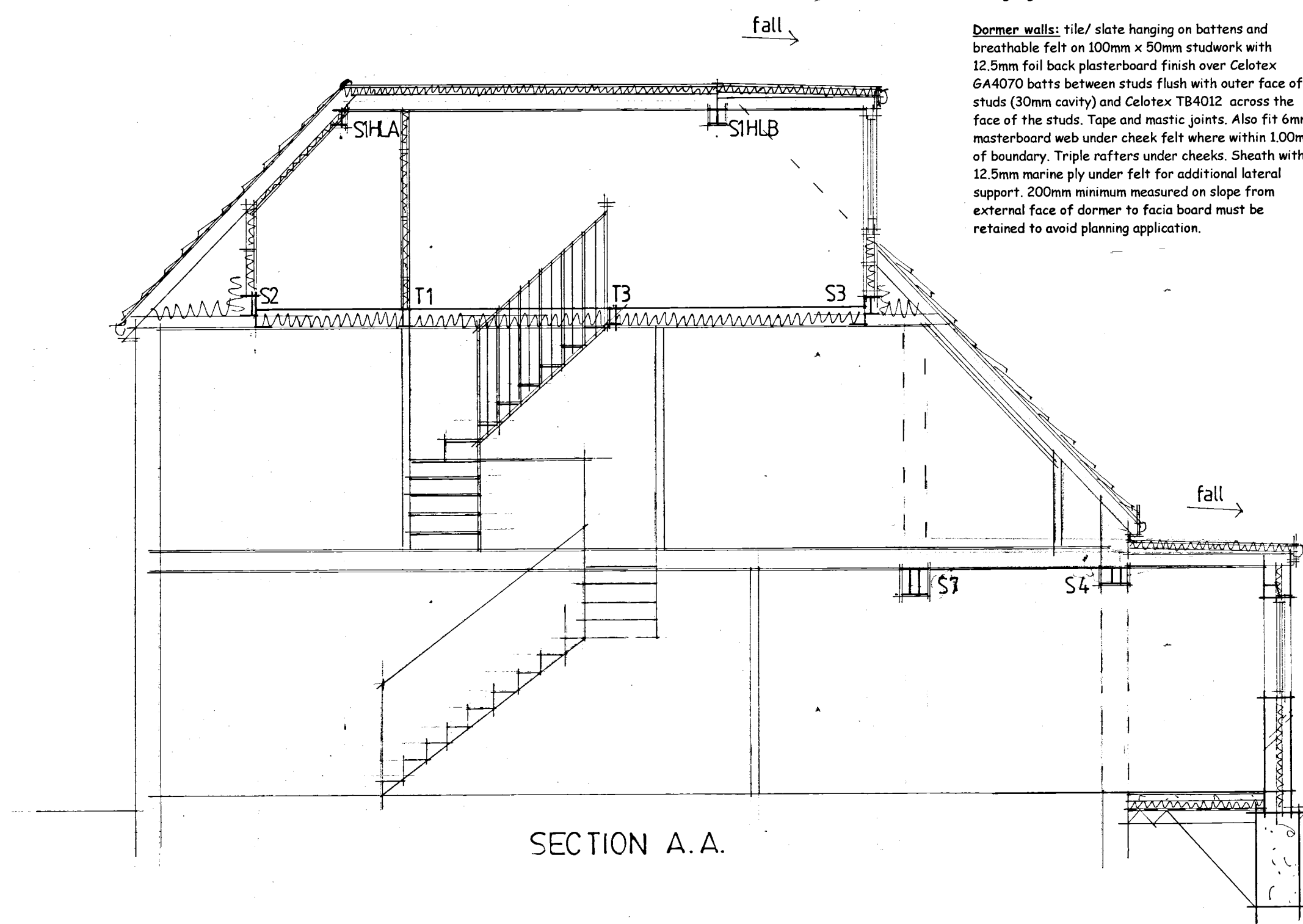




STRUCTURAL LAYOUT



SECTION A.A.

**Opening window** areas to be minimum 1/20" of enclosed floor areas. All new windows to be fitted with minimum 8000sq.mm. trickle vents per room. Maximum area of double glazed window not to exceed 20% of floor areas

**New windows:** new double glazed windows to have minimum U value of 1.6w/m<sup>2</sup>k. Doors to have a min U value of 1.80w/msq.k. Toughened glass in glazed doors and windows in critical locations, i.e.: alongside doors. Seal around window-wall joint with mastic sealant. Double rafters as roof light trimmers if applicable.

**Minimum full opening** size of escape window 0.33sq.m. min clear dimension of edge 450mm with sill below 1.10m from floor and above 800mm.

**Fit mechanical extract fans** to any new wc and bathroom areas rated at min 15lit/sec

**Fit mechanical extract fan** from kitchen rated at min 60lit/sec. If cooker hood installed, to be rated at 45lit/sec. Utility room if applicable to be rated at 30lit/sec.

**Steelwork:** see structural calcs for sizes. Minimum bearing 100mm on concrete padstones, prestressed concrete lintols or metal bearing plates. Encase in minimum two layers 12.5mm plasterboard for half hour fire resistance when fitted at floor levels. Lengths of steels to be site measured to include bearings.

**Studwork enclosing stairwell:** 12.5mm plasterboard each side of minimum 75 x 50mm studwork with taped and filled joints for minimum half hour fire resistance.

**Inner partition:** 12.5mm plasterboard each side of minimum 75 x 50mm studwork. Fit 25mm sound insulation quilt between held in place with battens.

**Outer studwork** 100x 50mm studwork with "Celotex GA4075 rigid batts vertically between the studwork flush with outer face of studs (25mm cavity) with Celotex TB4012 batts across the studwork face. Tape and mastic joints. 12.5mm foil back plasterboard finish.

**Floor in roofspace:** 21mm floor grade tongued and grooved chipboard, 2.3 grade in bathrooms on 50mm x 175mm joists at 400mm centres. Joists to be doubled where under and parallel to partitions over. Solid strut at third centres of joists spanning more than 2.40m. Remaining roof spaces to be floored as main area when joists extend out to outer walls. "Simpson strongtie" or similar galvanised joist hanger connection to steelwork where applicable. Purpose made ms shoe /hanger where flitch beams join to steelwork or other flitch beams. Fit min 100mm mineral wool batts between joists for sound insulation.

**Conversion of existing roofspace.** Sloping ceilings. Plant on, or fit alongside existing rafters to achieve 150mm depth. See section for detail. Fit Celotex GA4100 batts between rafters and Celotex TB4035 beneath rafters. 12.5mm foil back plasterboard finish. Maintain 50mm air gap to underside of roof covering.

**Stairs:** New staircase dimensions to be confirmed on site prior to manufacture. Maximum rise 220mm, minimum going on tread 220mm with minimum 16mm nosings, minimum going on winders 50mm. Minimum clear width 750mm, maximum pitch 42 degrees, minimum 2.0m clear vertical headroom off pitchline over new and existing stairs. Handrails minimum 900mm with vertical balusters at maximum 100mm centres. Allow to pack off party/outer wall to accommodate any required dry lining of wall above.

**Stair practical limits:** Stair risers and goings to be within the practical limits of risers 155/220 to be used with goings 245/260. OR risers 165/200 to be used with goings 223/300mm

**Dormer walls:** tile/ slate hanging on battens and breathable felt on 100mm x 50mm studwork with 12.5mm foil back plasterboard finish over Celotex GA4070 batts between studs flush with outer face of studs (30mm cavity) and Celotex TB4012 across the face of the studs. Tape and mastic joints. Also fit 6mm masterboard web under cheek felt where within 1.00m of boundary. Triple rafters under cheeks. Sheath with 12.5mm marine ply under felt for additional lateral support. 200mm minimum measured on slope from external face of dormer to fascia board must be retained to avoid planning application.

**Dormer warm flat roof:** Three layer built up felt to BS747 cp144 pt3 on Celotex TD4126 decking on firrings and 50mm x 125mm joists at 400mm ctrs. 12.5mm foil back plasterboard ceiling. Seal warm roof from existing vented roof space at join if applicable.

**Foundation** concrete trench fill, 450mm wide to min depth of 1 metre or to suit local ground conditions. (in clay soils min depth 1.2 metres) or to below invert level

**Floor** 50mm screed on 100mm concrete slab on Celotex GA4070 insulation batts on 1,200G damp proof membrane continuous with new and existing damp proof course, on minimum 100mm well consolidated hardcore with 50mm sand blinding. fit 100mm diam pvc ducts under slab terminating in 225x75mm airbricks to vent existing timber subfloors when required.

**External walls.** two skins 100mm lightweight concrete blockwork (Celcon Solar, Thermalite Turbo or similar rated) 100mm rockwall batt filled cavity. Render and set internal, two coat render external. Insulated 'catnic' lintols over new openings, tooth into existing walls and maintain all cavities. Close cavities at eaves with non-combustible material. Wall ties to be at 900mm ctrs vertically and 450mm ctrs horizontally and staggered. 'catnic' or similar vertical cavity thermal closers at openings. External perimeter of door and window openings to be sealed with a suitable airtight sealant.

**Extension Flat roof.** 13mm spar chippings on 3 layer high performance torch on felt to BS747 cp144 part 3 1977 on Celotex XR4120 insulated roof decking on firrings on 50mm x 175mm roof joists at 400mm centres. 12.5mm foil back plaster board ceiling. Strap down new roof with 1000 x 32mm galvanised mild steel straps at 1200mm centres. Ensure that wall insulation is taken up to meet underside of Celotex to ensure warm roof construction.

**Main roof.** concrete tiles on battens on breathable felt on 50mm x 150mm rafters at 400mm centres. Strap down with 100m x 32mm galv. ms straps at max 1.20m ctrs. Around perimeter.

**Roof insulation:** roof to be insulated with two layers of 150mm fibreglass insulation quilt. One layer laid between ceiling joist and one layer laid over in opposite direction. Maintain roof ventilation with 25mm continuous air to eaves and vent tiles to apex as shown.

**New warm flat roof:** Three layer built up felt to BS747 cp144 pt3 on Celotex TD4126 decking on firrings and 50mm x 200mm joists at 400mm ctrs. 12.5mm foil back plasterboard ceiling. Seal warm roof from existing vented roof space at join if applicable.

**Plumbing** all to BS EN 2056 plus approved doc H 38mm diam. wastes from sink, bath and shower. 32mm diam. Waste from wash hand basins, all with rodding access on changes of direction and with deep seal traps. Run to existing/new 100mm diam pvc svp terminating min 900mm above nearest window head and with rodding access at the base.

Run to 100mm diam stub stack terminating above appliance flood level with durgio autovent.

**Extend existing svp** into roofspace and terminate with durgio autovent. Or, if no other vent pipe on the drain run, extend svp up and within roof slope to terminate to air min. 900mm above window heads.

**Rain water goods:** run new 100mm diam pvc rain water guttering and 70mm diam downpipes to existing drainage system.

**All new electrical works** to be designed, installed, inspected and tested in accordance with BS7671 (IEE:17<sup>th</sup>Ed) the works are to be undertaken by an installer registered under a suitable self certification scheme or by a suitably qualified person with a certificate of compliance produced to building control upon completion of the works.

**Lighting.** Fit high efficacy light fittings minimum three per four new fittings. Any recessed ceiling lights to be 30minute fire resisting.

**SD ● smoke detectors:** fit smoke detector system wired to mains supply and to each other with battery back up system. One per floor minimum. All installed to BS 5839.6:2004 To be over 300mm from doors, walls and light fittings

**Party walls** to be lined with 12.5mm foil back plasterboard over Celotex GA4050 insulation batts on 25x50mm battens at 600mmctr. (25mm air gap) Tape joints before plasterboarding

Trim all timbers minimum 40mm from chimney stack faces.

All new radiators to be fitted with TRVs

Any wall or door glazing in the stair enclosure will be upgraded to achieve half hours fire resistance.

\* **fit 20/30** rated fire resisting doors with new 25x38mm stops, to all doorways opening onto route of escape (except bathrooms)

**Alternative fire protection:** If existing relevant doors are found to be in good condition and close correctly existing door stops can be replaced with new 25mm x 38mm door stops. Mains wired smoke detectors to be fitted in each room and hallway (except bathrooms) and heat detector installed in kitchen.

Fabrication details to be provided if required by building control.

**Build up gable wall** in cavity work, outer skin to match existing, 50mm 'Dritherm' batt filled cavity, 100mm Celcon Solar block inner skin. Line inner surface with Celotex GA4050 batts and 12.5mm foil back plasterboard. Tie to roof joists with 1000 x 32 x 5mm M.S. galvanised straps at 1200mm centres. Fit cavity tray at horizontal junction with existing cavity wall if not insulated.

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| Client                                                                                     |                                                                                      |      |
| MR T LAWSON                                                                                |                                                                                      |      |
| Job Title                                                                                  |                                                                                      |      |
| 40 THE DALE WIDLEY                                                                         |                                                                                      |      |
| Drawing Title                                                                              |                                                                                      |      |
| SECTION & NOTES                                                                            |                                                                                      |      |
| Scale 1:50                                                                                 |                                                                                      |      |
| Date JULY 2018                                                                             | Drawn by RN                                                                          |      |
| Org. No.                                                                                   | 2140-18-3                                                                            | Rev. |