STM Structural Engineers

STRUCTURAL APPRAISAL

FOR

PROPOSED ALTERATIONS & EXTENSION

AT

ATHERINGTON HOUSE

FORD LANE
FORD
WEST SUSSEX
BN18 0DE

Project No: 25045

August 2025

STM Structural Engineers Ltd.
[redacted]

Prepared by S Murphy CEng MIStructE

STM Structural Engineers

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BACKGROUND

Thank you for your recent instruction to carry out a limited visual structural inspection and appraisal of Atherington House with regards to its suitability for proposed alterations and extensions as outlined within Douglas Briggs Partnership drawings 1124-1 to 1124-7 inclusive.

Only the structural integrity of the area of building proposed to be subjected to structural alterations was inspected. Our inspection was carried out during the morning of June 26th 2025, during dry weather conditions.

Our inspection was of a surface visual nature of the affected areas only; structure obscured from view could not and has not been inspected and therefore cannot be confirmed as being free from defects. Furthermore, this report relates to the observed structural matters only and does not comment on any other areas nor any architectural / general surveying aspects. We have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible. We are therefore unable to report that any such part of the property is free from defect. The extent of our appraisal is as described above and therefore the following commentary on the proposals is not intended to be a full structural report on the condition of the property. The inspection was carried out from ground level only where external.

GENERAL DESCRIPTION & FINDINGS

- Atherington House is part of a Grade II Listed property that has been divided into separate dwellings. The property has been altered and extended numerous times in the past.
- The original building is assumed to consist of traditional masonry wall construction (brick and flint); a cellar (constructed of brick walls); ground bearing floor slabs with timber suspended upper floors and a traditional cut timber pitched roof construction.
- The single-storey ground floor extensions are generally of masonry cavity walls with a flat roof construction. The existing hall and dining area roofs are assumed to be constructed with timber joists, the store/shower area is a converted garage building which has a concrete flat roof. The conservatory forms the main entrance into the property and is of UPVC glazing/construction with low level brickwork dwarf walls.
- The external walls appeared in generally sound condition. Some isolated areas may require repointing, and some areas were noted to have minor vertical cracking relating to differential settlement. The external junction of the living room and study wall had repointing scars from previous crack stitching repairs. The age of these repairs is unknown, but the movement did not appear to be ongoing.
- The existing foundations were not exposed, but no significant areas of subsidence, heave or settlement were noted to the walls.
- Some minor (hairline) cracking was noted to the building, but this did not appear to be of structural concern and could be repaired with a combination of redecoration, repointing and/or crack stitch repairs and part of routine building maintenance.

1 – ALTERATIONS TO EXISTING SINGLE-STOREY STORE AND SHOWER ROOM:

- The original brick garage has previously been converted into a store and shower room. It is proposed to convert the store into a utility room, properly insulate the walls and replace the concrete flat roof with a pitched tiled roof with raised ceiling ties.
- Some damp was observed to the external walls, and the clear internal height was very limited at approximately 2.1m floor to ceiling.

- The existing flat roof appears to be approximately 125mm thick insitu RC concrete and uninsulated. The main garage door lintel is suffering from corrosion to the rebar causing cracking to the concrete slab. The proposals include the removal of the defective modern garage door lintel and partial infilling of the garage door opening with masonry walling and window which will be constructed from a new foundation.

- The proposed new pitched roof will be constructed from the existing walls as a traditional cut timber roof with a raised ceiling and be suitably designed to resist roof spread.

2 – FORMATION OF FRONT DOOR FROM EXISTING WINDOW OPENING (West Elevation):

- The proposal is to lower the window cill to form a new door opening and to introduce a new canopy above the door. Works to this area will include the diversion/removing of modern utility services that run externally below the cill.

- The existing window surround has had previous works/repairs as noted in the brick/flint/render pointing.

- The width of the opening is to remain. No alterations are anticipated to the flat brick arch lintel forming the opening.

- None of the proposed works to this area are of structural concern.

3 – FORMATION OF INTERNAL DOOR FROM EXISTING INTERNAL WINDOW OPENING:

- The existing window is proposed to have its cill lowered to allow the introduction of a door.

- The width of the opening is to remain, allowing the existing lintel to remain unaltered.

- This proposal has no structural concerns.

4 – FORMATION OF STORE CUPBOARD:

- This new store cupboard is to be formed in an existing door opening using lightweight timber studwork from the existing ground bearing floor slab.

- The structure forming the existing opening is to remain unaltered.

- This proposal has no structural concerns.

5 – UPGRADING OF CELLAR ACCESS:

- The existing access into the cellar is unorthodox, requiring the lifting of a floor hatch followed by opening a door suspended over the hatch, to gain access to the cellar.

- Significant timber strengthening/supports to the stair over (ground to first floor) have previously been introduced, and the existing stair to cellar has had modifications carried out.

- The proposal to provide a new access to the cellar is sensible and will require minimal structural alterations to strengthen/support the new stud partitions and ground floor.

6 – UPGRADING THERMAL PERFORMANCE OF EXISTING MODERN SINGLE-STOREY EXTERNAL WALLS:

- The walls are proposed to be lined to improve the insulation. This is of no structural concern.

- The existing sliding doors are to be replaced with bi-fold doors. Due to the additional loading from the first-floor extension and deflection-sensitivity of bi-fold door systems the lintel to this opening will be replaced to suit the reduced opening width.

7 – REMOVAL OF EXISTING CONSERVATORY AND FORMING PROPOSED KITCHEN WITHIN EXISTING FLOOR SPACE:

- The existing conservatory is to be carefully demolished and removed.
- The existing wall between the conservatory and dining area is to be carefully demolished. The span of the adjacent flat roof joists is to be investigated prior to deconstruction. A steel beam may be required to the wall location to support the existing flat roof. It may be necessary to provide new flat roof joists throughout this new flat roof to achieve required head height levels, drainage falls, insulation and ventilation requirements. All subject to further investigations and detailed design requirements.
- The existing rear window to the dining area is to have its cill lowered to become a bi-fold door. The proposals include a new lintel to accommodate the deflection-sensitivity of a bi-fold door system.
- The proposals include new sections of loadbearing external brick walling on the south and west elevations, all built from new concrete foundations and to match existing adjacent walls.
- None of the alterations/additions to this area are of structural concern.

8 – FORMATION OF DRESSING AREA AND BATHROOM WITHIN EXISTING FLOOR SPACE (Bedroom 1):

- The existing bedroom is to be converted into a dressing area and ensuite bathroom.
- The existing first floor is assumed to be of timber construction, but the floor joists sizing and span directions are unknown. The floor has been overboarded and intrusive investigations will be required to expose the joisting to allow a design review to be carried out to the existing floor structure. It is likely that the joists will need to be doubled-up locally to the new studwork partition and bath. Any localised joist strengthening works which may be required to reinforce the existing floor structure can be undertaken within the depth of existing floor construction and will not be visible once complete.

9 – FIRST FLOOR BEDROOM EXTENSION OVER EXISTING FLAT ROOF AREA:

- Access into the first-floor extension is to be through an existing full-height window. The amendments to this opening have no structural concerns or requirements.
- The bedroom extension is proposed to be constructed of lightweight timber stud construction supported from steel beams as necessary. The lightweight nature of the proposals aims to avoid introducing unnecessary additional loading to the existing building.
- The roof is planned to be open/vaulted. Ceiling ties or feature trusses (or similar) are proposed within the roof design to control potential roof spread.
- The external walls and internal wall panel to the head of the bed will all be loadbearing.
- The existing flat roof joists are considered unlikely to be suitable for reuse as floor joists. It is assumed that this area of flat roof will be replaced.
- Steelwork will need to be introduced within the first floor/flat roof to support the new structure.
- Provision is made for the possible requirement of steel posts be provided to support the extension along the living room external wall. This would be determined/confirmed following local investigations to the existing foundations and a review of their capacity for additional loading.
- The original building foundations are considered suitable for the additional loading due to it being a small percentage of additional load and the cellar increasing the allowable spread of loading and likely allowable ground bearing pressure.

CONCLUSION

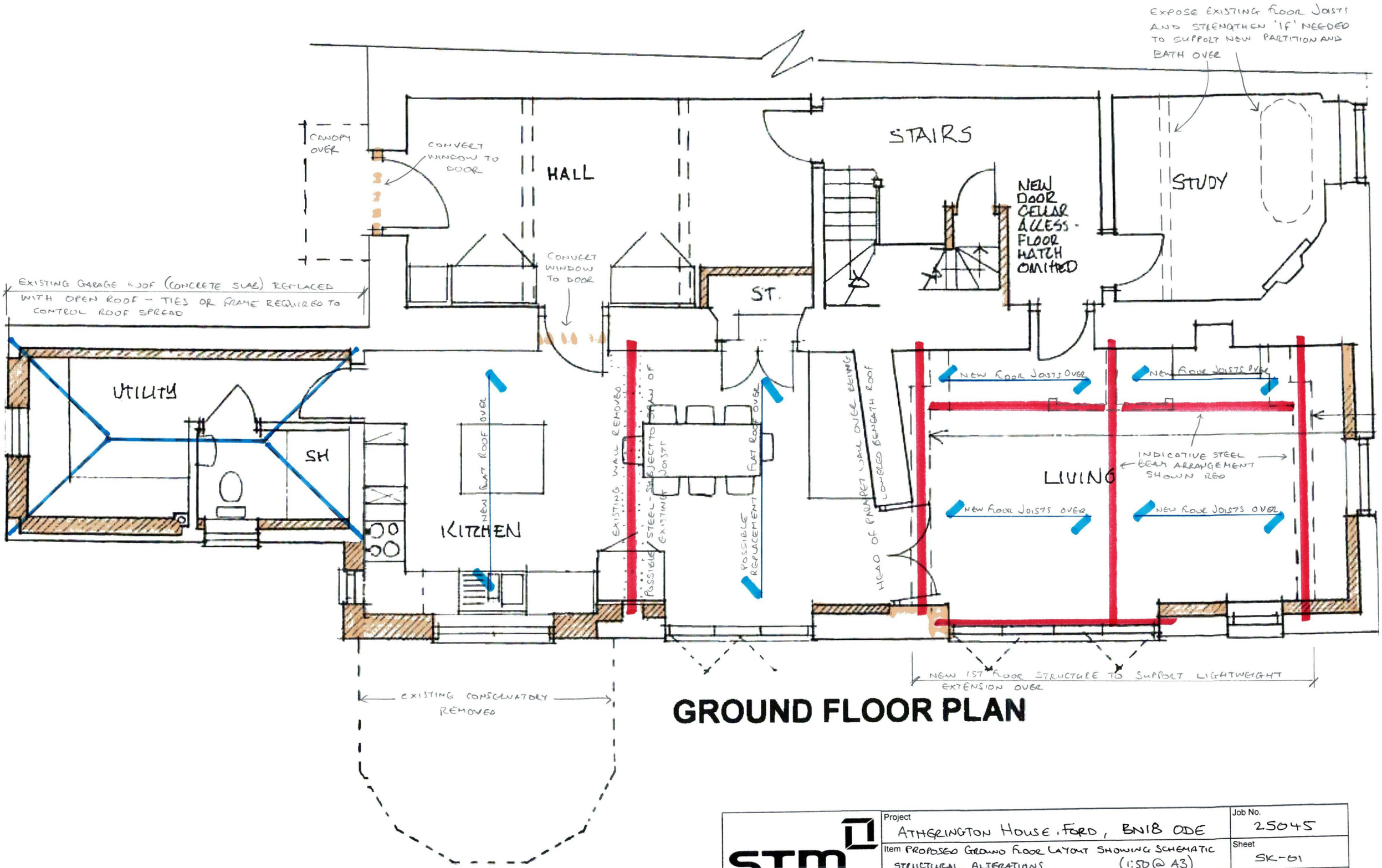
From a general structural perspective, the existing building is considered to be of robust and structurally sound construction which is capable of accommodating the proposed alterations and extensions, without recourse to substantial demolition or reconstruction, providing the general methodology and points raised above are complied with.

The proposals include addressing existing emerging structural concerns, e.g. defects in the original garage reinforced concrete lintel and roof slab which originated in the 1950's works, and the proposals could reasonably be regarded as enhancements.

I trust this information addresses the structural integrity of the existing building for the proposed conversion and confirms that the proposals can be suitably carried out without substantial demotion or reconstruction.

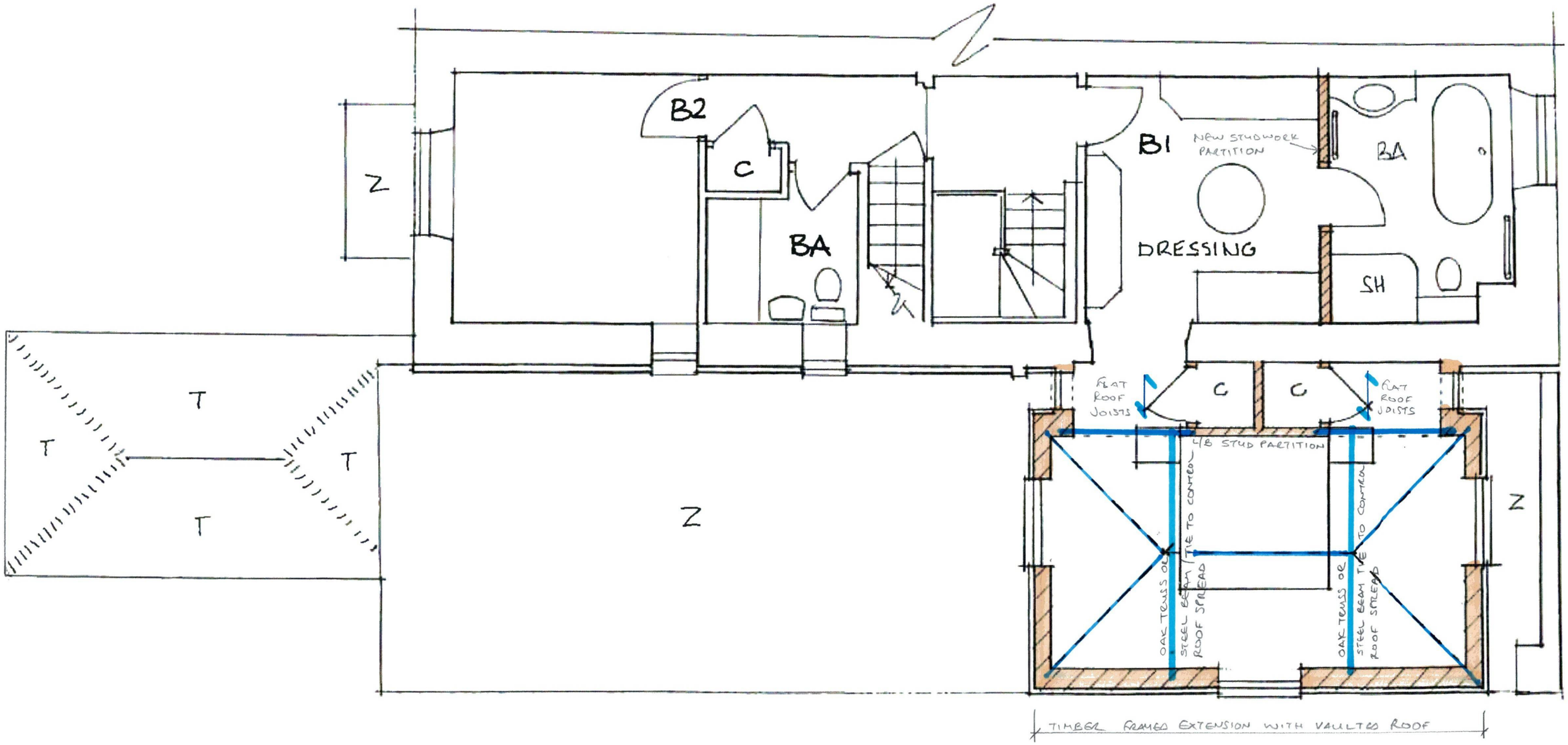
[redacted]

Stephen Murphy CEng MIStructE
for **STM Structural Engineers**



GROUND FLOOR PLAN

STM Structural Engineers	Project: ATHERINGTON HOUSE, FORD, BN18 0DE			Job No. 25045
	Item: PROPOSED GROUND FLOOR LAYOUT SHOWING SCHEMATIC STRUCTURAL ALTERATIONS (1:50 @ A3)			Sheet SK-01
	Date: AUG. 2025	Designer: SM	Checked	Revision



FIRST FLOOR PLAN

STM Structural Engineers	Project: ATHERINGTON HOUSE, FORD, BN18 0DE			Job No. 25045
	Item: PROPOSED FIRST FLOOR LAYOUT SHOWING SCHEMATIC STRUCTURAL ALTERATIONS (1:50 @ A3)			Sheet SK-02
	Date: AUG. 2025	Designer: SM	Checked	Revision