



## STRUCTURAL ENGINEER'S REPORT



The Castle Inn  
Hickstead  
West Sussex

Dated 5<sup>th</sup> August 2025  
Ref 24283 R01

1.0 Client's Name

Gill Harvey

2.0 Scope of Instructions

We have been instructed to prepare a Structural Engineer's report with regard to the structural alterations at the subject property, as raised by Mid Sussex Planning dept.

3.0 Address of Property

The Castle Inn  
London Road  
Hickstead  
West Sussex  
RH17 5LZ

4.0 Structural Engineer

Guy Macken

5.0 Company Details

Mitchinson Macken Ltd  
Unit 1, 100 North Road  
Brighton  
East Sussex  
BN1 1YE  
Tel. 01273 609742  
Email: [Info@mitchinsonmacken.co.uk](mailto:Info@mitchinsonmacken.co.uk)

6.0 Introduction

This report is based upon numerous site visits to inspect the underlying structure exposed during the renovation process. Wherever possible original structural elements have been left in place, with strengthening where they would not meet Building Regulations.

## 7.0 General

This is a two-storey semi-detached building, with additional service space in the basement area. Brick external walls are supporting timber floors and roof.

The underlying ground conditions are expected to be Weald Clay, which can cause issues of subsidence. However, the age of this property would normally mean that all movement would have taken place early in the life of the building. The current proposals do not include new foundations so we would not expect issues of movement relating to soil heave and shrinkage.

## 8.0 Basement Level

The ground floor bar area has had issues with defective floor structure for some time. Temporary strengthening and propping was observed in the cellar rooms, blocking access to these areas. This was installed in the past to take the bounce out of the floor and support areas that had failed.



We checked the sizes of the existing timber joists and they were found to be undersized for the normal structural requirement for a bar area.

The floor would not meet Building Regulations in its original condition. Therefore, additional steel beams were installed below the joists as a permanent way to reduce the span of the joists. This technique ensures that the original joists and floorboards could remain in place.

It should be noted that there were already 4no. older steel beams across the building, supporting the floor joists. However, the spacing of these beams was not sufficient for the size of the existing joists. Therefore 8no. additional beams have been added. These also reduce the weight to the existing steel beams so that they can be left in place too.

The historic fabric of the building all remains in place, with the original cellars now able to be used with unrestricted access.



The beams were shown on our drawing 24283-04A, as attached to this document.

## 9.0 Kitchen Area

The original ceiling was a modern suspended tiling system. This was not part of the historic fabric of this building. Prior to the current renovation, the kitchen ducting was removed from ceiling level, damaging the suspended ceiling. The ceiling was subsequently removed exposing the timber roof structure.



At the time of our first inspection, it was clear that the roof timbers had been crudely cut and modified to allow a section of wall to be removed. This allowed the widening of the kitchen space towards the rear.

We checked the sizes of the existing timber parts and they were found to be undersized for the normal structural requirement for a roof. In particular where the older roof had been cut away, the support was found to be inadequate and would not meet Building Regulations in its original condition. It appeared that the roof had been spreading outwards and damaging the external walls. Therefore, additional timber ties and trimmers were added below the rafters and joists as a permanent way to support the roof.

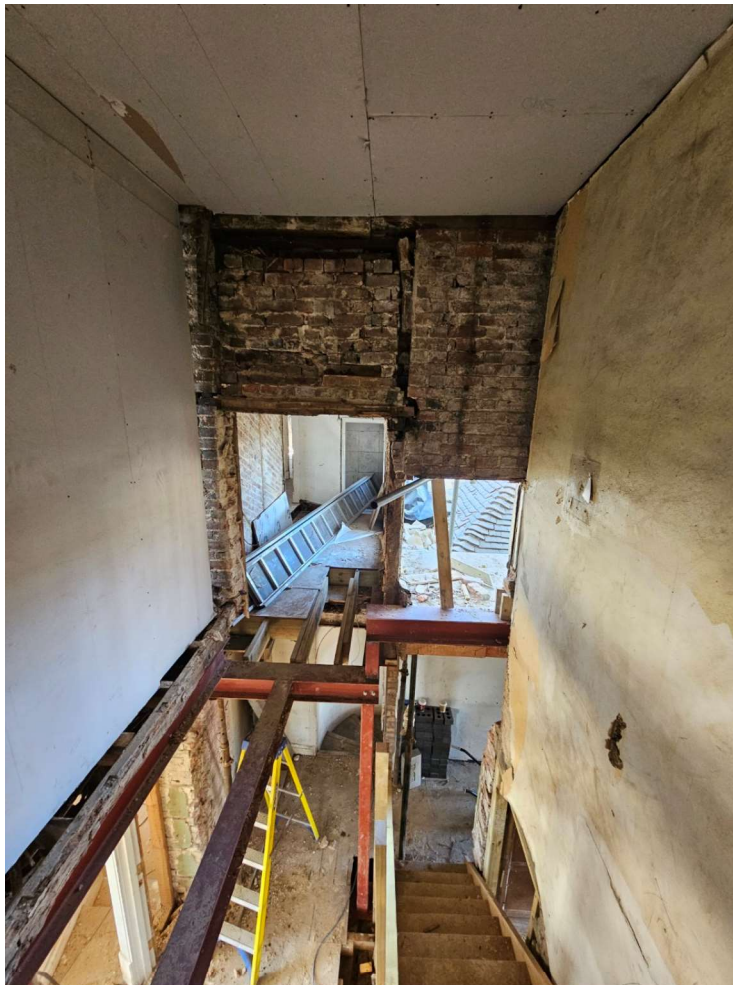
It should be noted that there were already 2no. older steel beams across the building, supporting the roof. These have been left in place along with all the original timber parts.

The new timber elements were shown on our drawing 24283-03A, as attached to this document.

The ground floor structure remains as existing in this part of the building.

#### 10.0 First Floor Hall

The proposed revisions to the internal scheme included modifying the staircase from ground floor to first floor. It was clear from our inspection that the existing structural arrangement was badly deteriorated and would require additional support.



Therefore additional beams and a steel post were added to pick up the ends of original joists. These were used to support the original joist ends and historic stud wall, where previously there was inadequate support. Movement had been taking place and there were fractures where the internal structure met the external wall. The historic arrangement would not have met the requirements of Building Regulations.

The external wall in this part of the building was found to be totally inadequate with panels of masonry supported on a single timber post. It is thought that an additional window had been cut in to this part of the wall causing movement and cracking. Steel supports have now restored the structural stability of this part of the original building.

#### 11.0 First Floor Ceilings

The original ceiling was lathe and plaster and was found to have pulled away from the supporting structure due to old age and water ingress in places. The ceilings had been repaired and overboarded many times in the past, however this will have added extra weight to small ceiling joists that were never intended for these loads. As a result, the ceilings were bowed and distorted and excess weight needed to be removed. The lathe and plaster could not be saved.

When exposed, it was evident that the roof had been spreading outwards and pulling the ceiling joists apart in the centre of the rooms. There were many places where historic support beams were no longer holding the ceiling joists at all due to the amount of outward movement. If left as they were, we would expect that the ceilings over the bedrooms and bathroom would have collapsed.

Our proposal was to add additional timbers full width of the bedrooms, to restrict the amount of outward spread, by tying the feet of the rafters. These tie joists were intended to be fitted above the historic ceiling joists so that as much of the fabric of the building was retained.

There has been water ingress for many years, so that some timber elements have rotted, particularly at the ends where they were supported. In some instances, the rotten timber parts will need to be replaced with new timbers.

These proposals were shown on our drawing 24283-02, as attached.

#### 12.0 First Floor Rafters

The timber of the original rafters were generally found to be in acceptable condition to be retained. Localised areas of water damage may require some new timber rafters to be used. The bigger issue was that the original roof had slumped in the direction of the length of the roof, due to inadequate bracing. If left as existing, we would expect that roof and the chimneys may collapse in due course.

As a result of the movement, the rafters were found to be out of plumb. We have proposed additional diagonal bracing to be fixed to the underside of the existing rafters to lock them in position. This can be carried out and allows the historic fabric of the building to be saved, and to still be visible in the roof space.

The original chimney stacks at each end of the pitched roofs have been inadequately supported for many years. The proposed strengthening of the roof allows the chimneys to be tied into the rafters to stabilise the masonry.

The following photograph shows the original rafters still in place with the new diagonal bracing boards fixed to the underside.

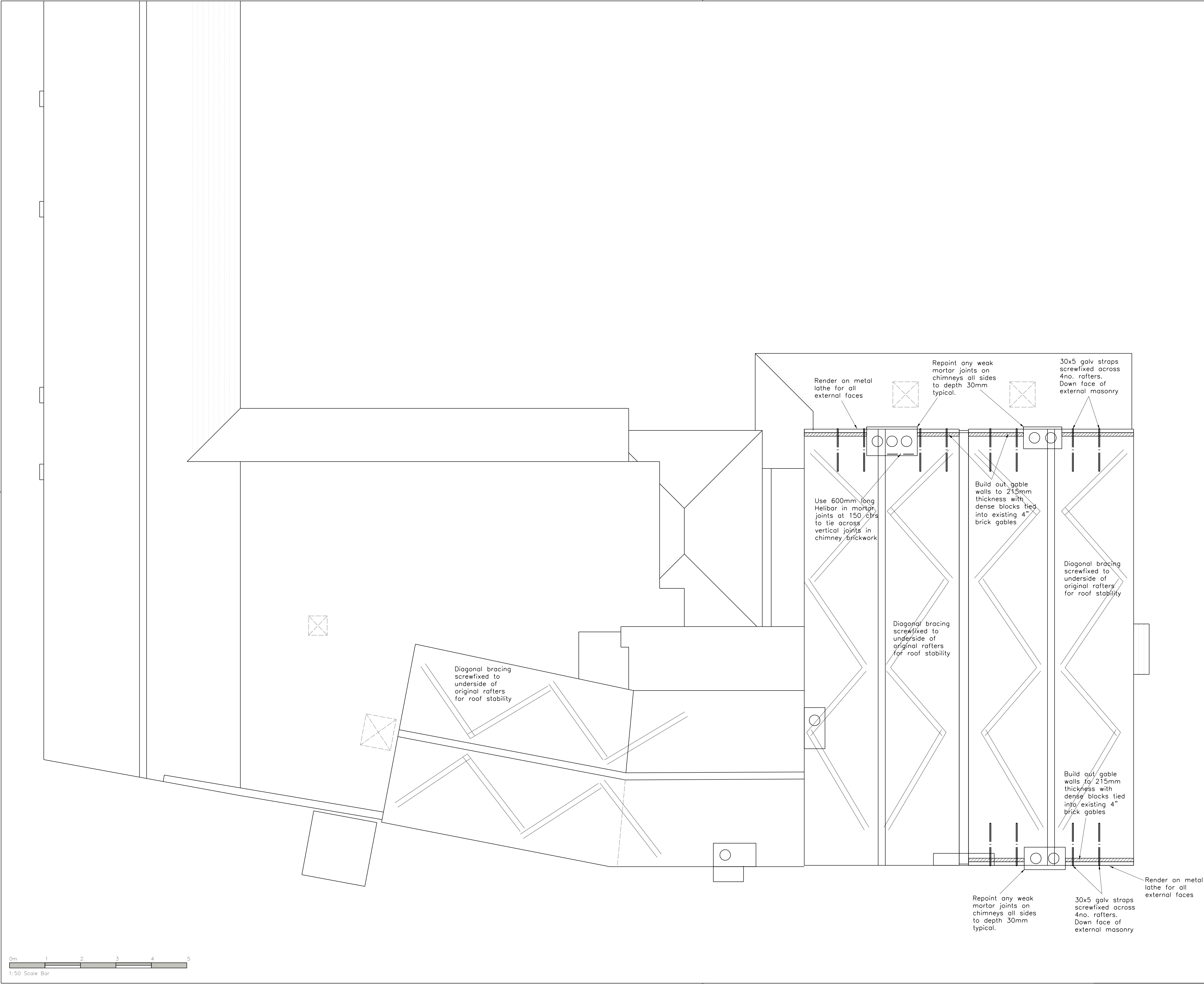


The roof proposals were shown on our drawing 24283-01, as attached.

Please contact Mitchinson Macken Ltd if there are any additional queries.

Guy Macken

For Mitchinson Macken Ltd



**NOTES**

In addition to these notes, reference shall be made to the specification of works and the relevant Architect's and Specialist's drawings and specifications.

The Contractor is responsible for verifying all site dimensions before commencing work.

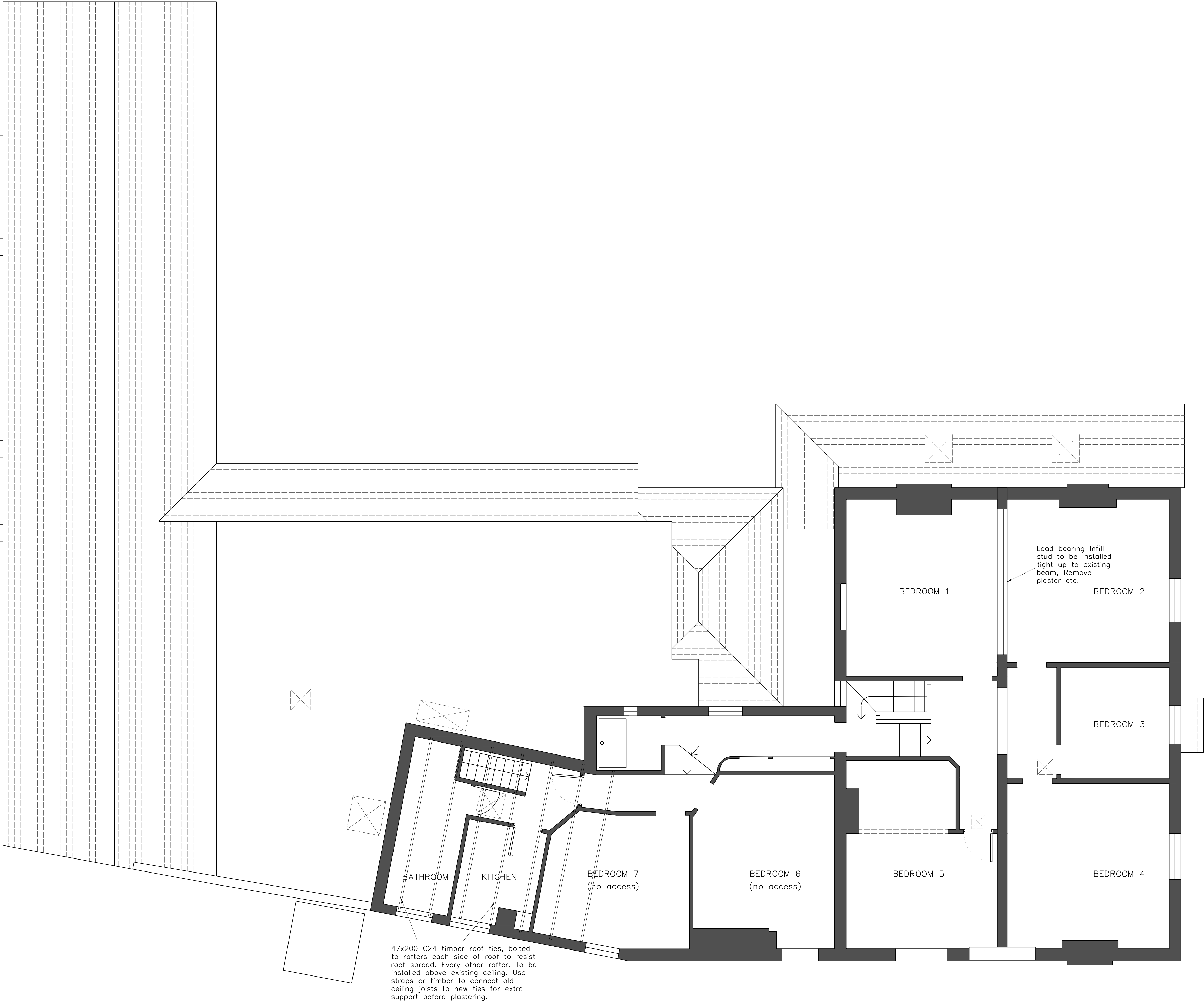
All dimensions are in millimetres unless noted otherwise.

This drawing has been produced electronically and may have been photo reduced or enlarged when printed or copied. Dimensions on this drawing shall not be scaled. Work only to figured dimensions. Any dimensional discrepancies errors or omissions are to be reported to the engineer immediately.

Levels are in metres unless noted otherwise to Ordnance Survey datum.

The Contractor is responsible for the stability of the building whilst the works are in progress.

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| REV                                                                                                                                                                                                                                                                                                                                                               | DESCRIPTION    | DATE        | BY       |
| <div><br/>Unit 1, 100 North Road, Brighton, East Sussex, BN1 1YE<br/>T: 01273 609742 M: 07968 188928<br/>W: <a href="http://www.mitchinsonmacken.co.uk">www.mitchinsonmacken.co.uk</a> E: <a href="mailto:info@mitchinsonmacken.co.uk">info@mitchinsonmacken.co.uk</a></div> |                |             |          |
| PROJECT<br>CASTLE INN<br>HICKSTEAD<br>WEST SUSSEX                                                                                                                                                                                                                                                                                                                 |                |             |          |
| DRAWING<br>PROPOSED<br>ROOF PLAN<br>SHOWING STRUCTURE ABOVE                                                                                                                                                                                                                                                                                                       |                |             |          |
| DRAWING No.<br>24283 / 01                                                                                                                                                                                                                                                                                                                                         |                | REV<br>0    | CHECKED  |
| SCALE<br>1:50 @ A1; 1:100 @ A3                                                                                                                                                                                                                                                                                                                                    | DATE<br>Mar 25 | DRAWN<br>GM | APPROVED |



47x200 C24 timber roof ties, bolted to rafters each side of roof to resist roof spread. Every other rafter. To be installed above existing ceiling. Use straps or timber to connect old ceiling joists to new ties for extra support before plastering.

Load bearing Infill stud to be installed tight up to existing beam, Remove plaster etc.

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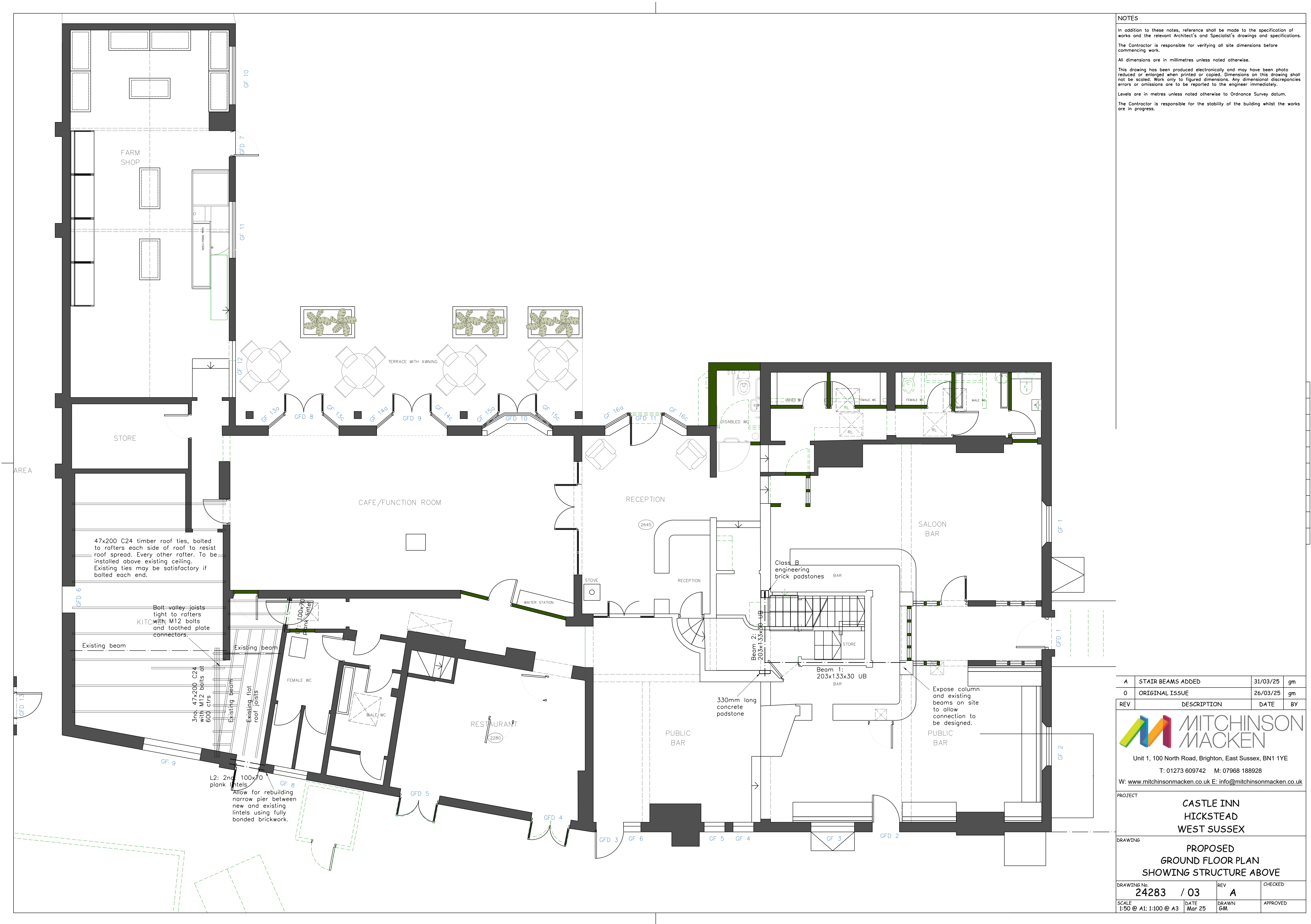
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| PROJECT<br>CASTLE INN<br>HICKSTEAD<br>WEST SUSSEX                                                                                                                                                                                                                                                                                                                 |                |              |          |
| DRAWING<br>PROPOSED<br>FIRST FLOOR PLAN<br>SHOWING STRUCTURE ABOVE                                                                                                                                                                                                                                                                                                |                |              |          |
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| <div><div></div><div>MITCHINSON<br/>MACKEN</div></div> <div>Unit 1, 100 North Road, Brighton, East Sussex, BN1 1YE</div> <div>T: 01273 609742 M: 07968 188928</div> <div>W: <a href="http://www.mitchinsonmacken.co.uk">www.mitchinsonmacken.co.uk</a> E: <a href="mailto:info@mitchinsonmacken.co.uk">info@mitchinsonmacken.co.uk</a></div> |                   |          |          |
| PROJECT                                                                                                                                                                                                                                                                                                                                      |                   |          |          |
| CASTLE INN<br>HICKSTEAD<br>WEST SUSSEX                                                                                                                                                                                                                                                                                                       |                   |          |          |
| DRAWING                                                                                                                                                                                                                                                                                                                                      |                   |          |          |
| PROPOSED<br>GROUND FLOOR PLAN<br>SHOWING STRUCTURE ABOVE                                                                                                                                                                                                                                                                                     |                   |          |          |
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