

24.247 -Structural Site Survey & Condition Report

The Horn Public House,
2-4 Castle Street,
Reading, RG1 2LS

Client: Belmont Projects Ltd



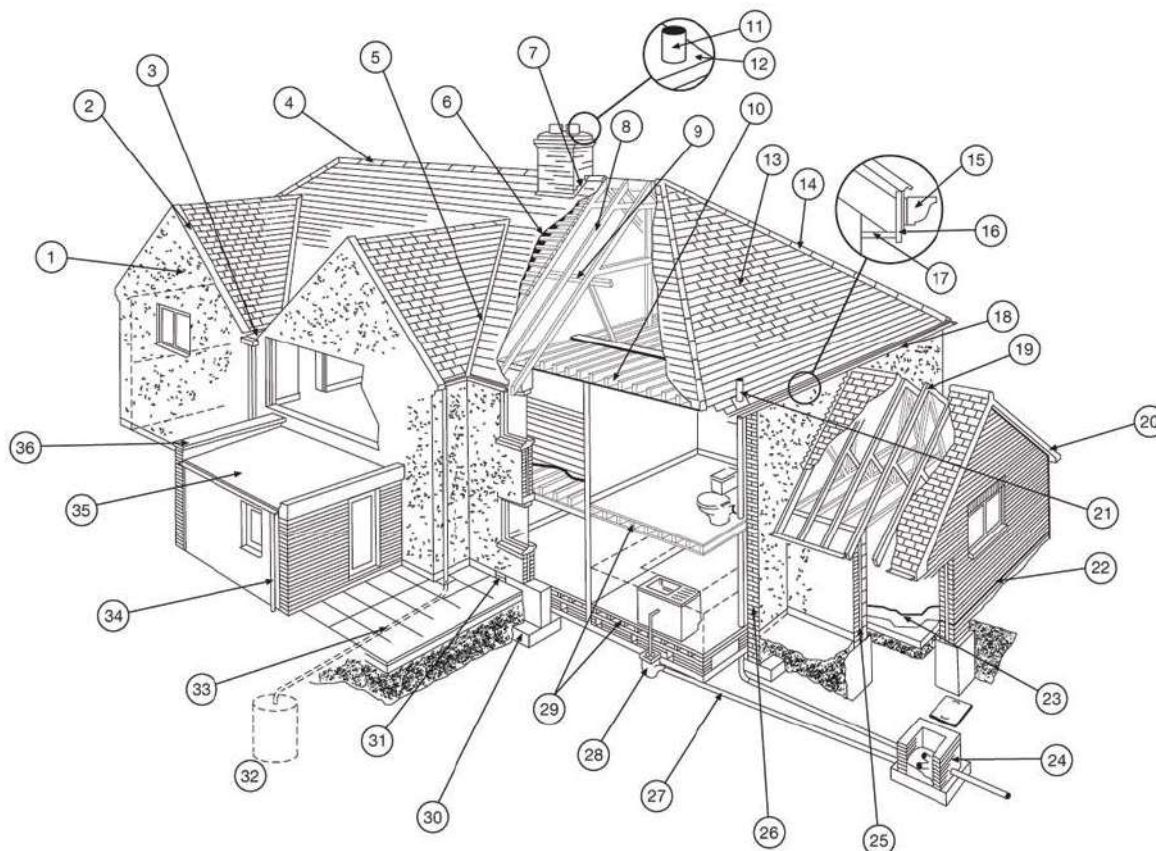
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Project Preface

Client Name:	Belmont Projects Ltd,
Client Address:	21-27 Albion Road, Luton, LU2 0DS
Project Address:	The Horn Public House, 2-6 Castle Street, Reading, RG1 2LS
Prepared By:	Mr Rahul Kumar Singh, BSc (Structures)
Prepared At:	SDMC Consultants Ltd, 1 Studio Court, Bletchley Milton Keynes, MK2 2DG
Date of Inspection:	4 th December 2024
Date of Report:	24 th January 2025
Reviewed By:	Mr James Kirkham, MSc, CEng, MIStructE
Job Reference	24.247

Traditional Building Construction



KEY

- | | | | |
|------------------|------------------|------------------------------|------------------------|
| 1 Gable end wall | 2 Verge | 13 Hip roof | 25 Cavity wall |
| 3 Valley gutter | 4 Ridge tile | 14 Hip tile | 26 Solid Wall |
| 5 Valley | 6 Roofing felt | 15 Gutter | 27 Foul drain |
| 7 Flashing | 8 Rafter | 16 Fascia | 28 Gulley |
| 9 Purlin | 10 Ceiling joist | 17 Soffit | |
| 11 Pot | 12 Cement | 18 Eaves | 29 Floor joists |
| | | 19 Roof truss | 30 Foundation |
| | | 20 Barge board | 31 Airbrick |
| | | 21 Soil-and-vent pipe | 32 Soakaway |
| | | 22 Damp-proof course (DPC) | 33 Surface water drain |
| | | 23 Damp-proof membrane (DPM) | 34 Downpipe |
| | | 24 Inspection chamber | |
| | | | 35 Flat roof |
| | | | 36 Parapet |

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1.0 Introduction

1.1 Instructions

In accordance with instructions received from Belmont Projects Ltd in November 2024 SDMC Consultants Ltd have been appointed to carry out Structural Condition Report along with Schedule of Works. It was requested for The Horn Public House, 2-6 Castle Street, Reading, RG1 2LS for current planning application ref., PL/24/1213 for "Full repair and refurbishment of public house with preservation of ground floor as hospitality use and conversion of first floor into 3 self-contained apartments.

The Site Survey was conducted on 1st November 2024. However, the instruction for Schedule of Conditions was instructed in the January 2025. The weather conditions were dry and cloudy.

It is a condition of this report that we have not inspected all woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that such parts of the property are free from defect.

1.2 Terminology

Where the expressions immediate, short term, medium term, long term and very long term are used they generally mean the following:

- Immediate: within 1 year
- Short Term: within the next 1 to 3 years
- Medium Term: within the next 4 to 10 years
- Long Term: within 11 to 20 years
- Very Long Term: Over 20 years

Where relating to structural damage and crack widths the expressions negligible, very slight, moderate, severe and very severe are used they generally mean the following:

Category 0	"negligible"	<0.1mm
Category 1	"very slight"	0.1-2mm
Category 2	"slight"	>2 but <5mm
Category 3	"moderate"	>5 but <15mm
Category 4	"severe"	>15 but <25mm
Category 5	"very severe"	>25mm

Table 1. BRE Digest 251

Classification of damage to buildings based on crack widths

2.0 General Description of Property

- The existing property is a Grade II Listed Building comprises of original 2 Storey Property built in late 19th century and with possible extensions carried out in early to middle 20th century as a Public House.
- The building comprises of half-timbering framing as Tudor Structure with infill of bricks, plaster and with medium size windows.
- The roof structure can be confirmed to be open cut timber roof comprising of rafters supported on Purlins.
- The roof covering can be confirmed to be satisfactory and in good condition comprising of clay tiles as well as slates.
- The existing roof rafters can be confirmed to be equivalent to 4"X3" timber joists @ 400mm c/c
- The existing ceiling joists can be confirmed to be 4"X3" timber joists @ 400mm c/c with mid-span support of timber beam of 9"X6" at various locations.

- The existing first floor can be confirmed to be 7”X2”, 6”X2” and 8”X2” timber joists placed @ 400mm c/c.
- The internal walls can be confirmed to be half-timber framing wall with infill of bricks, plaster and paint.
- The ground floor can be confirmed to 7”X2” and 8”X2” timber joists placed @ 400mm c/c.
- The basement and ground floor internal wall can be confirmed to similar half-timber framed Tudor Structure with the infill of bricks and render.
- The ground floor space comprises of Public House which contains the bar counter, bar area, other services and toilets.
- The Upper Floors comprises of residential accommodation on upper floors with bathroom.

3.0 Site Geology

An overview of the geology across the Town has been obtained from the available data from the British Geological Survey (BGS). This provides an overview of the Bedrock geology and presence of Superficial Deposits. The Borough is situated within the north-west edge of the London Basin with the Chiltern Hills marking the northern edge of the basin, just north of the River Thames. The strata dip gently to the south-east towards the centre of the basin. The Seaford Chalk and Newhaven Chalk Formations (undifferentiated) part of the White Chalk Subgroup locally outcrop in the northern part of the Borough and along the River Kennet locally under a mantle of Superficial Deposits. The Chalk is underlain by the Upper Greensand and the Gault Formation at depth.

The Chalk is overlain by younger Lambeth Group deposits present to the south of the River Kennet, and on the higher ground in the northern and western parts of the Borough. The London Clay Formation is present in the south-eastern part of the Borough, and on the higher ground directly above the Lambeth Group in the western and northern parts of the Borough. The solid geology is covered with Superficial

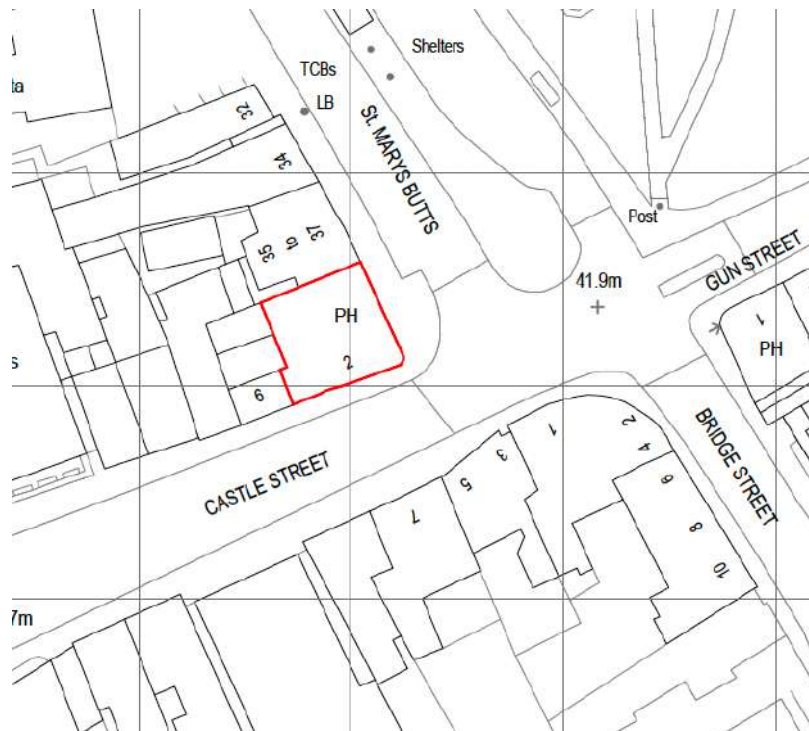


Fig 1: Location Map

Deposits of Quaternary Age in many parts of the Borough. River Terrace Deposits are present in several terraces across the Borough from the higher ground of the Chiltern Hills to the river valley floor. Head

Deposits formed by natural geomorphological processes and consisting typically of weathered and softened London Clay and Lambeth Group intermixed with superficial soils are locally present on the higher ground. Recent Alluvium is present alongside the Rivers Thames and Kennet and their tributaries with a veneer of Langley Silt locally overlying the River Terrace Deposits in the valley of the River Thames. The natural soils are locally overlain by Made Ground associated with the former and present developments.

4.0 Observations

In this section of our report, we summarise the defects identified and principal concerns regarding the structural integrity and other issues related to the property.

- The ridge line of the main roof was found to be free from any undulations or deflections and roof coverings can also be confirmed to be satisfactory and has been recently laid.
- The flat roof in the courtyard including the pitch roof covered in original slate was found to be poor condition.
- The roof in the rear side of the property can be confirmed to be in good condition as shown in figure 7.
- The external elevations timber frame were found to be weathered but, can be confirmed to be in fair condition.
- The cantilever canopy on the front/side elevation were also found to weathered which has withstood with the age of the property.
- The side elevations above the courtyard can be confirmed to be extended in early 20th century with brick facing, painted white was found to be in acceptable conditions.
- The rear elevation of the property was found to sand and cement rendered painted in white paint were found to have a hairline crack, which can be classed as category 2, “slight” as per Table 1: BRE Digest 251.
- The rafters in the main roof can be confirmed to be deflected, manifested and weathered at various locations. The roof rafters can be confirmed to be 4” X 3” equivalent timber joists with midspan support in purlins.
- We would recommend wood treatment from the specialist to arrest further weathering and installing new timber rafters/joists to strengthen the structure and maintain the future structural integrity of the property.
- The ceiling joists can be confirmed to be 4” X 3” placed @ 400mm c/c equivalent timber joists with midspan support on timber beams.
- The timber beams supporting the ceiling joists may have lost their structural integrity. We would recommend adding metal plates on both sides and bolted using M16 cast iron bolts or painted in black colour.
- The internal walls can be confirmed to be in good condition apart from few stains and damp which can be addressed during the restoration period. The deflections identified in the walls can be attributed to age of the property. We can also confirm that upper floors won't need any strengthening and can be retained.
- The floor joists can be confirmed to be 8” X 2”, 7” X 2” and 6” X 2 at various places placed @ 400mm c/c equivalent timber joists with midspan support on timber beams were found to be manifested, deflected and failed. The existing structure can be confirmed to comply with TRAADA tables for use of timber as a structure.
- There were several hairline fracture or cracks identified in the building which can be confirmed to Category 1 to Category 2, “very slight” to “slight” as per BRE Digest 251.
- There has been egress of water in the property, which may have damaged the original laith and plaster including plaster board ceiling along with floorboards at various locations.
- There were few locations on ground floor where the ceilings have been damaged.
- Some of the parts of ceilings have remained intact and precautions should be taken during the construction activity.

- The steel post using CHS section were found to be in good condition.
- The timber posts along with timber beams can be confirmed to be in acceptable condition.
- The Loadings for Roof and Floors are taken as advised
 - Pitch Roof DL=1.41kN/m² LL=0.75kN/m²
 - Flat Roof or mansard roof DL=1.0kN/m² LL=0.75kN/m²
 - Floor Load DL=0.75kN/m² LL=1.5kN/m²
- With the proposed conversion to residential apartments use of additional thermal treatment may be required based on u value requirements and would need seek advise from SAP Assessor.
- We would confirm that we saw no signs of differential settlement or subsidence of the walls or roof structure, and this would, therefore, indicate that the existing foundations are performing satisfactorily and, therefore, no underpinning or enhancement of the foundations will be required as part of any proposed conversion to residential accommodation.

5.0 Schedule of Works

In reference to the above planning proposal, there would be extensive restoration works would be required. We have identified the major areas of defects. Our initial proposal would be to strip the ceilings on the upper floors as they are either covered in laith and plaster or plasterboard with skim finish. However, as a part of retaining the aesthetics in the public house to be retained. Any, activity should be carried out from the floor level. The walls were found to be in acceptable condition, can be painted. The timber beams/columns should be retained or strengthened and protected. Further details for Schedule of works in Appendix B along with Figure 2

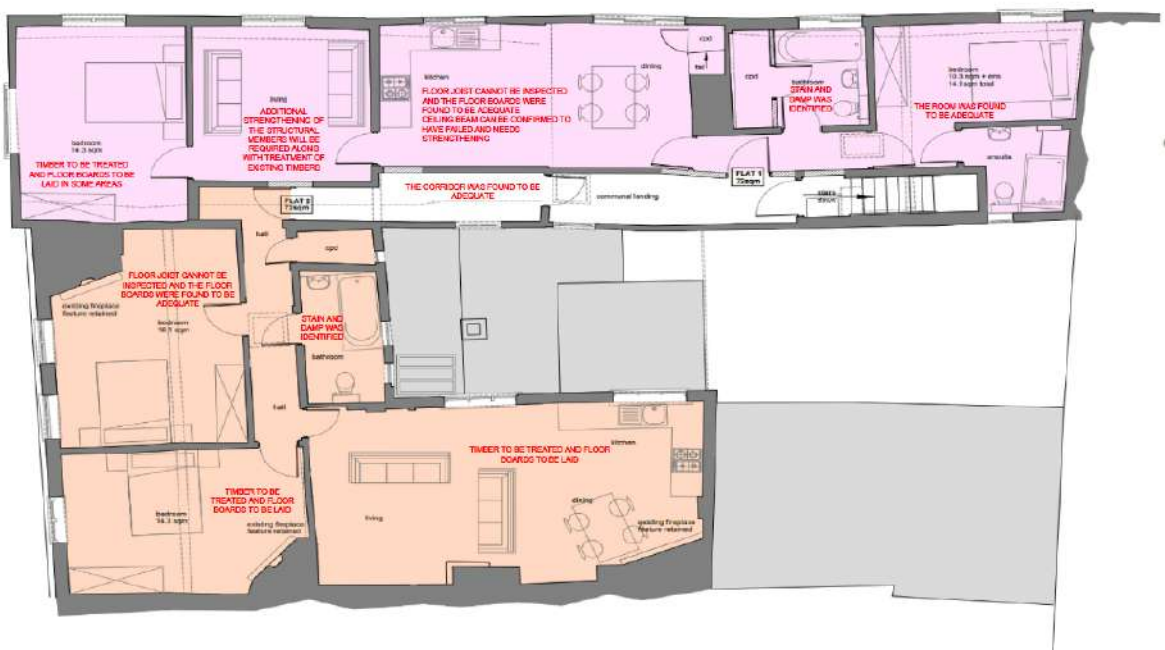


Figure 2: Comments for Schedule of Works

6.0 Conclusion

Following our Structural Site Survey and subsequent consideration we could conclude the following as well as our recommendation as follows:

- In our opinion that the existing building has survived few centuries of usage. This has included withstanding significant storm periods.
- It has easily withstood the significant snow loads that have occurred over its life without any undue deformation or distortion.
- From the above therefore, it is our conclusion that the upper floors is structurally distressed but, putting adequate measures can be structurally strength for change of use to apartments.

- CCTV Survey is required prior to commencement of any construction works.
- Timber treatment for all the retained structural timber members would be compulsory
- The Design Engineer should be sympathetic about retaining the aesthetic members and the aim should be retaining and strengthening rather than any replacement.

The proposal would be a good regeneration project, and use of tired property into use and the proposal should approved by Local Authority.

8.0 Terms of Future Engagement

Design & Calculations

Within the conclusions / recommendations of our report under "recommendations" we may advise that certain items of repair will require the preparation of design and calculations which after receiving instruction we will proceed to prepare the design / calculations as required. These will be forwarded to you directly upon completion.

Note: If design / calculations are required, you will need to have these available before obtaining estimates as the contractor will need to view them in order to price for the works.

Specialist Reports

If we have recommended you obtain additional specific specialist reports, these should be sought from specialist contractors who are qualified and experienced in this type of work and who can offer suitable certification upon completion. We will require sight of both the report and certificate from this specialist prior to issuing our own Engineer's Completion of Works Certificate.

Completion of Works Certificate

We would strongly advise that all essential works recommended should be inspected and certified to protect the long-term insurance and saleability aspects of the property. The report and completion certificate should then be stored with your deeds to provide an accurate record for the future.

If our report is for mortgage purposes, your mortgage/insurance company are likely to insist that an Engineers Completion of Works Certificate is issued to cover the essential works recommended and will require sight of the documentation to release any monies / retentions due. If you are unsure as to whether you require a Certificate for mortgage/insurance purposes, please contact your mortgage company / insurer direct.

9.0 Rights of Originator

This report was for the sole use of the client, their mortgage provider and insurance company. It must not be reproduced or transferred to any other third party without the express written consent of SDMC Consultants Ltd.

SDMC Consultants Ltd will consider the re-issue of the report in its original form to a third party within 6 months of the original report date. Upon the lapse of a 6-month period the report can only be re-issued following a full re-inspection, which will attract a full inspection fee.

We reserve the right to refuse copies of the report to any third party (other than those named above). We also reserve the right to amend our opinions in the event of additional information being made available at some future date. The Contracts (Rights of Third Parties) Act 1999 shall not apply to this agreement.

END OF REPORT

Appendix A- Photographs



Figure 3: Front and Side Elevation can be confirmed to have signs of ageing and weathering; Figure 4: The Side Elevation rendered developed in early 20th century was found to be in fair condition.



Figure 5: Front Elevation can be confirmed to have partially weathered timber structural members painted in white colour; Figure 6: The Side Elevation showed timber members to have failed.



Figure 7: The flat and pitch roof in the courtyard was found to be poor condition; Figure 8: The upper floor elevation walls were found to have hairline cracks in the plaster.



Figure 9: The rear ridge line along with wall above courtyard was found to be adequate; Figure 10: The rafters had a history of deflection, manifestation and deflection including the ceiling joists.



Figure 11: The ceiling joists can be confirmed to have failed and plasterboard ceiling can be confirmed not original; Figure 12: The timber beam supporting the ceiling joists were found to have failed, it would require restoration and strengthening.



Figure 13: The ceiling joists can be confirmed to have failed and plasterboard ceiling can be confirmed not original; Figure 14: The timber beam supporting the ceiling joists were found to have failed, it would require treatment and strengthening.



Figure 15: The floor joists can be confirmed to have failed structurally; Figure 16: The timber joists on first floor can be confirmed to have weathered and deflected;



Figure 17: The floor boards remain intact in this room and can be confirmed to be in fairly good condition; Figure 18: The floor board can be confirmed to have damaged at various locations;

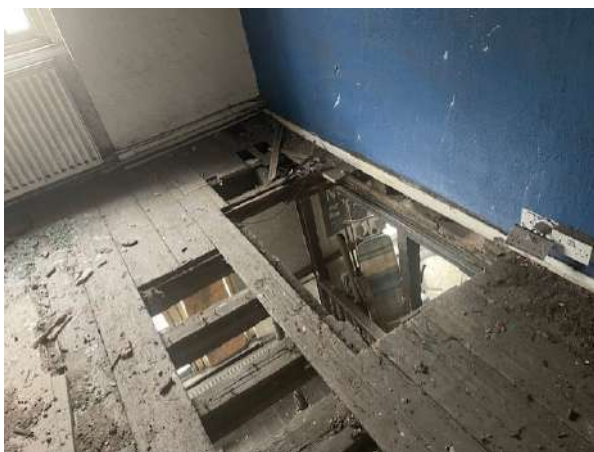


Figure 19: The floor boards were missing at various locations including lack of support for floor joists; Figure 20: The timber beam supporting the ceiling joists can be confirmed to be in good condition;



Figure 21: The first floor joists were found to be manifested as well as failed structurally; Figure 22: The temporary support in place was found to be acceptable.



Figure 23: There steel post around the bar counter area can be confirmed to be good condition; Figure 24: The timber post and timber post was found to be adequate;



Figure 25: There brick chimney was found to be structurally adequate and timber beam free from any defect; Figure 26: The corridor area on ground floor can be confirmed to be satisfactory;



Figure 27: There ceiling can be confirmed to have encountered deflection due to the age of property; Figure 28: The collapse of ceilings area on ground floor due to egress of water;



Figure 29: There kitchen area can be confirmed to be in good condition; Figure 30: The toilets can be confirmed to be adequate;

Appendix B-Schedule of Works

Serial No	Schedule of Works	Recommendations
1.0	Common Areas on Upper Floors	
1.1	Restoration of Existing Ceiling Joists	Wood Treatment to stop any further manifestation and future restoration
1.2	Strengthening of the Structural Members	Add additional members to strengthen the additional members
1.3	Exposed Timber Beams	Exposed timber beams should be not be removed or trimmed to create any new openings
2.0	Room 1.9 and 1.10 to be merged and formed into living room and kitchen	
2.1	Removal of wall	Install a timber beam as designed by Structural Engineer and to be painted using black paint
2.2	Existing rafters and ceiling joists	Wood Treatment to stop any further manifestation and restoration
2.3	Strengthening of Rafters or Ceilings Joists	Identify the damaged or failed structural members and install additional timber member to strengthen the structure.
3.0	Room 1.7 and 1.8 to be merged and formed into bedroom and bathroom	
3.1	Existing rafters and ceiling joists	Wood Treatment to stop any further manifestation and restoration
3.2	Strengthening of Rafters or Ceilings Joists	Identify the damaged or failed structural members and install additional timber member to strengthen the structure.
4.0	Room 1.5 and 1.6 to be merged and formed into living room and kitchen	

4.1	Existing rafters and ceiling joists	Wood Treatment to stop any further manifestation and restoration
4.2	Strengthening of Rafters or Ceilings Joists	Identify the damaged or failed structural members and install additional timber member to strengthen the structure.
4.3	Opening up old windows	Create trail holes and seek advise from the Structural Engineer for creating window opening and installation
4.4	Timber Beams	Integrity of timber beam to be checked and strengthen it
5.0	Room 1.3 and 1.4 to be merged and formed into bedroom	
5.1	Existing rafters, ceiling joists and floor joists	Wood Treatment to stop any further manifestation and restoration along with new joists or rafters as specified by Structural Engineer
5.2	Strengthening of Rafters or Ceilings Joists	Identify the damaged or failed structural members and install additional timber member to strengthen the structure.
5.3	Timber Beams	Integrity of existing timber beam to be checked and strengthen it
5.4	Removal of wall	Install a timber beam as designed by Structural Engineer and to be painted using black paint
6.0	Room 1.1 and 1.2 to be merged and formed into bedroom and kitchen	
6.1	Existing rafters, ceiling joists and floor joists	Wood Treatment to stop any further manifestation and restoration along

		with new joists or rafters as specified by Structural Engineer
6.2	Strengthening of Rafters or Ceilings Joists	Identify the damaged or failed structural members and install additional timber member to strengthen the structure.
6.3	Removal of wall	Install a timber beam as designed by Structural Engineer and to be painted using black paint
7.0	Room G.1, G.2, G.3, G.4 and G.5 Bar and Restaurant area	
7.1	Existing ceiling joists	Wood Treatment to stop any further manifestation and restoration along with new joists or rafters as specified by Structural Engineer
7.2	Restoration of old Door	Create trail holes and seek advise from the Structural Engineer for creating window opening and installation
8.0	Service Area and Rear Corridor G.6	
8.1	Existing ceiling joists	Wood Treatment to stop any further manifestation and restoration along with new joists or rafters as specified by Structural Engineer
9.0	Kitchen Area Main Public House G.7 and G.8	Found in fairly good condition and no action required.
10.1	Bathroom Area	Found in fairly good condition and no action required.

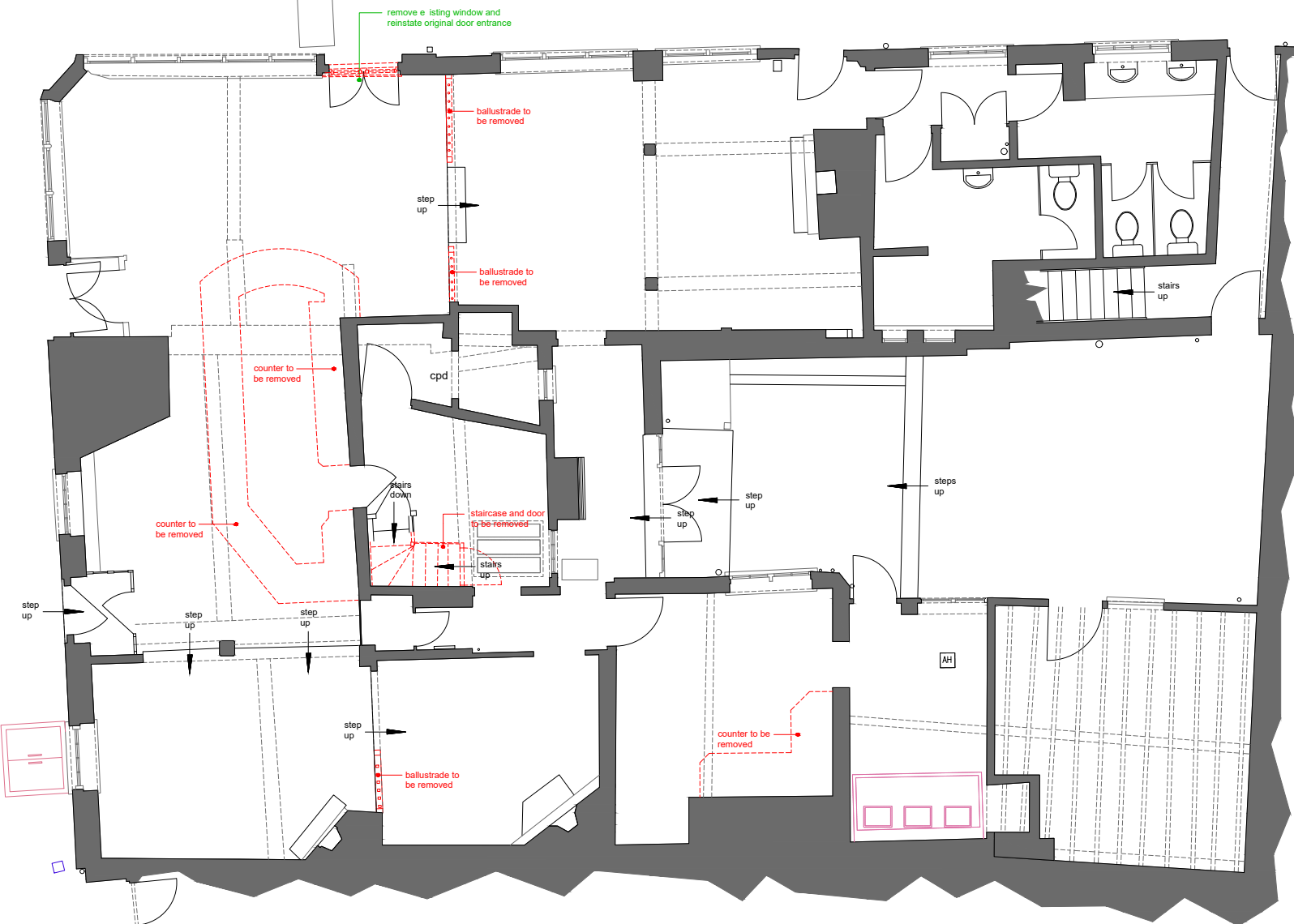
Appendix C-Plans and Elevations

CASTLE STREET

ST MARY'S BUTTS

6 CASTLE STREET

35 ST MARY'S BUTTS



General Notes:

1. PLEASE DO NOT SCALE FROM DRAWINGS.
2. Areas are approximate and indicative only.
3. Drawings to be used for planning purpose only.
4. All dimensions should be checked and confirmed on site.

Revision

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Title: o n l o o o s e o s

Drg No: 24/253/02 Scale: 1:100 @ A3

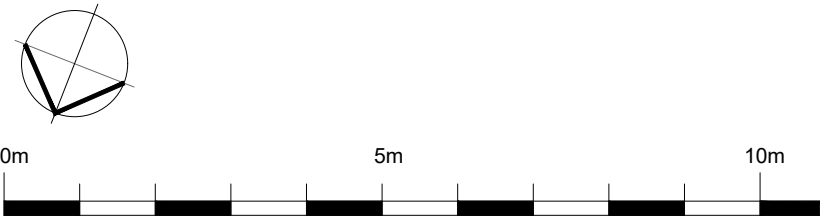
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CASTLE STREET

ST MARY'S BUTTS



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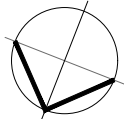
Site: The Horn, Reading RG1 2LS
Title: **i s t l o o o s e o s**
Drg No: **24/253/04** Scale: 1:100 @ A3

Date: May 2024
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CASTLE STREET

ST MARY'S BUTTS



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Site: The Horn, Reading RG1 2LS
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Drg No: **24/253/03** Scale: 1:100 @ A3

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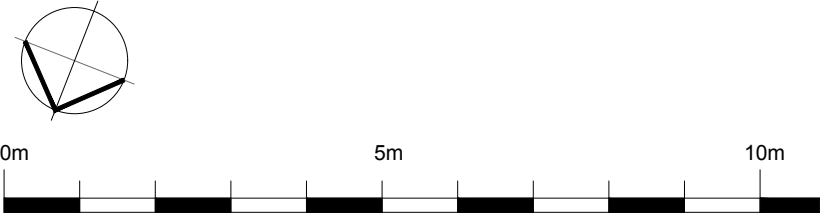
CASTLE STREET

- FLAT 1 - 1 bed = 45m²
- FLAT 2 - 1 bed = 50m²
- FLAT 3 - 1 bed = 49m²

ST MARY'S BUTTS



35 ST MARY'S BUTTS



0m 5m 10m

0m 5m 10m

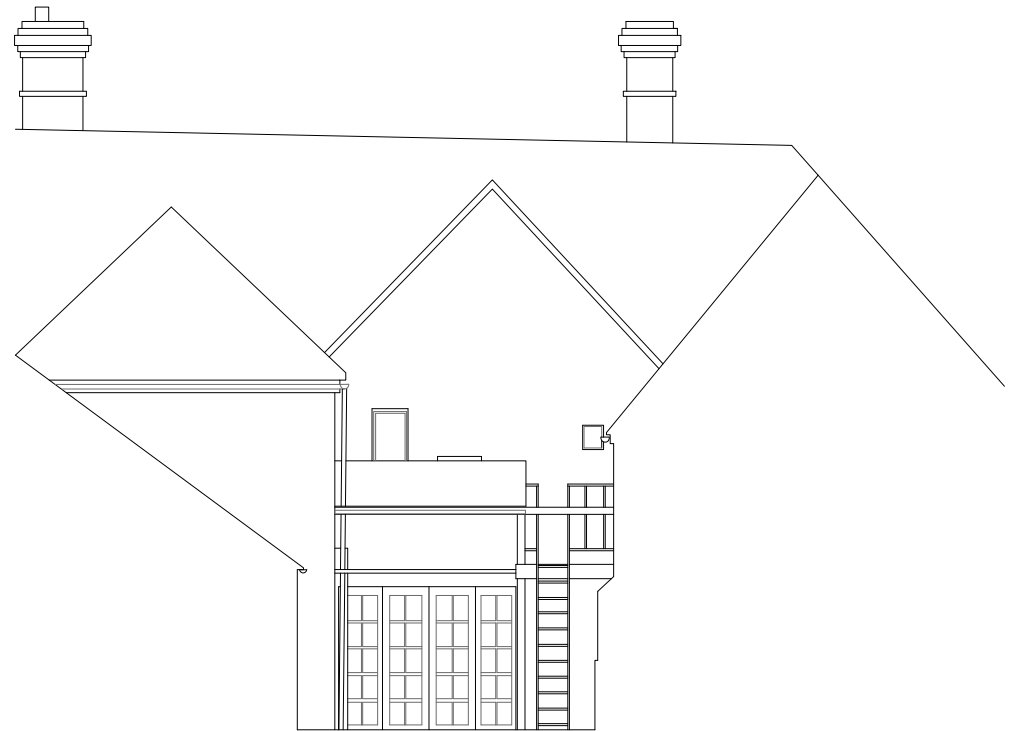
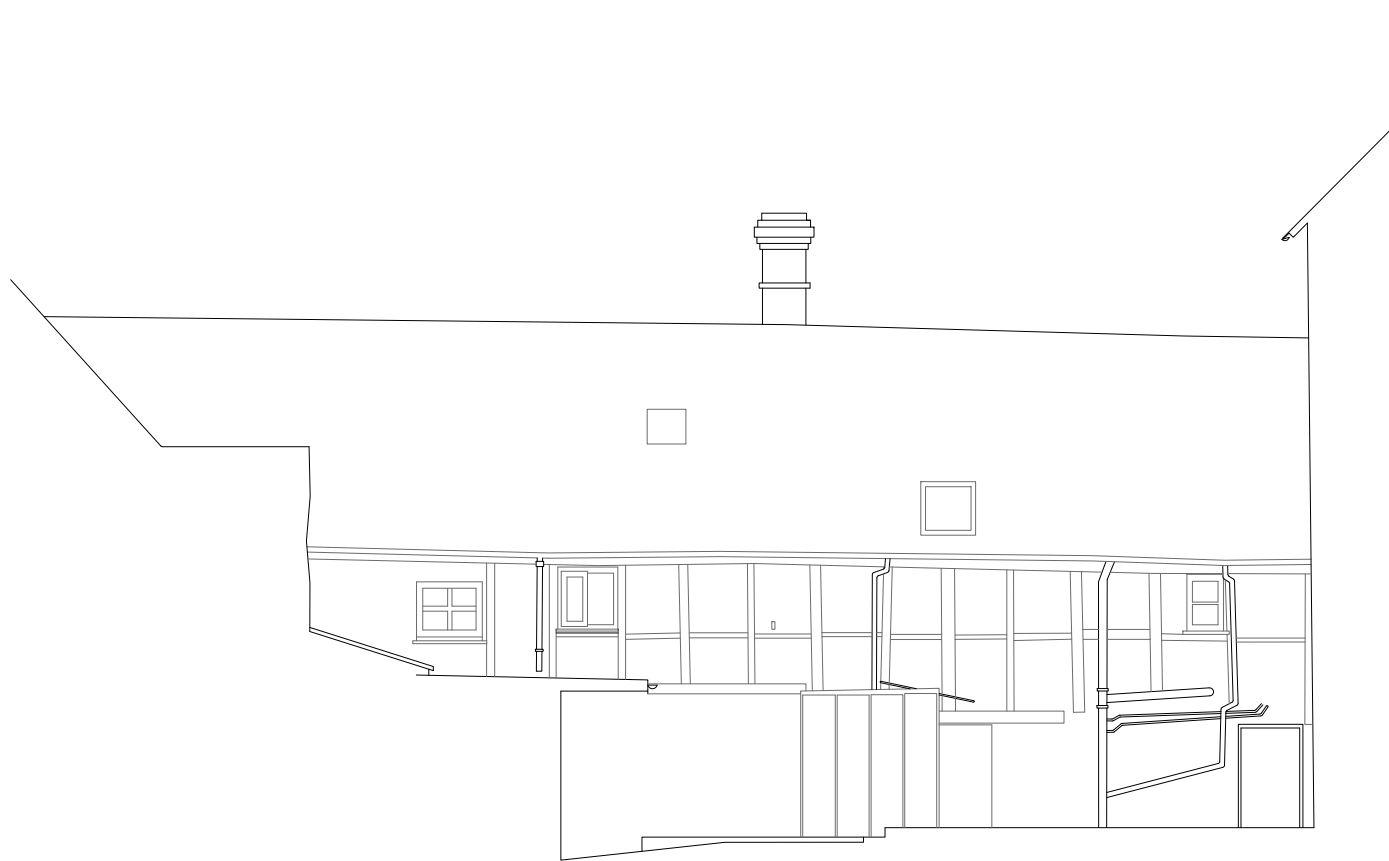
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tpd TOWN PLANNING DESIGN

0m 5m 10m

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Site: The Horn, Reading RG1 2LS

Title: **Existing Elevations**

Drg No: **24/253/06** Scale: 1:100 @ A2

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