



HBL ASSOCIATES

Trial Holes Undertaken 08th May 2024

@

**The Brunswick
97 Piccadilly
Manchester
M1 2DB**

On Behalf Of

TRUST PUBS

Document Ref: EQ92-HV-XX-XX-RP-S-0003



**SB HOLMES CONSULTING
HOLMES VENTURES LTD**

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1. Introduction

- 1.1. SB Holmes Consulting have been instructed by 'Trust Pubs' to attend the above public house and comment on reported settlement / movement of the ground floor structure within the main bar area, along with inspecting and commenting on the general structural integrity of the building with a view to a possible re-furnishment of the upper floors and rear of the building to a 'Air-BnB' type of hotel establishment.
- 1.2. We initially visited the property on Tuesday 21st November 2023 and the findings and recommendations from that visit can be found in our report reference EQ92-HV-XX-XX-RP-S-001, dated 21st November 2023. The main purpose of the initial inspection was to agree the required propping arrangement to allow the Public House to continue trading until such time as a more detailed inspection and opening up works can be carried out. These works need careful planning due to the possible presence of asbestos within the ceiling of the basement area and so not permitting removal of the ceiling within the basement at this time. The intention following the report from the 21st was to open up areas of the ground floor from above to give a better, more informed view of the ground floor structure so that remedial works can be determined and a budget price arrived at. However on consultation with the Asbestos Specialist, they did not want such large areas of the ground floor opening up. It was therefore proposed that holes could be drilled into the floor to allow an 'Endiscope' inspection camera to be inserted into the holes in an attempt to gain more information of the state of the ground floor timbers. This method was attempted on Wednesday 13th December 2023 and is the subject of our report reference EQ92-HV-XX-XX-RP-S-001, dated 13th December 2024, the general findings of that inspection were pretty much inconclusive, and larger openings recommended under the direction of an Asbestos specialist.
- 1.3. The 3rd inspection and exploratory works were undertaken exposed on Tuesday 07th May 2024 by ARD Asbestos Specialist. Following trial holes been cut out by ARD, an air test was carried out and a clean air certificate issued so allowing our inspection the trial pits on Wednesday 08th May, 2024, also present on 08th May were Kensington contractors who made good the trial holes after inspection.

2. Limitations

- 2.1. This report is based on the findings of the initial report and also the exploratory holes drilled on the 13th December 2023, and larger holes exposed on 08th May 2024. We did not carry out any further intrusive investigations or opening up works, therefore elements of the building that were covered at the time of the survey were not inspected. Neither did we carry out any trial pits to check the construction of the existing foundations.
- 2.2. This report covers structural elements only. We did not undertake inspections of any other disciplines, e.g., mechanical, electrical etc., or any ecological or bat surveys.
- 2.3. The purpose of the inspection was an attempt to ascertain the condition of the timber joist from the trial holes and also the sizes and layout of the timbers to check for their suitability to act as a public house suspended floor.
- 2.4. A full and detailed structural inspection was not undertaken, neither did we carry out a timber and damp survey, or gain access to the loft space to check the roof structure. We would note that we are not specialist in timber inspection in respect of wet / dry rot or investigation attack etc. The findings of this inspection will at some point have to be validated by further inspection and testing by a Timber Specialist Company.



2.5. As are limited to one day, we cannot comment if any reported movement is ongoing.

3. Brief Description

- 3.1. The Brunswick pub was reportedly built in the late 18th Century and is now a 'Grade II' listed building, gaining the listed Status around October 1973. The building was originally a 'Hotel', but now operates as a public house at ground floor with the manager accommodation at 1st floor, and the remainder of the building unused and falling into a state of disrepair.
- 3.2. The building consist of a ground, 1st and 2nd floor along with basements below the majority of the footprint of the building. The main use of the building seems to be split into two, the front housing the public bar at ground floor and managers accommodation at 1s floor, and the remainder unused, and the rear section of the building which is accessed separately off 'Paton Street', and is currently unused.
- 3.3. The structure is mainly from load bearing masonry and suspended timber floors, with what appears to be a traditional timber roof from timber purlins and rafters with a slate finish.

4. Trial Holes - Discussion

- 4.1. Eight number trail holes were opened up, the position of these can be found on Sketch 1 in Appendix A, along with the assumed structural layout based on the findings noted on Sketch 2, also in Appendix A. Photos of each trail hole and explanation can be found below;

- 4.1.1. **Trial Hole 1** – Was within the main trade area and over the beer cellar. 130mmx150mm trimmers appear to run either side of the chimney breast, with 150x75mm standard members at 400mm c/c.



Figure 1 – Trail Hole 1

- 4.1.1. **Trial Hole 2** – Was within the main trade area and over the beer cellar. 130mmx150mm trimmers appear to run either side of the chimney breast, with 150x75mm standard members at 400mm c/c, similar to Trial Hole 1, however there appeared to be some addition trimming as can be seen in Figure 2 below.



Figure 2 – Trail Hole 2



4.1.1. **Trial Hole 3** – Was within the main trade area and over the Kitchen Store below, the joist appear to span in the opposite direct to trial hole 1, but of similar size, being 150x75mm standard members at 400mm c/c.

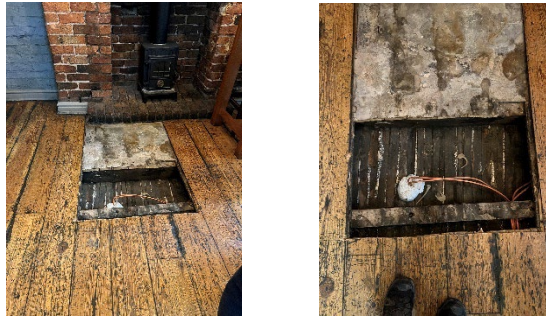


Figure 3 – Trial Hole 3

4.1.1. **Trial Hole 4** – Was positioned in front of the bar and over what is called the hallway below. The main structural member would appear to be from a 100x80mm timber member timber tongue a grooved board over, the floor is then counter battened out to make up the height to as the rest of the floor. It appears the front section of the bar is sat on these members, and they have deflected under the weight of the bar.



Figure 4 – Trial Hole 4

4.1.1. **Trial Hole 5** – Similar to Trail hole 4



Figure 5 – Trial Hole 5

- 4.1.1. **Trial Hole 6** – Was positioned to the rear of the bar area, these timbers look to be of a more recent timber than the rest of the floor exposed and span parallel to the bar, from 150x50mm sections at 250mm c/c.



Figure 6 – Trail Hole 6

- 4.1.1. **Trial Hole 7** – Again to the rear of the bar, but appears to be ground bearing. This would match up with where we were unable to access, see Sketch 1 and assume a ground bearing floor. c/c.

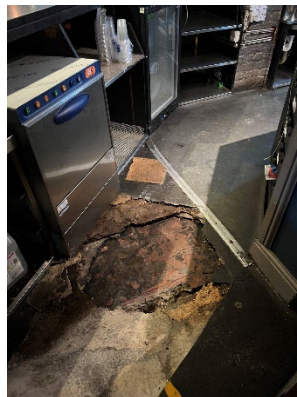


Figure 7 – Trail Hole 7

- 4.1.2. **Trial Hole 8** – Was within the main trade area and appears to be ground bearing. This would match up with where we were unable to access, see Sketch 1 and assume a ground bearing floor. There were timbers that appeared to be spanning above the ground below by about 50mm.



Figure 8 – Trail Hole 8

5. Discussion, Recommendations for Budget Pricing

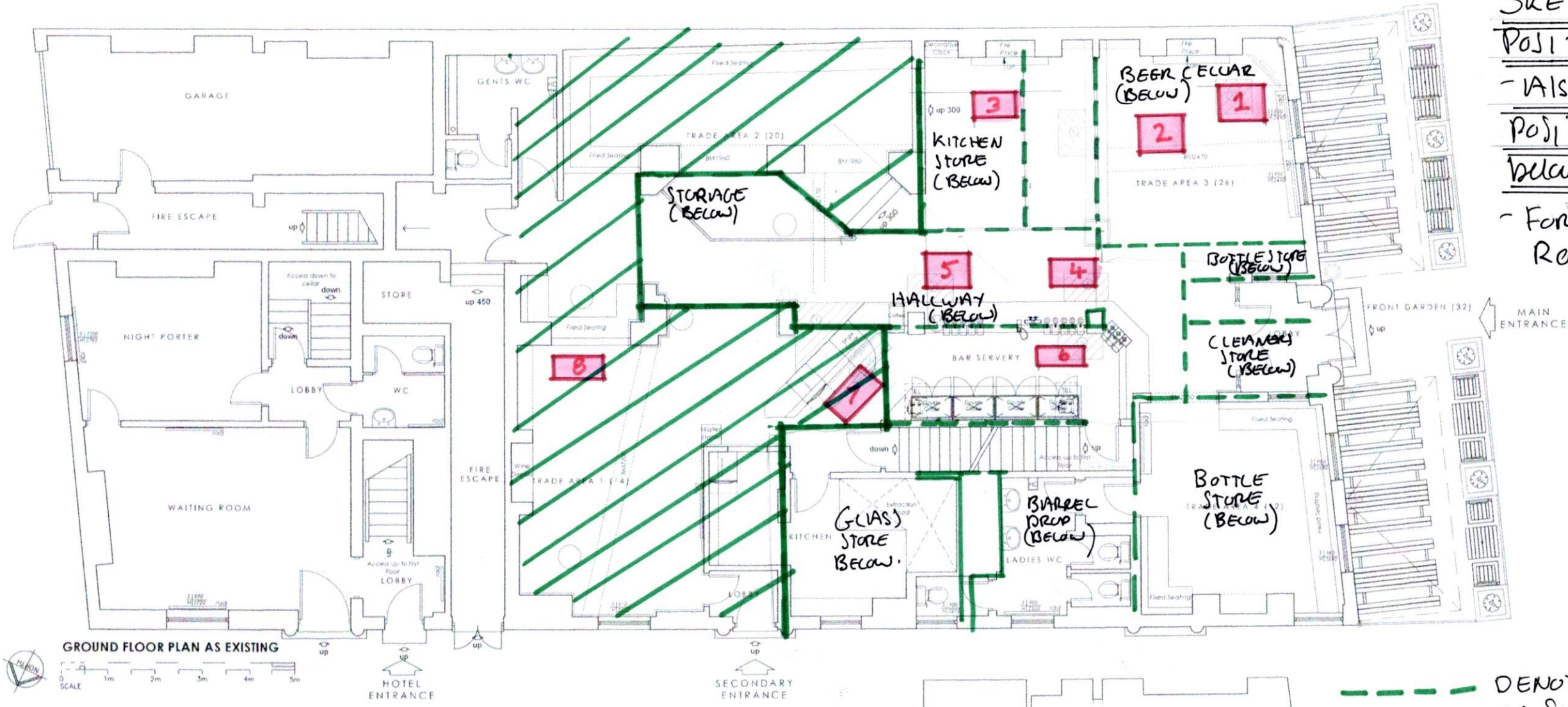
- 5.1. The trial holes and inspections were carried out in an attempt to gain more information as to the details and condition of the supporting timber and highlight if there were any visible signs of infestation or spurs that would suggest wet / dry rot. Although these issues in timber do not always show themselves on the surface of the timber, inspection of the surface can give a good indication if wet / dry rot is present. From the 8 trial holes as an example, we could not see signs of wet or dry rot or infestation. However, considering the lack of cross ventilation, the environment could be suitable for the germination and presence of dry rot. Therefore we would recommend a suitable experienced and qualified timber inspection company are engaged to carryout a timber and damp survey of the whole of the ground floor prior to finalising the works required.
- 5.2. Assuming the existing timbers do not have infestation, dry rot or wet rot, we have assessed the existing timber sizes based on the limited trail holes exposed, this has resulted in the following works required, which is also noted on Sketch 3 in Appendix C;
- 5.2.1. **Area over Cellar, Area 1** – Complete replacement of floor
- 5.2.2. **Area over Kitchen Stoor, Area 2** – Floor to be retained, however allow a provisional sum for some strengthen / making good works in this area.
- 5.2.3. **Area over Halfway, Area 3, and Area and Rear of Bar, Area 4** - Complete replacement of floor. Also note that this will require the removal and reinstatement of the bar.
- 5.2.4. We would also recommend in the working up of the budget that the areas shaded in blue should allow for the installation of a steel section to reduce the span of the floors over.
- 5.2.5. It was also agreed that the area of assumed ground bearing floor a budget of, say 50% of the floor to be replaced / made good.
- 5.2.6. A provisional sum allowance should also be made for ventilation of the floor.
- 5.2.7. We have been unable to inspect any of the joist ends and so would suggest a provision sum is allowed for the replacement / strengthening of, say 30% of the joist ends.
- 5.3. All the above is issued for Budget Pricing and Programming of the works pending a further and more detailed inspection once the Asbestos has been removed and the whole of the underside of the floor can be viewed and re-inspected, along with a 'Timber and Damp' survey carried out.
- 5.4. We are of the opinion that while the asbestos removal company is in and set up that the whole of the Asbestos is removed in its entirety. This is to future proof the floor and cellar area in case there is a need to carry out any works in other areas in the future. We are also recommending steel beams are inserted in these areas and therefore, for safety reasons, the asbestos should be removed to allow these beams inserted.



6. Appendix A – Sketches 1 & 2, Trial Hole Locations and Findings



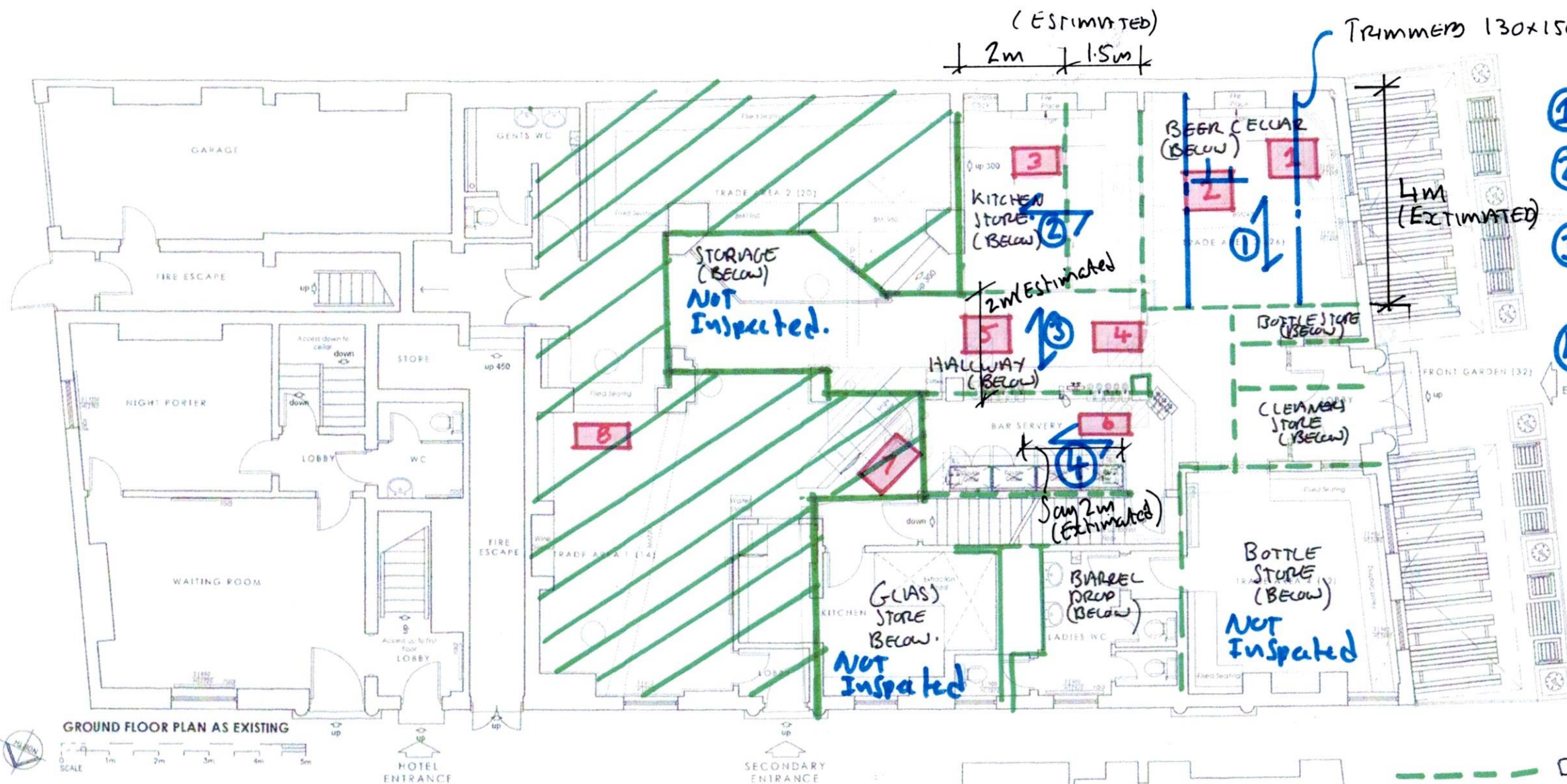
SKETCH 1 - TRIAL HOLE
POSITIONS OF 08/05/24
- Also showing Estimated
Position of Structural Supports
Below. 08/05/24
- For Findings of Trial Holes
Refer to Sketch. 2.



- DENOTE 'ESTIMATED POSITION of Support wall in CELLAR.
- /// - DENOTES AREA IN CELLAR NOT ACCESSED, ASSUMED BACK FILLED.
- - TRIAL HOLE POSITION



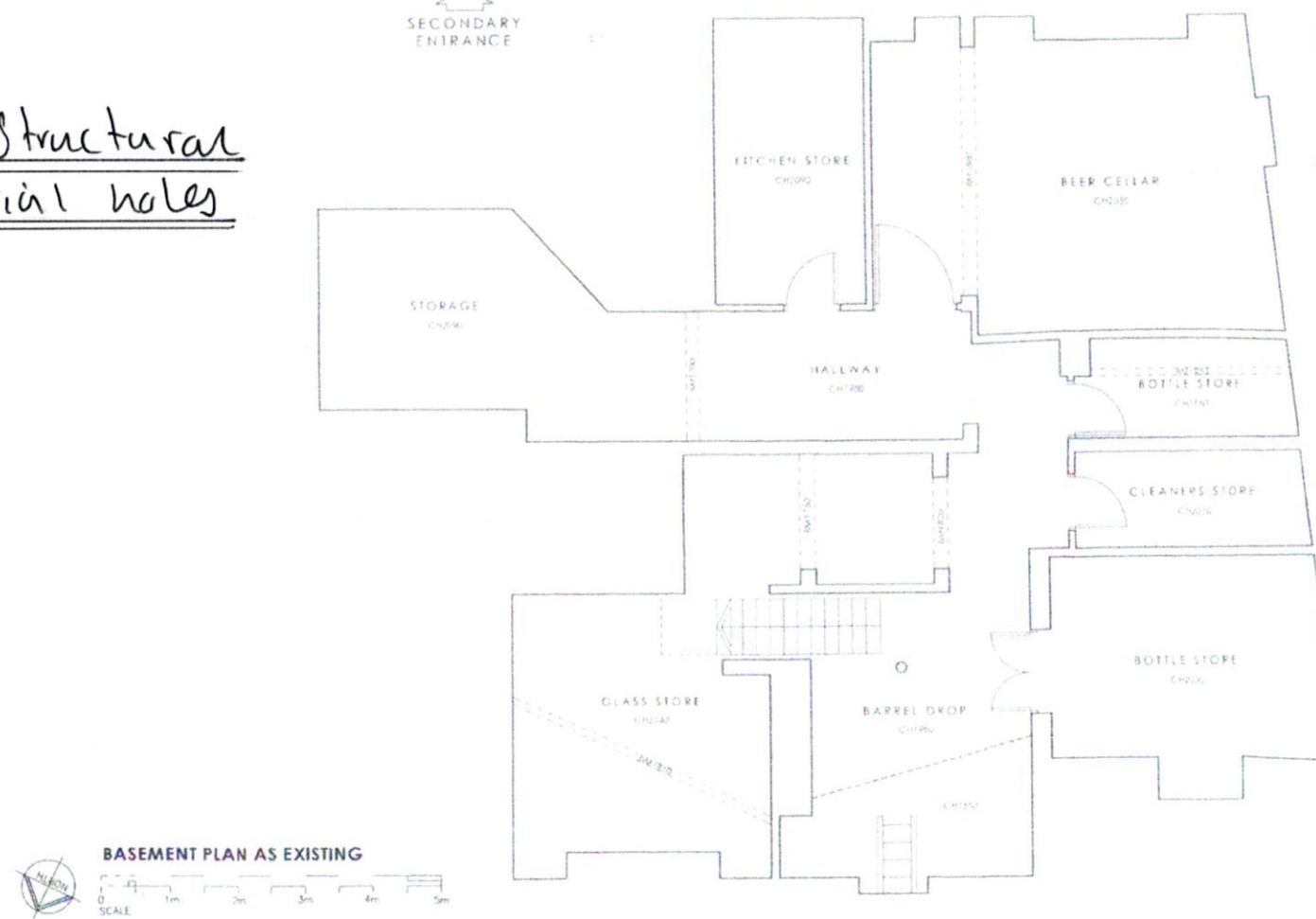
	Rev		Description	By	Date
	INVENTIVE DESIGN ASSOCIATES ARCHITECTURE & INTERIOR DESIGN				
	57 Station Road, Cheadle Hulme Stockport, Greater Manchester SK8 7AA Company Reg No: 1221414				
	TRUST PUBS The Brunswick 97 Piccadilly, Manchester M1 2DB				
	GF & BASEMENT PLAN				
0161 428 0310 office@inventiveda.com www.inventiveda.com @inventiveda	DRAWN	JW	DATE	11/01/24	DRAWING NO.
	SCALE	1:50&A1	REV.		22108-102



- ① - 150x75, 4m Span @ 400mm c/c
- ② - 150x75, 4m Span @ 400mm
- ③ - 100x80, 2m Span @ 350mm
- ④ - 150x50, 2m Span, @ 250mm c/c.

ASSUMED TIMBER STRUCTURAL MEMBER SIZES BASED ON TRIAL HOLE of 08/05/2024, - ALL TO BE CHECKED ONCE ASBESTOS REMOVED.

SKETCH 2 - ASSUMED Structural layout following trial holes of 08/05/2024.



- DENOTE 'ESTIMATED POSITION OF SUPPORT WALL IN CELLAR.
- /// DENOTES AREA IN CELLAR NOT ACCESSED, ASSUMED BACK FILLED.
- TRIAL HOLE POSITION

ida 0161 428 0310 office@inventiveda.com www.inventiveda.com @inventiveda	Rev	Description	By	Date
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	TRUST PUBS The Brunswick 97 Piccadilly, Manchester M1 2DB GF & BASEMENT PLAN			
	DRAWN	JW	DATE	11/01/24
SCALE	1:50	REV.		22108-102

7. Appendix B – Check Calculations





Project	EQ92 - The Brunswick, Manchester				Job No.	EQ92	
Section	Timber Ground Floor Check.				Sheet no./rev	12	Checking Level
Calc. by	JBH	Date	08/05/24	Chk'd by	JBH	Date	08/05/24
					App'd by	JBH	Date

EXISTING GROUND FLOOR REVIEW

NOTE:- All member sizes and spans are assumed based on the limited trial holes inspected on 08/05/24. All details to be checked prior to finalising.

ASSUMPTIONS

TIMBER GRADE - C16

LOADS = Dead Load - 0.75 kN/m^2

LIVE LOAD - 5.0 kN/m^2

AREA OVER CELLAR, AREA 1

SPAN = 4 m

SPACING = 0.4 m

LOAD = $0.4 \text{ m} \times \text{DL} = 5 \text{ kN/m}^2 = 2 \text{ kN/m}$

LL = $0.75 \text{ kN/m}^2 = 0.3 \text{ kN/m}$

SECTION SIZE = $150 \text{ mm} \times 75 \text{ mm}$

- MEMBER FAILS, - Maximum Span = 2 m

AREA OVER KITCHEN STORE, AREA 2

- All as above and sufficient @ 2 m span.

AREA 3 OVER HALLWAY

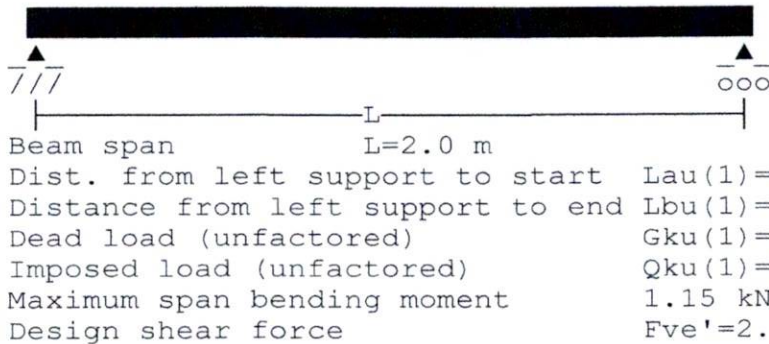
- Take load as above, Span 2 m , 100×80 Section
SECTION FAILS, without LOAD of BAR!

AREA 4 - Rear of Bar

- Take load as above, Span 2 m , 100×50 Section
- Section fails in deflection.

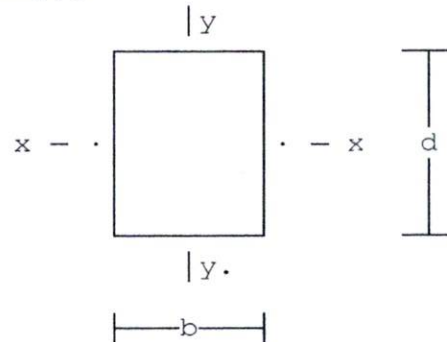
Location: Area 2 over Kitchen Store

Timber beam to BS5268-2:2002



Simply supported beam subjected to vertical loads.

Section design parameters



Design axial load (+ve compress) $F_a=0.5$ kN
 Depth of section $d=150$ mm
 Width of section $b=75$ mm
 Eff length for bending about xx $L_{ex}=2000$ mm
 Eff length for bending about yy $L_{ey}=1000$ mm
 Length of bearing $l_b=75$ mm
 From BS5268-2 Table 18, bearing is < 75 mm from joist end.
 Bearing Modification factor $K_4=1.0$
 Strength class C16 to Table 8
 Timber service class adopted $tmclass=2$
 Timber service class modification factor $K_2=1$ as Table 16.
 Duration of loading $K_3=1$
 Depth factor $K_7=(300/d)^{0.11}=1.0792$
 Load-sharing modification factor $K_8=1.1$
 Modification factor $K_{12}=(0.5+(1+\eta)*C/2)-((0.5+(1+\eta)*C/2)^2-C)^{0.5}=0.75531$
 No notches exist at the support $K_5=1.0$
 Interaction factor $factor=\sigma/(\sigma_{ad}*bsmf)+\sigma_{ca}/\sigma_{cad}=0.65895$

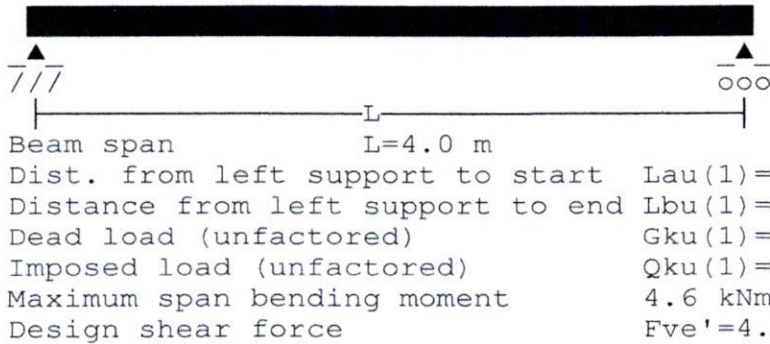
DESIGN
SUMMARY

Member: 150 mm x 75 mm
Strength class C16 to Table 8
Moisture service class 2
Bending stress 4.0889 N/mm²
Permissible bending 6.2919 N/mm²
Comp Stress @ Mids. 0.044444 N/mm²
Permiss compression 5.6498 N/mm²
Interaction factor 0.65895
Deflection 4.255 mm
Limiting deflection 6 mm
Shear stress 0.30667 N/mm²
Permissible shear 0.737 N/mm²
Bearing stress 0.40889 N/mm²
Permissible bearing 2.42 N/mm²

No254

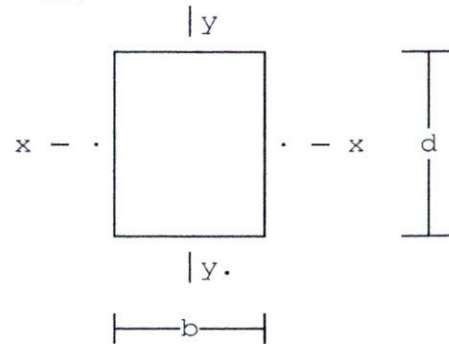
Location: New Timber Section over Cellar

Timber beam to BS5268-2:2002



Simply supported beam subjected to vertical loads.

Section design parameters



Design axial load (+ve compress) $Fa=0.5$ kN
Depth of section $d=250$ mm
Width of section $b=75$ mm
Eff length for bending about xx $L_{ex}=4000$ mm
Eff length for bending about yy $L_{ey}=600$ mm
Length of bearing $l_b=75$ mm
From BS5268-2 Table 18, bearing is < 75 mm from joist end.
Bearing Modification factor $K4=1.0$
Strength class C24 to Table 8
Timber service class adopted $tmclass=2$
Timber service class modification factor $K2=1$ as Table 16.
Duration of loading $K3=1$
Depth factor $K7=(300/d)^{0.11}=1.0203$
Load-sharing modification factor $K8=1.1$
Modification factor $K12=(0.5+(1+\eta)*C/2)-((0.5+(1+\eta)*C/2)^2-C)^{0.5}=0.69854$
No notches exist at the support $K5=1.0$
Interaction factor $factor=\sigma/(\sigma_{ad}*bsmf)+\sigma_{ca}/\sigma_{cad}=0.70477$

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Date: 09.05.24
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Office: 5578

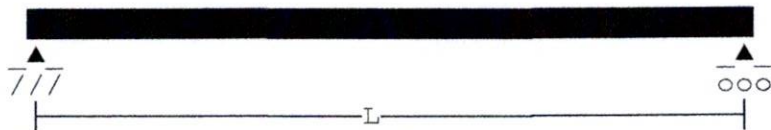
DESIGN
SUMMARY

Member: 250 mm x 75 mm
Strength class C24 to Table 8
Moisture service class 2
Bending stress 5.888 N/mm²
Permissible bending 8.4171 N/mm²
Comp Stress @ Mids. 0.026667 N/mm²
Permiss compression 6.0703 N/mm²
Interaction factor 0.70477
Deflection 11.558 mm
Limiting deflection 12 mm
Shear stress 0.368 N/mm²
Permissible shear 0.781 N/mm²
Bearing stress 0.81778 N/mm²
Permissible bearing 2.64 N/mm²

No254

Location: New Timber over hallway

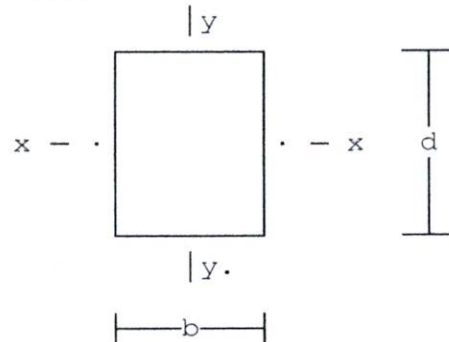
Timber beam to BS5268-2:2002



Simply supported
 beam subjected to
 vertical loads.

Beam span	$L=2.0$ m	
Distance from left support		$L_c(1)=1$ m
Dead load (unfactored)		$G_{kc}(1)=2$ kN
Imposed load (unfactored)		$Q_{kc}(1)=1$ kN
Dist. from left support to start		$L_{au}(1)=0$ m
Distance from left support to end		$L_{bu}(1)=2.0$ m
Dead load (unfactored)		$G_{ku}(1)=2.0$ kN/m
Imposed load (unfactored)		$Q_{ku}(1)=0.3$ kN/m
Maximum span bending moment		2.65 kNm
Design shear force		$F_{ve}'=3.8$

Section design parameters



Design axial load (+ve compress)	$F_a=0.5$ kN
Depth of section	$d=200$ mm
Width of section	$b=75$ mm
Eff length for bending about xx	$L_{ex}=2000$ mm
Eff length for bending about yy	$L_{ey}=600$ mm
Length of bearing	$l_b=75$ mm
From BS5268-2 Table 18, bearing is	< 75 mm from joist end.
Bearing Modification factor	$K_4=1.0$
Strength class C24 to Table 8	
Timber service class adopted	$tmclass=2$
Timber service class modification factor	$K_2=1$ as Table 16.
Duration of loading	$K_3=1$
Depth factor	$K_7=(300/d)^{0.11}=1.0456$
Load-sharing modification factor	$K_8=1.1$
Modification factor	$K_{12}=(0.5+(1+\eta)*C/2)-((0.5+(1+\eta)*C/2)^2-C)^{0.5}=0.82808$
No notches exist at the support	$K_5=1.0$

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Interaction factor

$$\text{factor} = \frac{\sigma}{(\sigma_{ad} * b_{smf}) + \sigma_{ca}} \\ / \sigma_{cad} = 0.61946$$

DESIGN
SUMMARY

Member: 200 mm x 75 mm
Strength class C24 to Table 8
Moisture service class 2
Bending stress 5.3 N/mm²
Permissible bending 8.6263 N/mm²
Comp Stress @ Mids. 0.033333 N/mm²
Permiss compression 7.196 N/mm²
Interaction factor 0.61946
Deflection 3.191 mm
Limiting deflection 6 mm
Shear stress 0.38 N/mm²
Permissible shear 0.781 N/mm²
Bearing stress 0.67556 N/mm²
Permissible bearing 2.64 N/mm²

No254

8. Appendix C – Sketch 3 – Making Good Structural Works to Ground Floor



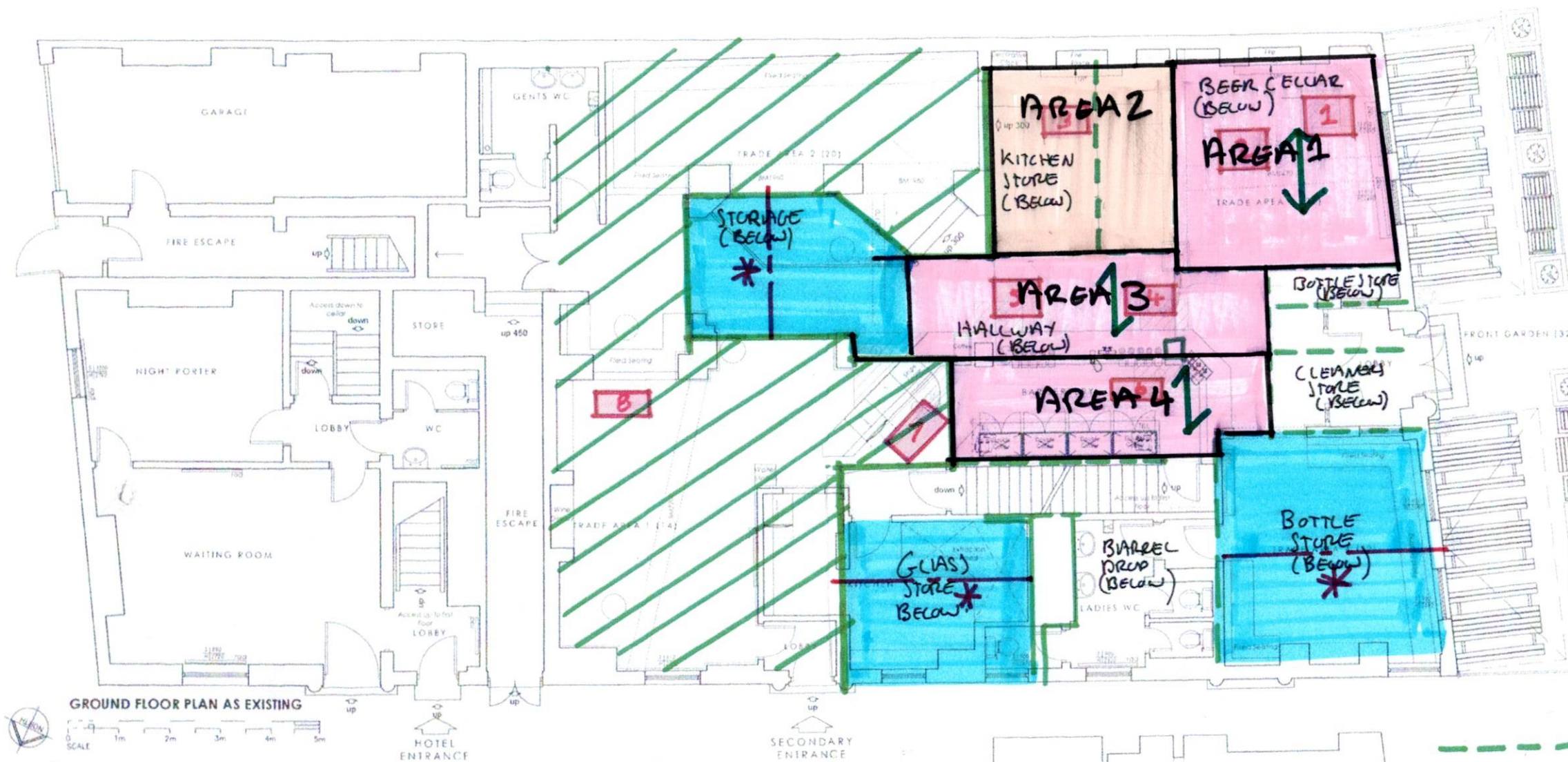
KEY:-

- AREA TO BE RETAINED ALLOW PROVISIONAL SUM FOR SOME STRENGTHENING
- AREA OF FLOOR TO BE REPLACED, ALLOW FOR
- ↑ - 250x75 C24 TIMBERS @ 400mm C/C OVER CELLAR, AREA 1
- 1 - 200x75 TIMBER @ 400mm C/C, C24, IN AREA 3 OVER WALLWAY & AREA 4 TO REAR OF BAR.
- AREAS TO BE RETAINED FOR PRICING PURPOSES ALLOW FOR INSERTING A 203x203x46 UC SECTION TO HALF SPAN OF FLOOR OVER.
- AREA OF ASSUMED GROUND BEARING ALLOW PROVISIONAL SUM FOR MAKING GOOD 50% OF FLOOR.

--- DENOTE 'ESTIMATED POSITION OF SUPPORT WALL IN CELLAR.

/// DENOTES AREA IN CELLAR NOT ACCESSED, ASSUMED BACK FILLED.

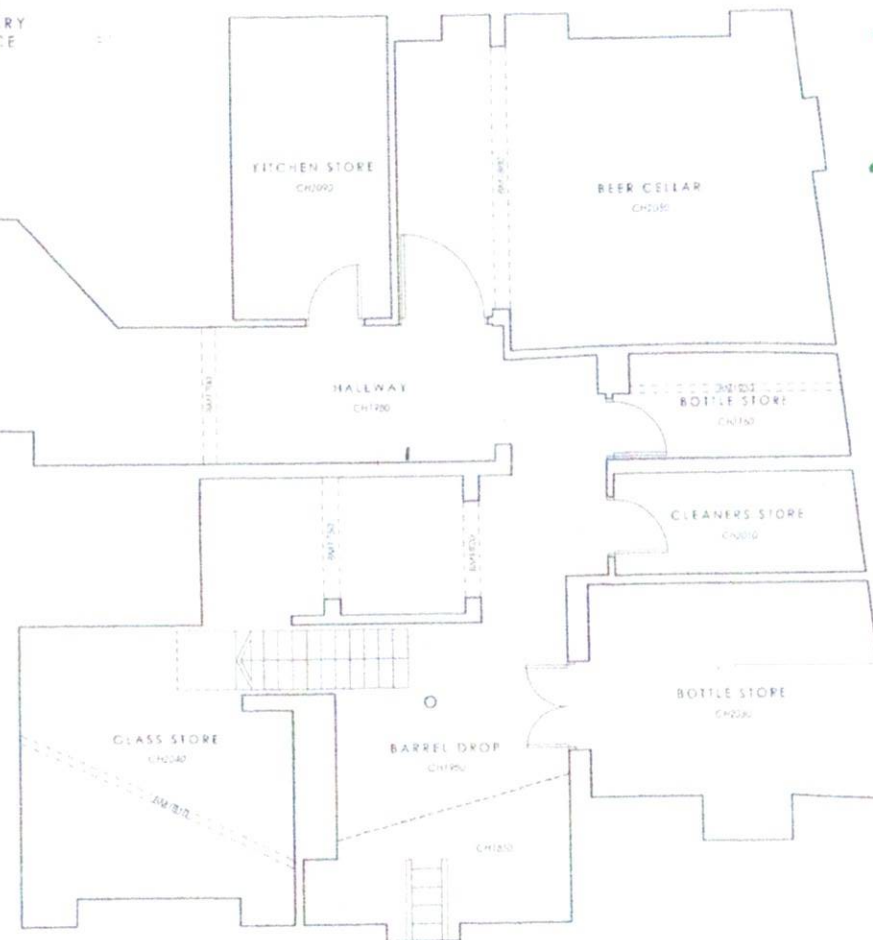
□ - TRIAL HOLE POSITION



SKETCH 3 - MAKING GOOD STRUCTURAL WORKS TO GROUND FLOOR

08/05/24

- ALL DETAILS ISSUED FOR 'BUDGET PRICING PURPOSES ONLY, ALL TO BE CONFIRMED ONCE ASBESTOS REMOVED AND THE FULL UNDERSIDE OF THE FLOOR CAN BE RE-SURVEYED.
- NO TIMBER AND DAMP SURVEY HAS BEEN CARRIED OUT. THIS WILL NEED TO BE DONE PRIOR TO FINISHING DETAILS.
- APPROPRIATE VENTILATION WILL NEED TO BE AGREED, ALLOW PROVISIONAL SUM.
- ALL DETAILS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS PLANS, SECTIONS AND DETAILS



Rev		Description		By	Date
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TRUST PUBS The Brunswick 97 Piccadilly, Manchester M1 2DB GF & BASEMENT PLAN					
0161 428 0310 office@inventiveda.com www.inventiveda.com @inventiveda		DRAWN JW DATE 11/01/24 SCALE 1:50 B&I	REV. - DATE REV.	DRAWING NO. 22108-102	