



17 - 21 PICCADILLY, YORK

CITY OF YORK COUNCIL

STRUCTURAL INSPECTION

3 November 2009

DOCUMENT CONTROL RECORD

Contract: 17 – 21 Piccadilly, York.

Document Title: Structural Inspection

Our Ref: 10090/1.0/DF

Prepared by: Raymond Hardy. **Date:** 3 November 2009

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STRUCTURAL INSPECTION AT
17-21 PICCADILLY, YORK

1.0 INTRODUCTION

1.1 We have been instructed by the City of York, Council to carry out a visual structural inspection of the building forming 17 to 21 Piccadilly, York. (grid reference SE605516)

1.2 The inspection was requested by Steve Owen for the derelict building further to a document produced for the City of York Council Property Services Department. Concerns were raised with regards to the overall stability of the building.

1.3 Record photographs are contained in appendix A.

1.4 Our inspection took place on Monday 26th October 2009 and our findings are contained in the report below.

2.0 INSPECTION

2.1 The building is a long steel framed single storey construction with columns at regular centres supporting steel trusses spanning the full width of the main building. Along the rear elevation there is a lean-to section of the building for approximately one quarter of the length of the main building. The roof consists of asbestos cement sheeting on timber purlins directly supported on the steel trusses. Except for the most of the rear elevation the walls are brickwork for the full height. Timber rails support asbestos cement sheeting to form the rear elevation but a significant proportion has been removed. (see photographs 1 to 4, 32, 33, and 37 to 41)

2.2 A brief inspection of the external envelope indicated a few minor defects which will be discussed later in this report.

- 2.3 Internally it became apparent that the Piccadilly masonry elevation is built tightly between the columns and would give resistance to longitudinal wind forces whereas the rear elevation with only light weight cladding and no vertical bracing would not.
- 2.4 Approximately half way down the building there is cross bracing at top boom level of the truss. Although this does not completely extend down to the eaves or up to the apex but it is considered to be sufficient to transfer longitudinal wind loading to the side walls. (see photographs 52 and 53)
- 2.5 The gables at each end of the building along with the closed off Piccadilly entrance are not adequately tied in at purlin level. (see photographs 35, 36, 47 to 51, and 54 to 58)
- 2.6 Towards the Dennis Street end of the building there is a missing purlin at the bottom edge of the roof light. This has allowed the roof light to drop and is in danger of falling into the building. (see photograph 34) Photographs 43 and 44 show a typical purlin connection to the truss. Our observations indicate that there may be some incomplete connections which need to be reinstated. (see photograph 46)
- 2.7 From ground level it appears that there may be some loose masonry at the top of the Piccadilly and Dennis Street gables although it is understood that this was checked recently. (see photographs 12 to 14 and 30)
- 2.8 All the masonry elevations are rendered and there are indications that some of this render may be loose or may become loose.
- 2.9 Reveals to the old Piccadilly entrance have cracked for the full height of the original opening. (see photographs 5 to 11)
- 2.10 Where the timber purlins are built into or on to walls there is evidence that these may have been affected by water. (see photographs 47 to 51 and 54 to 58)
- 2.11 At the time of this inspection some demolition of internal partitions had taken place but this has left a wall at mezzanine level unstable. (see photograph 42)

2.12 There were other minor defects observed but these have no implications on the overall stability of the building.

3.0 **CONCLUSIONS AND RECOMMENDATIONS**

3.1 Our understanding is that the building will remain unused, but the council need to carry out works sufficient to ensure its stability. The comments given below are therefore the minimum works necessary to ensure structural stability over the medium term. We would recommend that further inspections are carried out on a yearly basis to determine if further deterioration has occurred.

3.2 To regain longitudinal stability along the rear elevation it will be necessary to provide bracing in one of the bays. We would recommend that this is fixed in the open bay formed during the clean up works. (see detail sheets 3 & 4)

3.3 With regards to the longitudinal stability along the Piccadilly elevation we consider that the infill brick panels are sufficient for this purpose.

3.4 To give the frames lateral stability we would recommend strutting all the steel columns along the Piccadilly elevation as shown on detail sheets 1 & 2.

3.5 The missing timber purlin must be replaced with a C24 timber of the same size and fixed similar to the existing purlins. To achieve this it may be necessary to remove some of the existing roof lights and sheeting. During this operation and whilst the scaffolding is still in place we would recommend that the condition of the existing fixings are checked to determine if further fixing are required.

3.6 All purlin connections to be checked and any missing bolts etc. to be replaced.

3.7 We would recommend that a timber specialist is employed to check the ends of the purlins where these bear into or on the external walls to comment on their structural integrity. Should any of these be deemed to not to be adequate they should be replace with the same size timber in class C24.

- 3.8 Wall bearing timber purlins to be strapped down to the wall in all locations and the top of the wall to be restrained with straps along the purlin and fixed to the wall. (see detail sheets)
- 3.9 Render to the masonry elevations need to be checked to eliminate any loose areas by removing.
- 3.10 The top of the brickwork walls forming gables to Dennis Street and Piccadilly also need to be checked for any loose bricks.
- 3.11 Cracking within the masonry elevations has been caused by thermal movement most of which should not cause any problems except for the cracked reveals to the old Piccadilly entrance. The external leaf needs to be tied back to prevent any further damage. (see detail sheets)
- 3.12 Finally we would recommend that the unstable partially demolished mezzanine wall is taken down back to a suitable safe location.

4.0 **GENERAL**

- 4.1 In preparing this report, we have not inspected parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.

Prepared by: -

.....
Raymond Hardy
Senior Structural Engineer

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Appendix A
SITE PHOTOGRAPHS



Photograph 1 Piccadilly Elevation



Photograph 2 Dennis Street Elevation



Photograph 3 Dennis Street Elevation



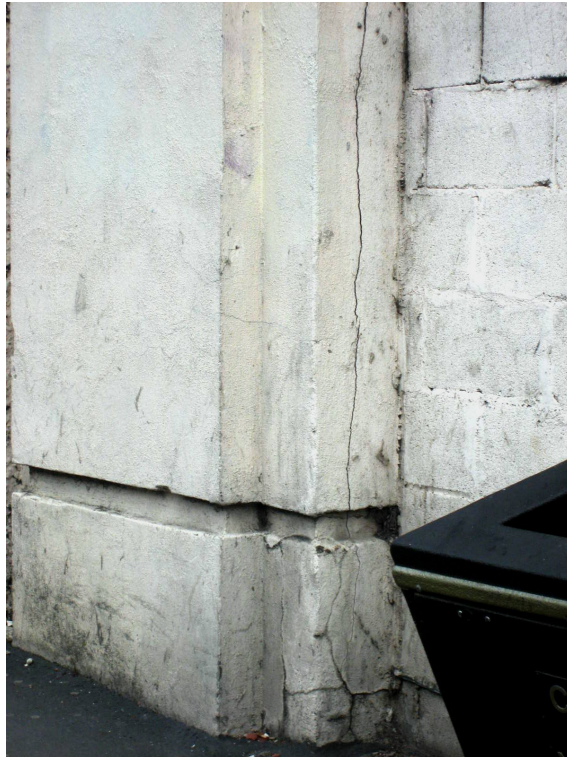
Photograph 4 North West Elevation



Photograph 5 Old Piccadilly Entrance



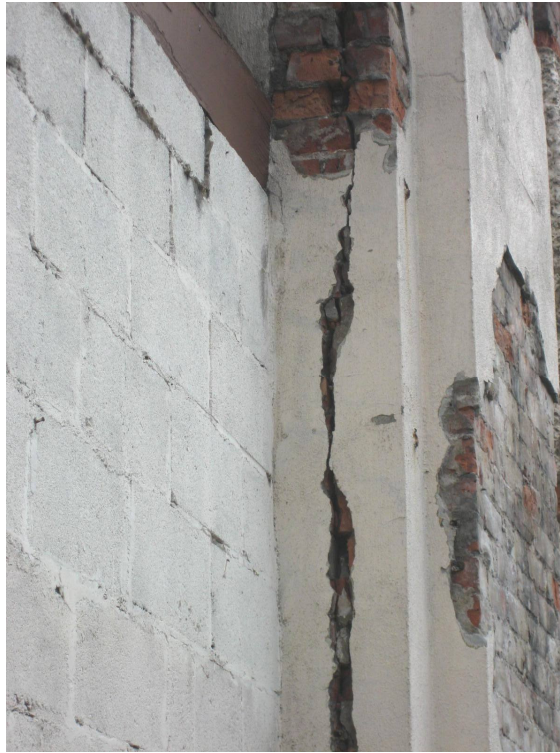
Photograph 6 Old Piccadilly Entrance



Photograph 7 Old Piccadilly Entrance



Photograph 8 Old Piccadilly Entrance



Photograph 9 Old Piccadilly Entrance



Photograph 10 Old Piccadilly Entrance



Photograph 11 Old Piccadilly Entrance



Photograph 12 Old Piccadilly Entrance



Photograph 13 Old Piccadilly Entrance



Photograph 14 Old Piccadilly Entrance



Photograph 15 Part Piccadilly Elevation



Photograph 16 Part Piccadilly Elevation



Photograph 17 Part Piccadilly Elevation



Photograph 18 Part Piccadilly Elevation



Photograph 19 Part Piccadilly Elevation



Photograph 20 Part Piccadilly Elevation



Photograph 21 Part Piccadilly Elevation



Photograph 22 Part Piccadilly Elevation



Photograph 23 Part North West Elevation



Photograph 24 Part North West Elevation



Photograph 25 Part North West Elevation



Photograph 26 Part North West Elevation



Photograph 27 Part North West Elevation



Photograph 28 Part North West Elevation



Photograph 29 Rear Corner of North West Elevation



Photograph 30 Dennis Street Entrance Elevation



Photograph 31 Part Dennis Street Entrance Elevation



Photograph 32 Dennis Street Entrance Elevation



Photograph 33 Rear Elevation



Photograph 34 Missing Purlin in Roof



Photograph 35 Internal view above Dennis St. Entrance



Photograph 36 Internal view above Piccadilly Entrance



Photograph 37 Internal view towards North West Entrance



Photograph 38 Internal view towards North West Entrance



Photograph 39 Part view on rear elevation



Photograph 40 Part view on rear elevation



Photograph 41 Part view on rear elevation



Photograph 42 partially demolished wall at Dennis St. end



Photograph 43 Typical purlin connection



Photograph 44 Typical purlin connection



Photograph 45 High level internal view towards North West



Photograph 46 Purlin connection indicating missing bolts



Photograph 47 Purlin bearing into wall above Piccadilly Entrance



Photograph 48 Purlin bearing into wall above Piccadilly Entrance



Photograph 49 Purlin bearing into wall above Piccadilly Entrance



Photograph 50 Purlin bearing into wall above Piccadilly Entrance



Photograph 51 Purlin bearing into wall above Piccadilly Entrance



Photograph 52 Cross bracing in roof



Photograph 53 Cross bracing in roof



Photograph 54 Purlin bearing North West Entrance



Photograph 55 Purlin bearing North West Entrance



Photograph 56 Purlin bearing above Dennis St. Entrance



Photograph 57 Purlin bearing above Dennis St. Entrance



Photograph 58 Purlin bearing above Dennis St. Entrance

Appendix B
REMEDIAL WORK DETAIL SHEETS

WM SAUNDERS PARTNERSHIP LLP

WSP

DETAIL SHEET

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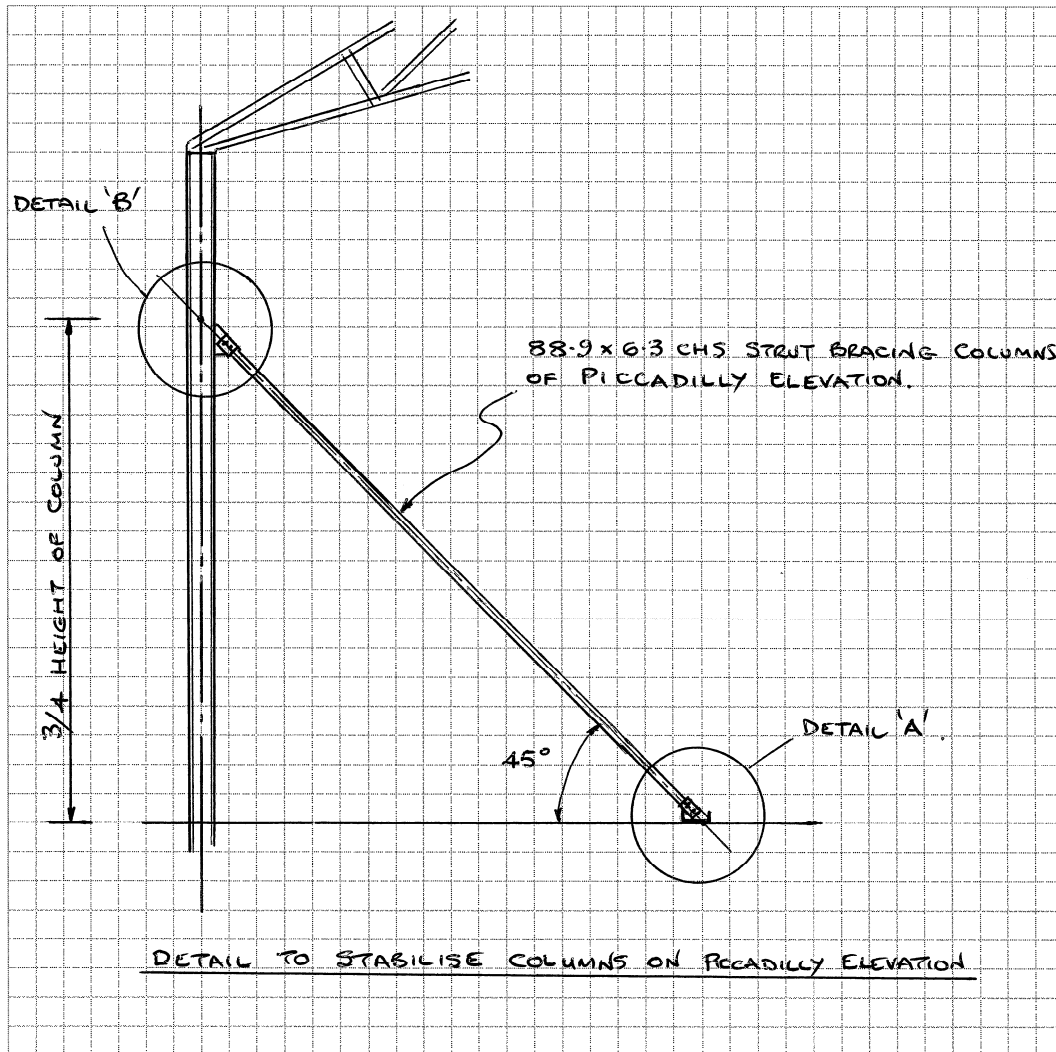
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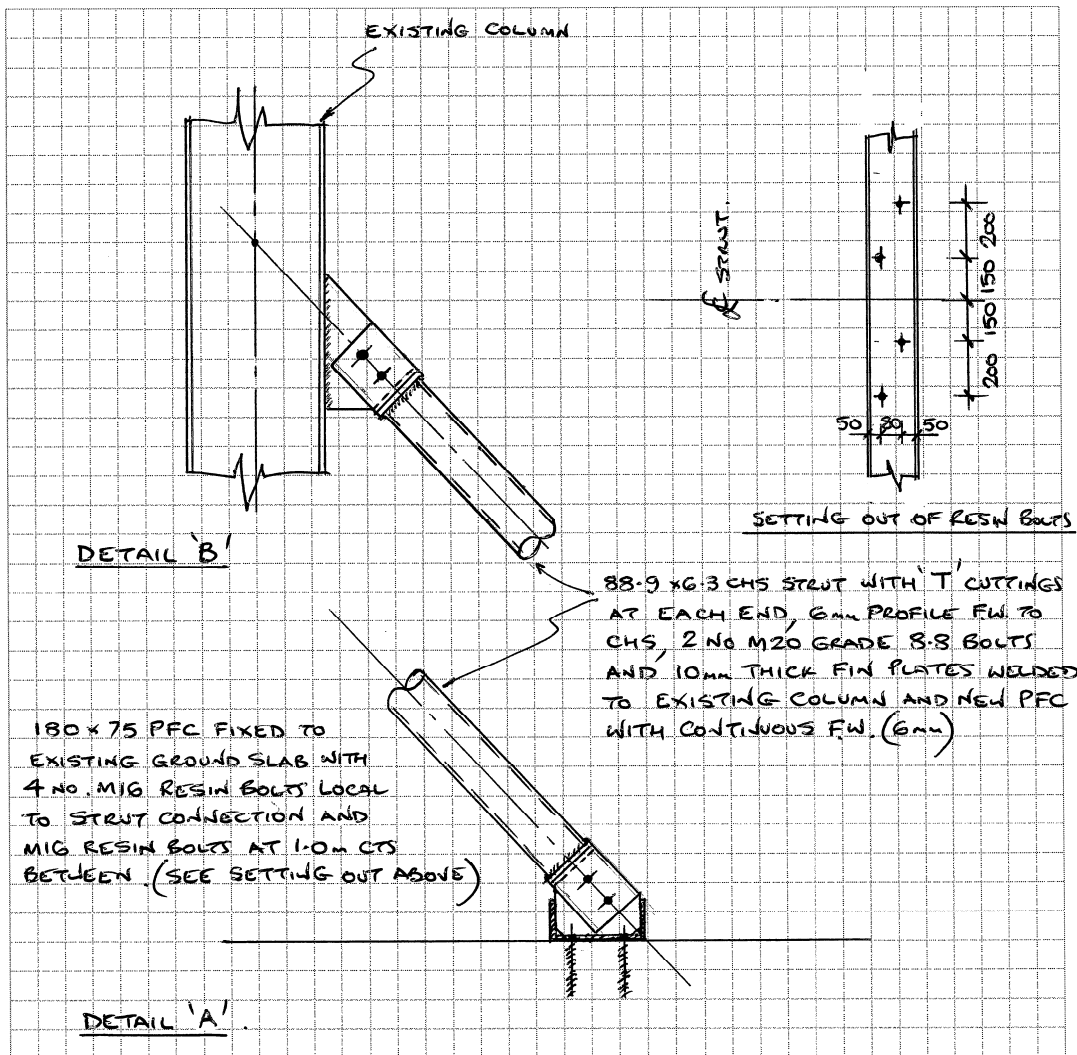
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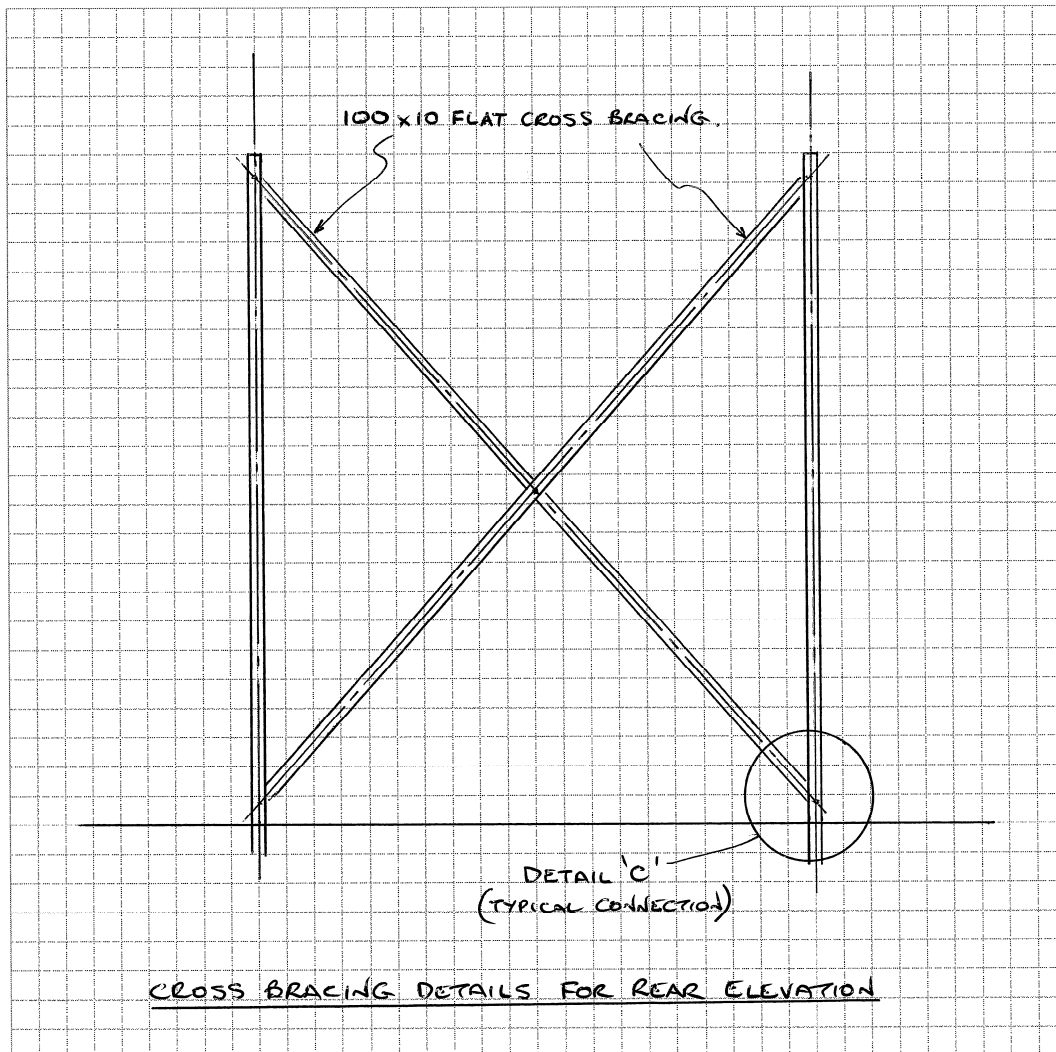
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Calculations for: Remedial Work Details (BRACING TO REAR ELEVATION)

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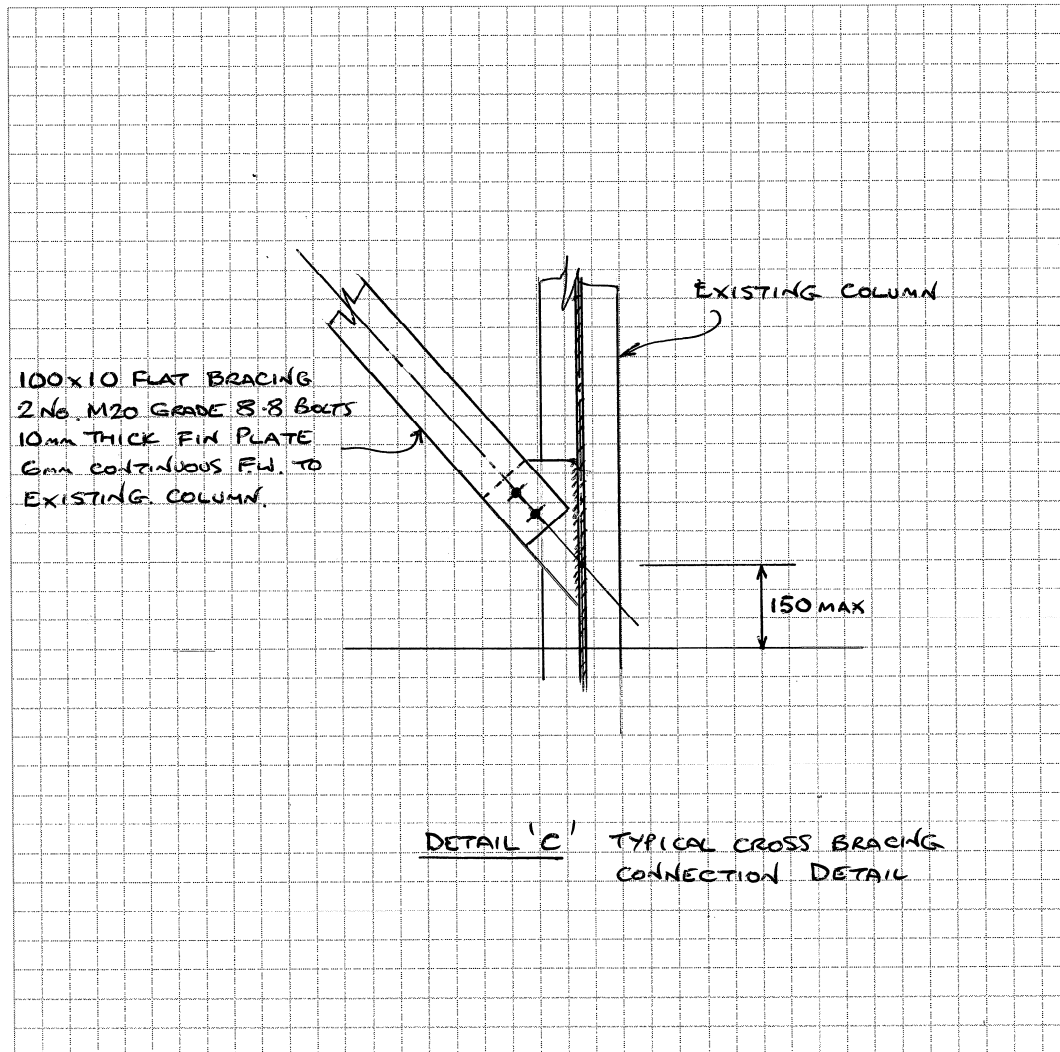
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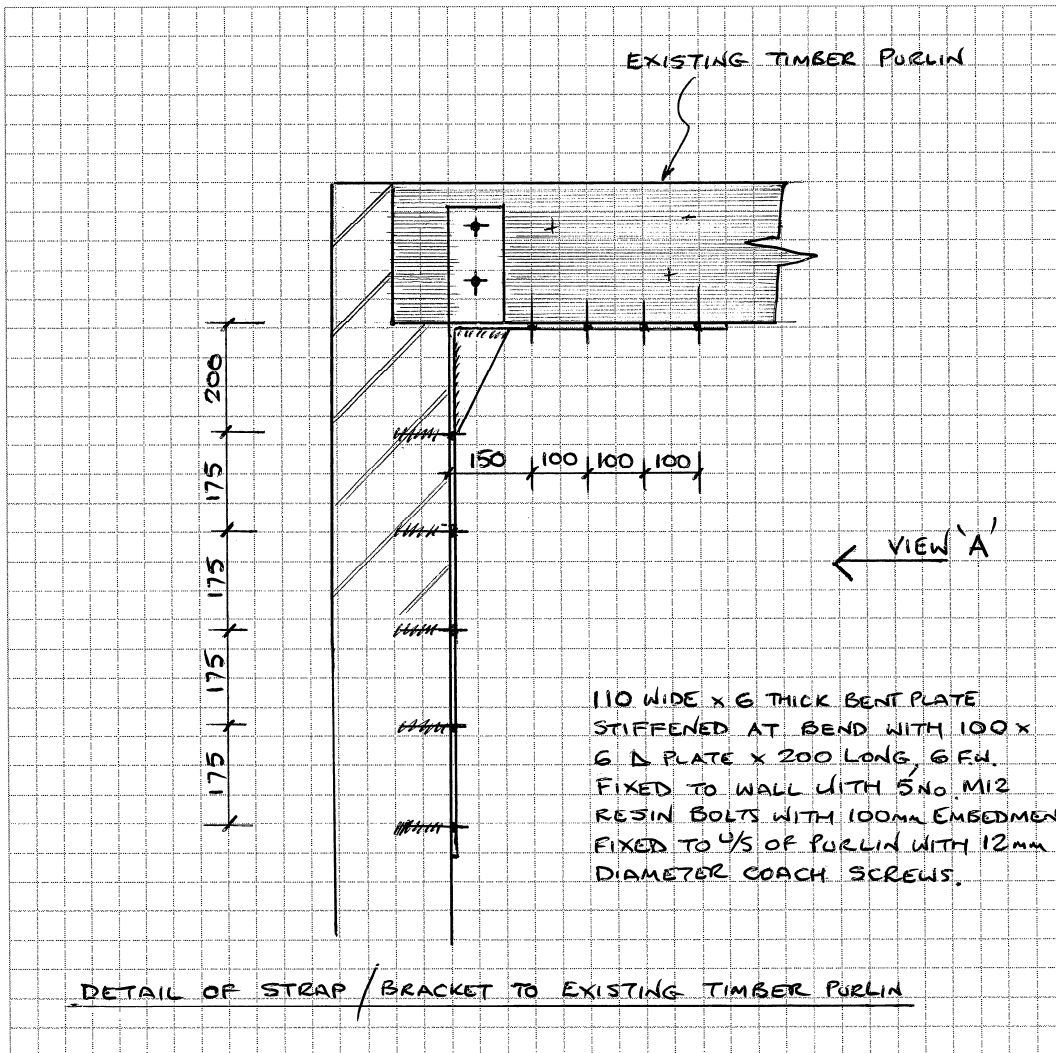
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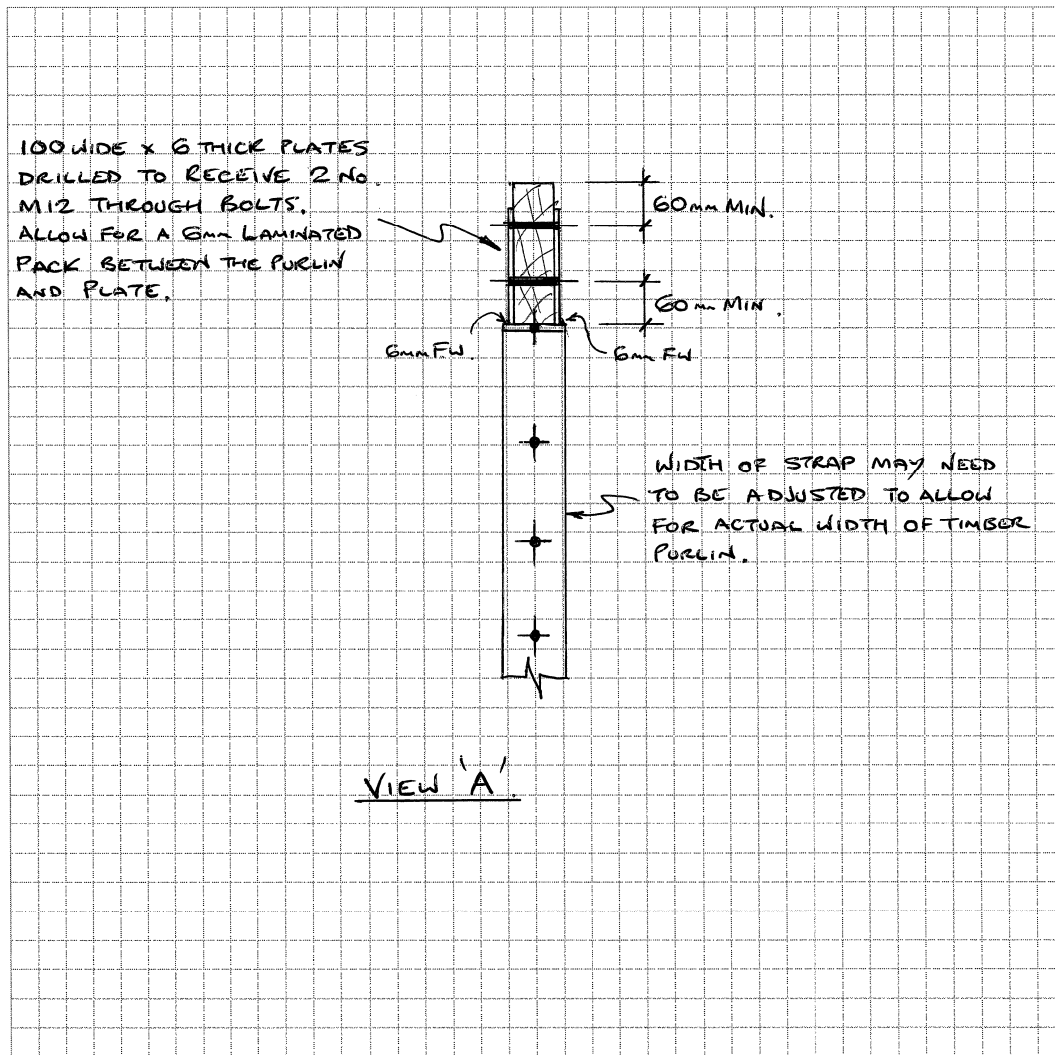
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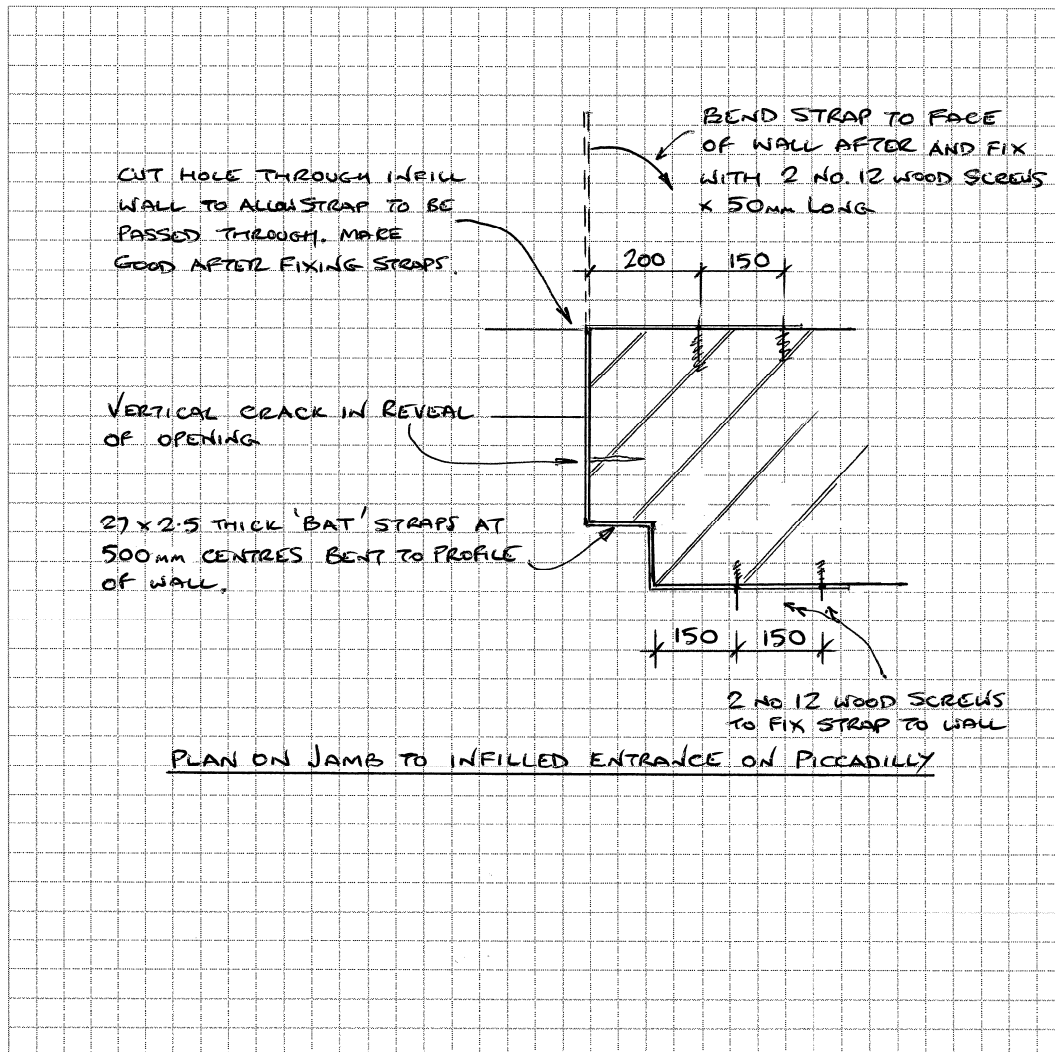
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