Structural

TTW TaylorThomsonWhitting

Structural Condition Report ATECO BUILDING – VALAD TEMPE SITE

for Valad Property Group

10 JULY 2008

071558

Taylor Thomson Whitting (NSW) Pty Ltd Consulting Engineers ACN 113 578 377
48 Chandos Street St Leonards NSW 2065 PO Box 738 Crows Nest 1585
T 61 2 9439 7288 F 61 2 9439 3146 ttwsyd@ttw.com.au www.ttw.com.au

Quality System

SYDNEY
CANBERRA
MELBOURNE
QEC 22375

Quality Endorsed Company
ISO 9001

Table of Contents

Page

1.0 INTRODUCTION 3

2.0 SCOPE OF REVIEW 3

3.0 DESCRIPTION OF BUILDING STRUCTURE 4

4.0 BUILDING INSPECTION 4

5.0 LIFE CYCLE ASSESSMENT/MAINTENANCE REQUIREMENTS 5

6.0 CODE COMPLIANCE 6

6.1 AUSTRALIAN DESIGN CODES 6

6.2 BUILDING CODE OF AUSTRALIA 6

6.2.1 WATER TIGHTNESS 6

6.2.2 FIRE RATING 6

7.0 CONCLUSIONS 7

1.0 INTRODUCTION

At the request of Valad Property Group, Taylor Thomson Whitting undertook a review of the existing Ateco Building at the Valad Tempe Site. The purpose of the review was to inspect the general condition of the building and identify items which may require repair or replacement found during the inspection of the accessible structural elements.

All descriptions, references to conditions and other details are a general guidance only and are given as our opinion but any interested parties should not rely on them as statements or representations of fact and must satisfy themselves as to the correctness, quantity, costs, etc of each of them.

The particulars set out in this report are for the exclusive use of Valad Property Group and is copyright and the property of Taylor Thomson Whitting (NSW). No responsibility or liability is accepted as a result of the use of this report by any other party, and is not to be used for any other purpose.

2.0 SCOPE OF REVIEW

In order to form our opinion on the elements we could view, the following level of review was undertaken:

- Building inspection visual and photographic of accessible areas
- Existing structural documentation was not available.
- Design analysis or calculations were not carried out.
- External pavements were inspected.
- Stormwater drainage was not inspected.
- Facades were inspected.

The level of review undertaken is limited to what is recorded in the following pages of this report and was not sufficient to certify that the building was structurally adequate in accordance with the design codes at the time of construction nor present codes.

Only visual assessment of accessible areas of the building were taken and this report does not cover detailed measurement of defects.

This report does not cover issues such as drainage, services, plant, cladding, waterproof membranes, asbestos, fitouts, architectural items.

Cladding, sealants or waterproof membranes were not inspected and thus water tightness in this respect was not assessed and our comments would be limited to observed water leaks only.

3.0 DESCRIPTION OF BUILDING STRUCTURE

The existing Ateco Building is a concrete framed building.

The building is supported on concrete columns with the building having 3 full levels and a lower basement covering only part of the building footprint.

At the front of the building a concrete and masonry clock tower extends to a height of approximately 20m above the Princes Highway street entry level.

A building joint exists through the centre of the building. The joint is a straight slab joint, dowels may exist between the two slabs but this is unable to be confirmed via a visual inspection.

The facade is a mixture of masonry cladding and glazing.

Approx Date Constructed: Unknown
Type of Construction: Reinforced concrete framed
Roof Construction: Steel Truss
Number of levels: 2 above ground (plus 2 lower levels)
Number of Basements: 2
Approx Column Grid: 7.2 x 8.4
Type of Facade: Face brick and glazing
Type of Footings: Unknown

4.0 BUILDING INSPECTION

Mr Glen Hetherington from Taylor Thomson Whitting carried out the site inspection of the Ateco building on 26 June 2008.

The inspection was undertaken via visual methods and without any specialist access equipment.

In some locations such as in the service zones, it was not possible to view the structure directly due to Architectural finishes floor coverings and ceilings.

The facade was inspected by observations from Street level. It was not possible to view approximately 50% of the existing Eastern façade elevation as an existing building currently conceals this area. It is our understanding that this existing building is to be demolished under proposed plans.

In order to assess the structural performance it is necessary to rely on the following indicators;

- movement between structural and non structural elements
- cracks/spalling, both in structure and attached partitions
- corrosion staining and/or spalling
- water leaks/dampness/seepage/ponding (NB detection subject to prevailing weather conditions at the time of inspection)
- noticeable visual or perceptible deflections/defects
- rusting/ paint work deteriorated on steelwork

During the inspection a number of site notes (refer Appendix A) and photographs (refer Appendix B) were recorded.

Generally the building was found to be in good condition.

5.0 LIFE CYCLE ASSESSMENT/MAINTENANCE REQUIREMENTS

The building age is unknown although it is expected that it would be in excess of 25 year old. As such any increased movements of the structure due to shrinkage and creep of the concrete are not likely to occur in the future.

There was evidence of pre-existing problems at the building construction joint. Long-term shrinkage and building movements have caused the joint to separate approximately 20mm. Concrete columns on each side of the joint have been stitched together with steel plates. The stitching has been carried out to minimise distress in the twin steel column supporting the roof. This column currently bridges the building joint.

There was evidence that some structural maintenance had been provided.

Maintenance requirements are;

- Localised cracking to face masonry to the external facades. Masonry needs to be removed and new masonry installed. This is not urgent but will require repairs in the medium term.

- Corrosion to the soffit of the level 1 slab. Drummy concrete is to be scabbled back to a solid substrate, bars are to power wire brush cleaned and then be primed with Nitoprime Zincrich. The concrete should be patched with Renderoc HB40, or a similar concrete repair system.

- Separation of the building joint has occurred. Any upgrade to the building should consider installing an appropriate coverplate to the joint such as a Latham expansion joint.

- The bearing plates of the roof trusses are showing evidence of corrosion which is in turn causing separation in the masonry bed joints. The bearing plates are required to be exposed in 3 separate locations so that an inspection can take place and appropriate rectification determined. It is expected that some repairs will be required during construction/fitout works.

- Evidence of water ingress was noted on the retaining walls to the ground floor slab.

- The existing on grade pavements to the front of the building show evidence of cracking, settlement and rutting. Longterm consideration to replacing this pavement should be considered.

6.0 CODE COMPLIANCE

6.1 Australian Design Codes

Prior to occupation the design of the existing roof trusses should be checked to confirm that they have sufficient capacity under the effects of wind uplift.

It was noted that the bottom chord of the truss currently does not have any lateral restraints. Originally the roof of the building may have been clad in Fibre Cement sheeting which may have been heavy enough to negate the wind uplift forces and the requirements for bracing the truss bottom chord.

6.2 Building Code of Australia

6.2.1 Water Tightness

Roof leakage was not inspected and thus water tightness in this respect was not assessed.

There were no obvious signs of leakage of the facade although this was not inspected in detail. It was noted that the glazing to the building appears to be in original condition and that some water ingress can be expected at glazing joints and junctions.

Water stains in isolated areas of the floor adjacent the western wall of the Ground floor was noted during the inspection. A small dish drain or hob and secondary wall will contain the minimal amount of water that currently penetrates through the retaining wall.

6.2.2 Fire Rating

The fire rating requirements of the exposed steel roof trusses will need to be assessed during the design stage. A fire rated ceiling may need to be installed.

Checks on covers to reinforcement have not been carried out, but we would expect that the reinforced concrete structure would have a structural FRL of approximately 2 hours. Detailed checks on the covers and structural sizes will be required in the design stage.

7.0 CONCLUSIONS

Based on the level of this review there is no evidence to suggest that the building will not continue to be suitable for its intended use.

We have not carried out a full design check of the structure as full documentation was not available. We have assessed the structural condition where structural deflections or cracking were apparent.

The following additional investigation or review is considered appropriate

- Design check of the existing roof truss to confirm its adequacy under the wind load pressures in accordance with AS1170.2.
- Exposing of the truss bearing plates to determine appropriate rectification details.
- Detailed checks for fire rating requirements during the design phase.
- Removal of select sample areas to the face brick façade to check the condition of the existing wall ties.

The building appears in a satisfactory condition structurally based on the level of defects observed, but requires the following rectification or remedial works in the short term;

- Repair of corroded reinforcement to the soffit of the level 1 slab.
- Repairs to the truss bearing plates.

Work in the medium term includes repairs to the cracked masonry on the façade. walls, and the installation of an appropriate building joint cover strip.

Other work such as the replacement of the external pavements, installation of hobs to control water ingress are of a aesthetic nature and can be undertaken depending on the required future use of the building.

Prepared by:
TAYLOR THOMSON WHITTING (NSW) PTY LTD

Glen Hetherington
Associate

Authorised by:
TAYLOR THOMSON WHITTING (NSW) PTY LTD

R. MACKELLAR
Director

P:\2007\0715\071558\Reports\080714 report.gh.doc

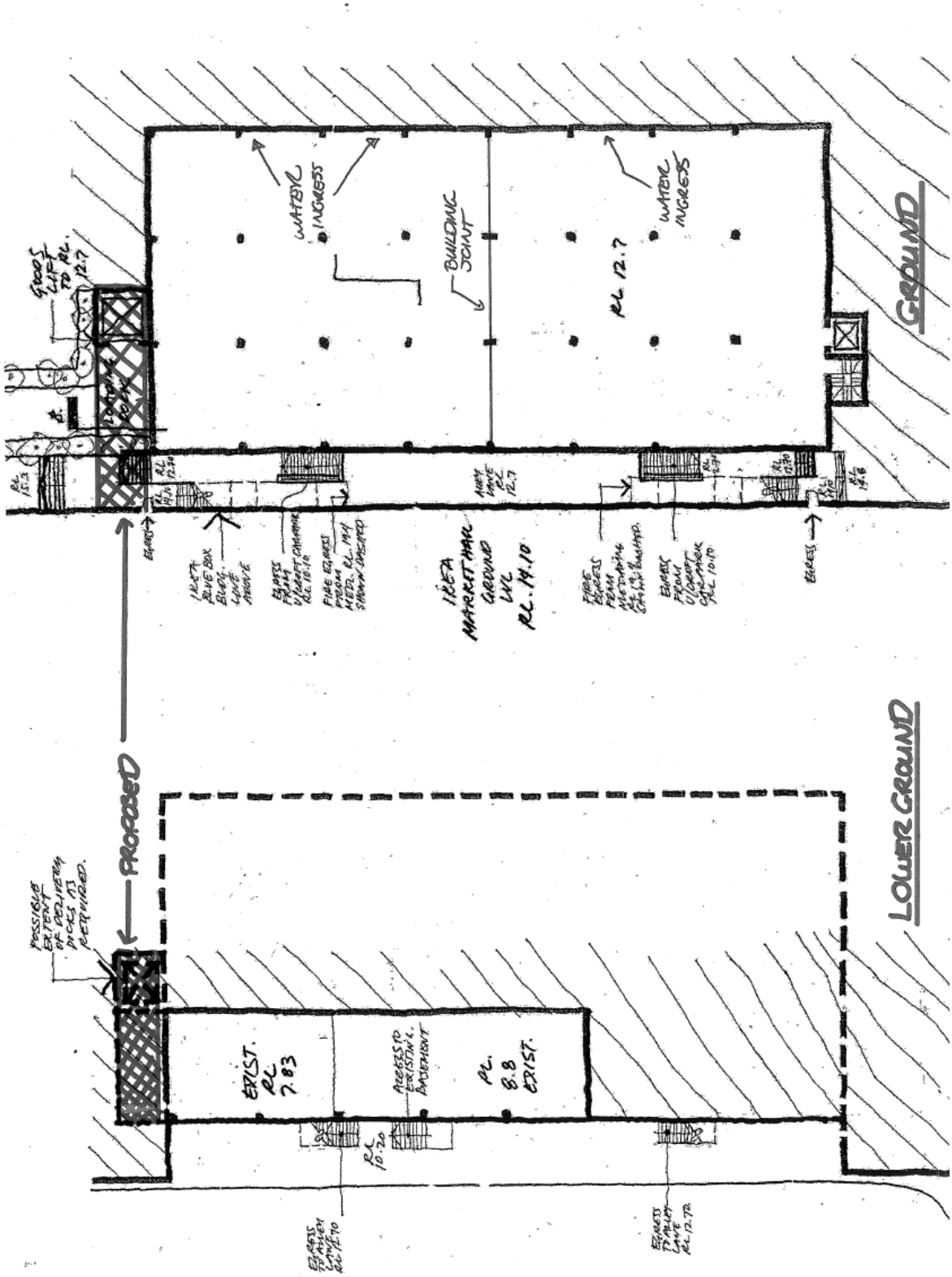
ATECO BUILDING

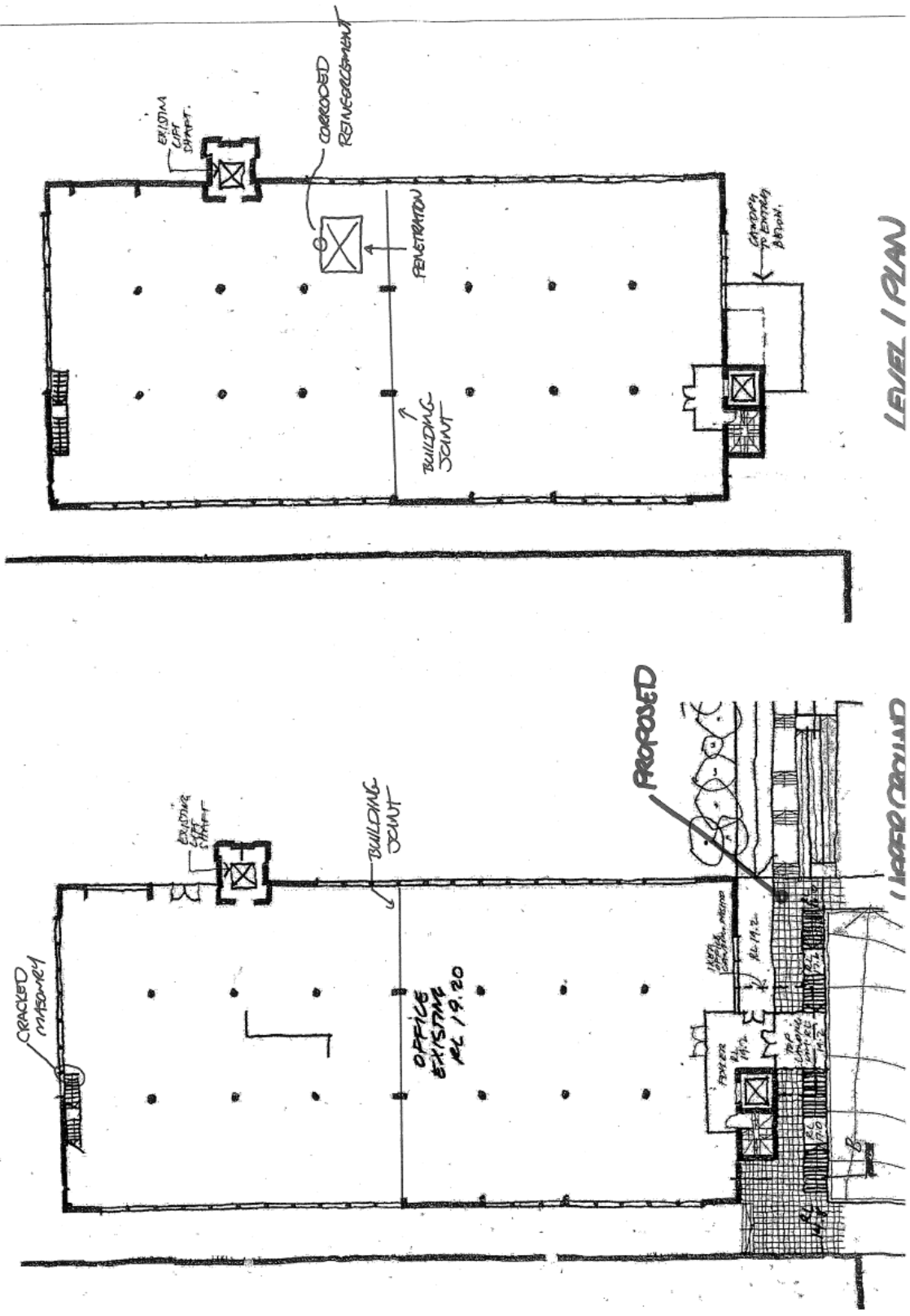
Building Condition Report

Appendix A

Site Notes

Existing Floor Plans




EXISTING LIFT SHAFT
CORRODED REINFORCEMENT
PENETRATION
BUILDING JOINT
LEVEL 1 PLAN
BUILDING JOINT
CRACKED MASONRY
OFFICE EXISTING RL 19.20
PROPOSED

ATECO BUILDING

Building Condition Report

Appendix B

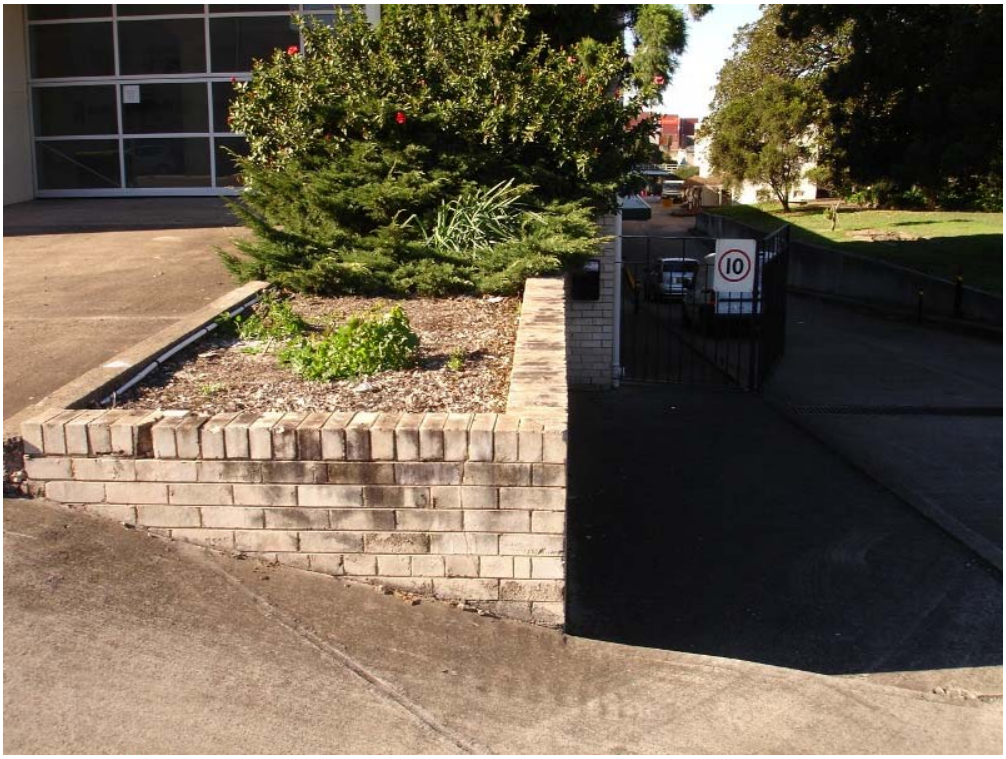
Photographs

Photograph 1. West Elevation

Photograph 2. West Elevation

Photograph 3. West Elevation

Photograph 4. South Elevation



Photograph 5. Planter Box and Pavement

Photograph 6. South Elevation

Photograph 7. South Elevation

Photograph 8. North Elevation

Photograph 9. North Elevation

Photograph 10. Damage to Walkway, North Elevation

Photograph 11. Damage to Walkway, North Elevation

Photograph 12. Drainage Problems, North Elevation

Photograph 13. Entry Road North Elevation

Photograph 14. Settlement of external pavement

Photograph 15. Separation of concrete planter

Photograph 16. Settlement and cracking of external pavement

Photograph 17. Settlement and cracking of external pavement

Photograph 18. Drummy render and cracking masonry at building joint, West Elevation

Photograph 19. Water Staining, Main Entry, West Elevation

Photograph 20. Upper Ground layout

Photograph 21. Upper Ground layout

Photograph 22. Penetration Level 1 soffit

Photograph 23. Corroded Reinforcing Level 1 soffit

Photograph 24. Upper Ground Building Joint

Photograph 25. Upper Ground Building Joint

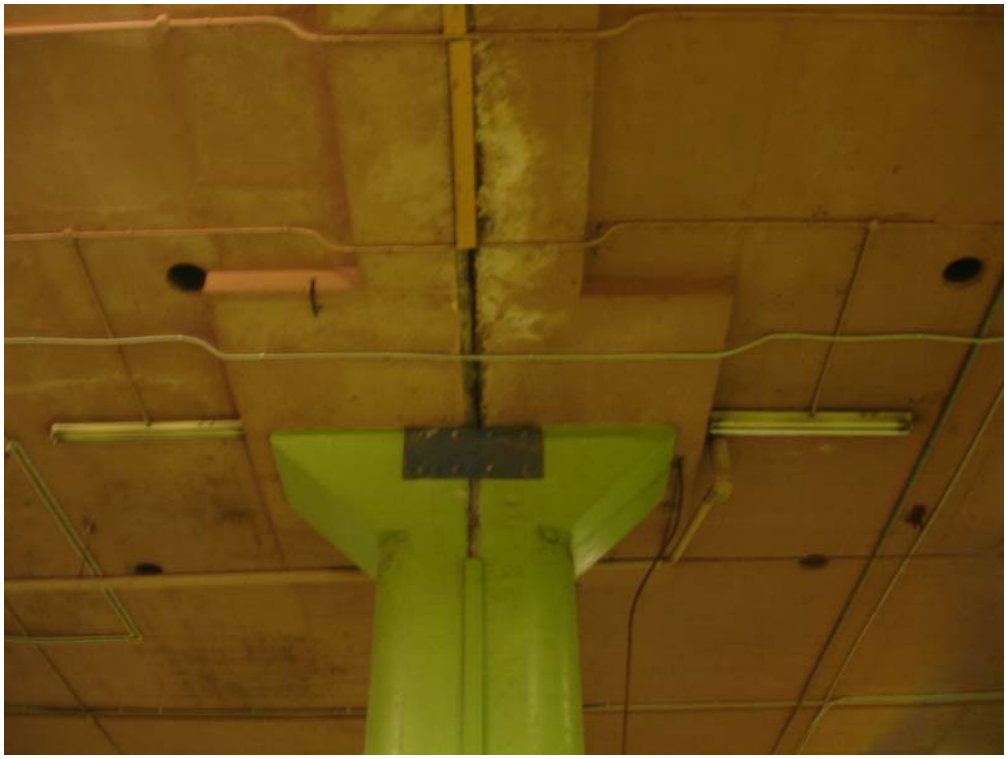
Photograph 26. Upper Ground Building Joint

Photograph 27. Upper Ground Building Joint

Photograph 28. Upper Ground Floor Layout

Photograph 29. Upper Ground Building Joint

Photograph 30. Water Ingress Ground Floor, West Elevation



Photograph 31. Ground Floor Building Joint

Photograph 32. Water Ingress Ground Floor, West Elevation

Photograph 33. Ground Floor

Photograph 34. East Elevation

Photograph 35. East Elevation

Photograph 36. East Elevation

Photograph 37. East Elevation

Photograph 38. Lower Ground Floor

Photograph 39. Roof layout

Photograph 40. Roof layout

Photograph 41. Roof layout, no restraint to truss bottom chord

Photograph 42. Roof details

Photograph 43. Cracking masonry at roof level

Photograph 44. Typical corrosion to truss bearing plate, cracking masonry

Photograph 45. Column built across building joint, previous repairs have occurred

Photograph 46. Column built across building joint, previous repairs have occurred

Photograph 47. Cracking masonry in stairwell

Photograph 48. Corrosion to truss bearing plate, cracking masonry

Photograph 49. Concrete and masonry framing to clock tower