

Walsh Associates 32 Lafone Street London SE1 2LX T: +44 (0)20 7089 6800 london@walshgroup.eu.com www.walshgroup.eu.com

## STRUCTURAL ASSESSMENT

TARA HOUSE, OLDHAM STREET, LIVERPOOL

Rev: 3 Date: 25/05/2015 Project No: 4124 Client: Unite Students Ref: P:\Projects\4124\Documents\Reports\1.Existing Structure RPT\4124-RPT-141216-MO-ks-Rev3.docx

Walsh Associates Ltd, Walsh Goodfellow Ltd, Matthew Consultants Ltd and Walsh Projects Ltd are all members of Walsh Group.
Directors: S.P.Walsh B.E., C.Eng., F.I.E.I., M.I.Struct.E., FI.C.E. I C.P.Bean B.Sc.(Eng.), C.Eng., M.I.Struct.E., M.I.C.E., A.C.G.I. I I.Welsh B.Eng., C.Eng., M.I.Struct.E. I T.Finbow B.Eng., C.Eng., M.I.Struct.E. Eur.Ing. A.P.Stanford C.Eng., B.Eng., FI.C.E., M.a.P.S. I B.Ransom M.Eng., C.Eng., M.I.Struct.E. I P.Modarres M.Eng., C.Eng., M.I.Struct.E., A.C.G.I. I B.Ume B.Sc.
Associate Director: S.Gibbs B.Eng., M.Sc., D.I.C., CEng., M.I.Struct.E. I G.Joyce M.Eng., C.Eng., M.I.Struct.E.

Associates: D.J.Bryant I J.Kantor B.Eng. I N. Revens I M.Barron M.Eng., C.Eng., I E.Li M.Eng., C.Eng., M.I.Struct.E. I A.Piras M.Sc. I M.Orford M.Eng. I K.So - Neil B.Sc., M.Sc., D.I.C. I G. Meakin M.Eng. Consultants: R.G.C.Goodfellow Ph.D., M.Sc., D.I.C., M.Eng. I P. W.Matthew B.E., M.Sc., M.I.E.Aust., C.P.Eng. I S.A.Carson B.Sc., D.M.S., C.Eng., M.C.I.W.E.M. Registered Office: 32 Latore Street, London, SEI 2UX Registered No: 2339267 VAT No: 493 763405



## PROJECT: TARA HOUSE

## **REPORT TITLE: STRUCTURAL ASSESSMENT**

Walsh Associates have prepared this report in accordance with the instruction of our client, Unite Students.

The report is for the sole and specific use of the client, and Walsh Associates shall not be responsible for any use of the report or its contents for any purpose other than that for which it was prepared and provided. Should the Client require to pass copies of the report to other parties for information, then no professional liability or warranty shall be extended to other parties by Walsh Associates in this connection without the explicit agreement thereto by Walsh Associates.

Revision	Date	Notes	Prepared By	Checked By	Approved By
1 2 3	16/12/2014 03/02/2015 25/05/2015	First Issue App. B added Section 5 amended	мк мо мо	MO MO MO	AS AS AS



## Contents

1.0	Introduction	ł
2.0	Brief4	
3.0	Scope4	ł
4.0	Investigation	ŀ
4.1	Existing Structure4	ł
4.2	Walkround Appraisal of Roof Perimeter Structure5	j
4.2.1	External Overview (from ground level)	j
422	Internal Overview (from roof level)	
1 2 2	Roof Overview	
5.0	Conclusion and Recommendations	;
5.1	Roof Perimeter Structure to Roscoe Street	j
5.2	Roof Perimeter Structure to Oldham Street	j
Арре	endix A	
Site	Visit Photos	
Арре	endix B	
Exis	ting Car Park Structure	



25/05/2015

## 1.0 Introduction

A visual walk round structural inspection of the roof perimeter structure on an existing multi storey car park at the Tara House site in Liverpool was undertaken on behalf of our client, Unite Students.

## 2.0 Brief

No written brief was received. We understand our brief is to carry out a visual inspection and to review the existing structure on site with specific regard to the perimeter structure at the top floor, particularly overlooking Roscoe Street.

## 3.0 Scope

It is to be noted that no opening up works were carried out and this appraisal is based purely upon a visual inspection during a time constrained visit. The areas reviewed were limited to the top floor of the car park structure as access was gained immediately from ground level via a stair core. The building was unoccupied and looked as though it had been for a considerable length of time. No archieve information was available.

## 4.0 Investigation

### 4.1 Existing Structure

The site currently occupies a multi-storey car park with 4 levels (basement, lower ground, upper ground and 1<sup>st</sup> floor(roof)). There is a large change in level from west to east of approximately two storeys. Access for vehicles is provided by a central ramp.

The primary reason for visit was to review the roof perimeter structure and access to the roof was obtained directly via a stair core immediately adjacent to the entrance point. However, steel columns could be seen on entry to the building and from outside.

Brickwork and exposed concrete cladding can be seen from street level however due to time constraints this was not inspected to any degree.

Ref: P:\Projects\4124\Documents\Reports\1.Existing Structure RPT\4124-RPT-141216-MO-ks-Rev3.docx



### 4.2 Walkround Appraisal of Roof Perimeter Structure

#### 4.2.1 External Overview (from ground level)

Around the perimeter of the top floor a column and beam arrangement cladded with brickwork can be seen. Particular attention was paid to the Roscoe Street elevation as requested which was clearly in a poor condition. The condition of the structure improved as you moved down the Oldham Street elevation.

It could be seen that the beam was a steel beam encased in concrete and appeared to sit eccentrically on the steel intermediate supports.

The concrete encasement and brickwork was still present to the Oldham Street elevation however fine cracks could be seen in both materials. These cracks can be generally considered as aesthetic but there are serviceability concerns related to the larger cracks within the concrete as there is potential for the concrete encasement to seperate and drop off from the steelwork.

No brickwork cladding to the beam was observed to the Roscoe Street elevation and concrete encasement to the steel beam was missing in more than one location.

#### 4.2.2 Internal Overview (from roof level)

At the top of the columns where they meet the beam it could be seen that in some locations steel beams had been trimmed back, on both elevations.

There were no obvious signs of structural distress to the Oldham Street elevation however cracking that was observed externally could also be seen internally. Closer inspection allowed confirmation that the brickwork cladding on the whole remained intact.

In the central bay of the Roscoe Street elevation it could be seen that a previous structural arrangement had been cut back at the perimeter beam face. Where the concrete encasement has fallen away no rebar could be observed.

Generally the steel columns and base connections were in a relatively good condition.

#### 4.2.3 Roof Overview

The 1<sup>st</sup> floor(roof) had an asphalt finish to it and the structure beneath could not be observed. There were no signs of internal supports, existing or previous, above this level. A brick parapet was present between vertical structure around the building edge.

Ref: P:\Projects\4124\Documents\Reports\1.Existing Structure RPT\4124-RPT-141216-MO-ks-Rev3.docx



### 5.0 Conclusion and Recommendations

Given the fact that the client took full possession and ownership of the combined site on 20.05.15 it may be logistically sensible for the full demolition of the existing structure to be advanced. If this is undesirable then recommendations are given below.

#### 5.1 Roof Perimeter Structure to Roscoe Street

#### Conclusion

The perimeter structure to this elevation has been previously modified, the removal of the lateral retraints to be beam suggests that it will have limited laterally load carrying capacity. It has also deteriorated significantly and now has a very limited residual life. Whilst we would suggest that the risk of collapse in the near future is low to medium, the consequences of such a collapse are clearly serious and for this reason we suggest action is taken.

#### Recommendation

In the knowledge that the building is intended to be completely demolished in the future it is recommended that demolition of this element is advanced. The beam can be removed from the face of the brickwork at both ends. The steel intermediate column supports could be left in place if this is preferred, unless removal of the beam shows a loss of strength.

#### 5.2 Roof Perimeter Structure to Oldham Street

#### Conclusion

This section is in a comparatively better condition with concrete encasement and brick cladding still present. However deterioration is still observed in the form of cracking to both the concrete and brickwork. Also lateral supports to the beam have been removed which suggests that the lateral strength of this element has also been reduced.

#### Recommendation

Due to the better condition of the this element and also because the structure is more extensive than the shorter section on Roscoe Street it is recommended that temporary structure is installed to improve its lateral stability between now and future demolition. It is expected that an arrangement of anchored raking props and strapping would be sufficient.

Ref: P:\Projects\4124\Documents\Reports\1.Existing Structure RPT\4124-RPT-141216-MO-ks-Rev3.docx



4124 - Tara House

# **Appendix A**

## **Site Visit Photos**

Ref: P:\Projects\4124\Documents\Reports\1.Existing Structure RPT\4124-RPT-141216-MO-ks-Rev3.docx



#### Photo 1 – Roscoe Street Elevation



#### Photo 2 – Roscoe Street Elevation



Ref: P:\Projects\4124\Documents\Reports\1.Existing Structure RPT\4124-RPT-141216-MO-ks-Rev3.docx



#### Photo 3 – Oldham Street Elevation



#### Photo 4 – Oldham Street Elevation





4124 - Tara House

## **Appendix B**

## **Existing Car Park Structure**

