

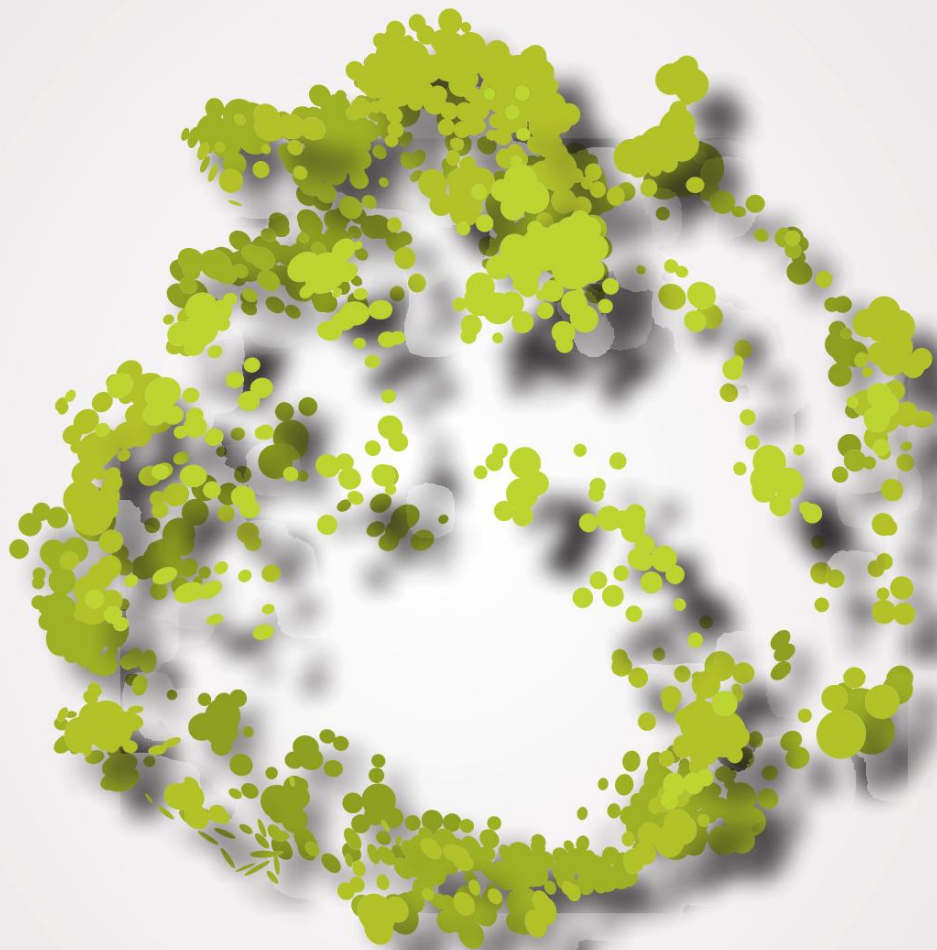
# NXQ

## Lever Street, Manchester

**Structural Statement**

**Revision 01: 17.09.2024**





4891M

# NXQ Lever Street, Manchester Structural Statement for Planning

Sep 2024

Consulting Structural and Civil Engineers

# 4891M | Lever Street

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**1.0 DOCUMENT CONTROL**

| Revision Number | Purpose of Issue | Date of Issue (dd/mm/yyyy) | Prepared by: | Checked by: | Approved by: | Description of Changes / Issue |
|-----------------|------------------|----------------------------|--------------|-------------|--------------|--------------------------------|
| 00              | (DRAFT)          | 17/09/2024                 | JB           | ST          | GD           | N/A                            |
| 01              | PLANNING         | 17/09/2024                 | JB           | ST          | GD           | N/A                            |

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## **2.0 INTRODUCTION & EXECUTIVE SUMMARY**

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The purpose of this document is to communicate the existing condition of the structures on site on behalf of the client, Soller Group as part of the planning application for the new Lever Street development. The development proposal presents a mixed-use scheme that encompasses a full block in the Northern Quarter of Manchester city centre. The scheme consists of a new high-spec office tower and redevelopment of the retained Bem Brasil (Plot 1), with facade retention to Plots 6 and 7.

An appraisal of the existing buildings has been undertaken based on site inspections carried out intermittently since 2017:

- 1) Structural survey - Graham Jones Associates Ltd 9<sup>th</sup> February 2017. Carried out on behalf of Beech Holdings for 56-58 Lever Street properties.
- 2) Structural site visit and visual survey - AKTII 19<sup>th</sup> August 2020. Carried out on behalf of Soller Group.
- 3) Site visit conducted 26/10/2023 by AKTII. Carried out on behalf of Soller Group.
- 4) Site walkover conducted 15/05/2024 - partial collapse of building 7 observed. Refer to Section 3 for further information.

It should be noted that due to severe deterioration of some areas of the site, not all areas have been accessible for inspection over the years. Structural failure and inadequacy have been observed in multiple buildings across multiple floors which render areas unsafe. A significant portion of the defects to the structure are a result of defective waterproofing and it is understood that no remedial works have been undertaken (other than superficial cleaning internally) to the damaged buildings since the survey in 2017.

Existing structures shown in Figures 1 and 2:

- 1) Bem Brasil
- 2) & 3) La Rosa
- 4) & 5) Golden Tandori
- 6), 6a) & 8) Houldsworth St North units
- 7) Little Ancoats St north unit
- 9) & 9a) Little Ancoats St central units
- 10) MOB Burgers
- 11) & 12) Little Ancoats St south unit

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Figure 1 - Key plan of existing buildings

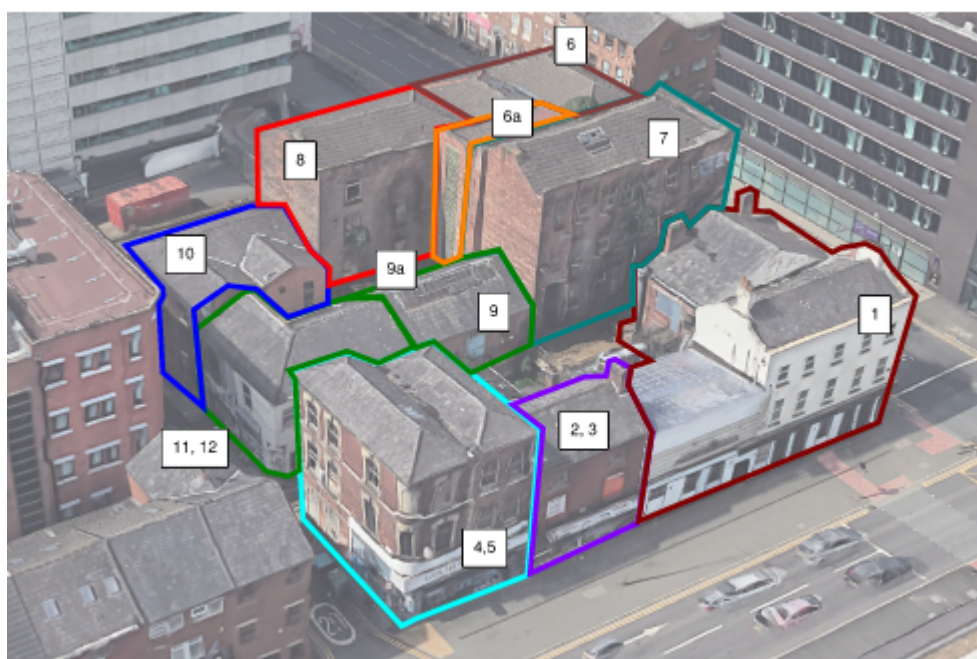


Figure 2 - iso view of existing buildings

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The table below summarises the various condition statuses of each plot and areas requiring further investigation due to restricted access at the time of visit. The condition of each plot is expanded upon in the following sections of this report.

### Lever Street - Existing Site Condition Summary

| Plot #    | Plot name                       | Areas requiring further survey                                                                                  | General condition                                                                                                               | Property risk level |
|-----------|---------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 1         | Bem Brasil                      | Upper floor structures following strip out                                                                      | Generally sound, possible water ingress in upper levels.                                                                        | Moderate Risk       |
| 2 & 3     | La Rosa                         | Upper floor structures following strip out                                                                      | Appears to be in sound condition                                                                                                | Low Risk            |
| 4 & 5     | Golden Tandori                  | Upper floors                                                                                                    | Little lever st elevation significant brickwork defects and signs of leaking at high level                                      | Moderate Risk       |
| 6, 6a & 8 | Houldsworth St north units      | Revisit to upper floors with potential drone survey due to safety concerns. Façade verticality survey required. | Extremely poor condition. Rotten timber bearings, partial collapsed floor structures and loss of restraint ties to façade walls | High Risk           |
| 7         | Little Ancoats St north unit    | Revisit to upper floors with potential drone survey due to safety concerns. Façade verticality survey required. | Extremely poor condition. Rotten timber bearings, partial collapsed floor structures and loss of restraint ties to façade walls | High Risk           |
| 9 & 9a    | Little Ancoats St central units | 1st floor of plot 9                                                                                             | Appears to be in sound condition                                                                                                | Low Risk            |
| 10        | MOB Burgers                     | Upper floors and basement following strip out                                                                   | Appears to be in sound condition                                                                                                | Low Risk            |
| 11 & 12   | Little Ancoats St south unit    | 1st floor                                                                                                       | Minor defects to elevations                                                                                                     | Low Risk            |

|  |               |
|--|---------------|
|  | Low Risk      |
|  | Moderate Risk |
|  | High Risk     |

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## 3.0 PLOT 7 STRUCTURAL COLLAPSE - MAY 2024

The high-risk status of Plots 6, 7 and 8 has been evidenced by a partial collapse of Plot 7 that occurred on 15/05/2024. It is suspected that water ingress to the timber roof structure over several years had caused a primary roof truss bearing to decay and fail, which appears to have resulted in the collapse of a large portion of the roof. The failed truss appears to have pushed the supporting wall, adjacent to little Lever Street, outwards leading to the collapse of the 3<sup>rd</sup> floor façade wall.

The loss of structural integrity of the roof resulted in a lack of restraint to the northwest façade wall of Plot 7 along Lever Street. In addition, the internal structures are exposed to the elements which could likely lead to further decay if left unprotected. The internal floors restrain the façade walls and loss of floor structural integrity could ultimately result in progressive, total collapse of the building. The details of the collapse and associated risks were immediately made clear to the client and local authority.

Subsequent intervention from the client and council occurred in an emergency stabilisation works capacity. A façade retention scheme for the northwest façade of Plot 7 has been installed, this is to prevent collapse into Lever Street and to retain the façade which is a non-designated heritage asset (NDHA) and forms part of the planning submission.

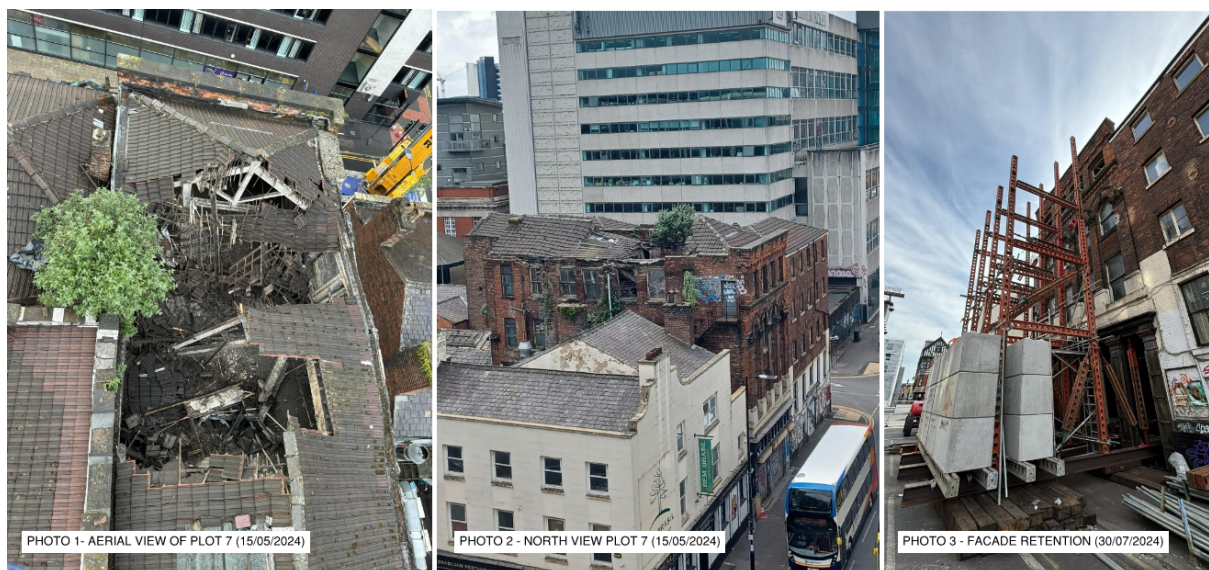


**Figure 3 - PHOTOS OF THE COLLAPSE AND FACADE RETENTION WORKS TO PLOT 7**

The adjacent warehouses, Plots 6 and 8 of Houldsworth St are of similar construction and condition to Plot 7 and are therefore at high-risk of partial or full collapse if left untreated. The risk of further collapse has been stressed to the client and local authority, with the suggestion to install a façade retention system to northwest and southwest facades along Lever St and Houldsworth St. The decision to implement an extended façade retention scheme to these elevations is a decision to be taken by the client in consultation with the local authority. Further information on the existing condition of these high-risk plots is contained in section 4 and 5.

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## 4.0 GJA SURVEY SUMMARY 09/02/2017

GJA Ltd undertook a structural visual survey of the external and internal areas of 56-58 Lever St properties on behalf of Beech Holdings in 2017. 56-58 correspond to building plots 6 and 7 in the introduction of this report. It is understood the buildings were constructed in the mid-late 19<sup>th</sup> century within a few years of each other's completion. Refer to Appendix 2 for the GJA report.



**Figure 4 - Plot 6 and 7 surveyed by GJA**

### 4.1 EXTERNAL INSPECTIONS

- Façade walls show signs of movement. Differential settlement cracks present to façade walls.
- Out of plumb verticality issues and bowing is present.
- Remediation of the bowing with cast iron lateral restraints and pattress plates installed in several locations. Pattress plates have varying forms which suggests these were installed over many years proving ongoing issues with structural movement.
- Cills and arch lintels show signs of settlement (from alterations to the buildings or foundation movement).
- Typical brickwork deterioration present.
- Poor roof drainage system likely leading to water ingress and blockage issues.

### 4.2 INTERNAL INSPECTION

- Masonry perimeter brickwork construction with timber joisted floors supported by timber beams and cast-iron columns. Timber roof trusses with timber purlins for roof construction.
- Some timber columns present.
- Internal condition is poor due to lack of maintenance and structural alterations with inadequate structure.
- Water ingress leading to timber damage and rot to roof and upper floors.
- Some cast-iron tie restraints had lost tension therefore redundant and façade restraint lost.
- Excessive timber floor deflection and presence of rot.
- Vertical structures observed to be out of plumb and visually appear small given the load they are supporting.

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- Introduction of steel transfers to support masonry walls above where openings have been introduced for access between buildings.

### **4.3 CONCLUSIONS**

GJA concluded that detailed intrusive surveys would be required to establish the extent of remedial works required to make the buildings fit for purpose. Upper floors were recommended to be restricted from access which is currently in place at the time of writing. GJA also shared the opinion that the buildings are completely beyond repair and should be demolished, due to the excessive cost and complexities of remediation, in addition to significant temporary works scheme.

GJA deemed the structure “not unsafe” at the time of the inspection (2017) but left unchecked could lead to further deterioration that could compromise the stability of the building.

It is understood that no remedial works have been undertaken since the time of this survey and therefore further deterioration has occurred in the intervening 6 years, as evidenced by the recent collapse of Plot 7 outlined in Section 3. As outlined in the following sections of this report there is anecdotal evidence of further collapse which increases the risk of compromised stability resulting in a potentially unsafe structure.

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## 5.0 EXISTING STRUCTURE APPRAISAL

This section provides a summary of the findings from AKTII structural report (issued on 19/08/2020 on behalf of Soller group) for each plot of the existing site, complimented with observations from a site visit undertaken by AKTII on 26/10/2023.

### 5.1 PLOT 1) BEM BRASIL

3 Storey traditional load bearing masonry construction with timber floors and timber roof. The building is in operation across all floors, basement to second floor. Ground floor level is supported by masonry vaults generally. Appears to have had historical extensions. Roof construction is typical king post truss with purlins supporting battens and slate.

Local brickwork defects were observed with localised cracking and a patters plate at 2<sup>nd</sup> floor. Evidence of water ingress to upper floors was observed in the recent visit possibly due to blocked drains along Great Ancoats street parapet wall.

The fire escape to the rear is unsafe with several failed steps. It is understood that this may affect the current occupier's safe egress from the building. Finishes concealed the upper floor structure and therefore it is recommended that further surveys are instructed post strip out when the structure can be exposed. However, it is assumed that this building is in generally sound condition with localised repairs required.



Figure 5 - Bem Brasil and basement structures

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### 5.2 PLOT 2 AND 3) LA ROSA

La Rosa consists of a 3-storey traditional load bearing masonry structure. Internal structures were concealed by finishes but no visible signs of distress were observed. External brickwork appeared in good condition, and it is assumed that no remedial works are required to this plot. No access was available during either site visit, therefore conclusions are limited to the visible external elevations and further internal surveys will be required to confirm the condition.



Figure 6 - La Rosa

### 5.3 PLOT 4 AND 5) GOLDEN TANDORI

This building consists of a 3-storey traditional load bearing masonry construction. The northern portion appears to be a later addition given the change in brickwork architecture along the façade. This newer addition has cracking and spalling brickwork present.

The elevation along Little Ancoats St shows signs of significant leaking of gutters and downpipes with presence of vegetation and collapsed window lintels. No access to the internal areas of this plot were granted during both site visits therefore the internal condition is unknown. Given the extent of vegetation and leaking gutters there is a risk of water ingress to the roof and upper floors.

Access to the interior should be prioritised to understand the condition of roof trusses and confirm any defects to upper-level floor structures.

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Figure 7 - Golden Tandori facades

### 5.4 PLOT 6, 6A AND 8) HOULDSWORTH ST NORTH UNITS

These plots were surveyed by GJA Engineers and captured in Section 4 of this report. The buildings are typically 5 stories with load bearing masonry facades, timber floors with primary timber beams and cast-iron columns. Some timber columns have also been observed. Timber king post truss roof with timber purlins form the roof construction.

In the recent 2023 survey, access was granted to the ground floor spaces only, stairs to the upper floors were safe but no access to the floor plate was gained by AKT due to locked doors as a result of the unsafe structure. There are serious signs of degradation throughout the visible parts of the building with substantial water ingress stemming from holes in the roof being left open.

During the inspection carried out in 2020, full access to the internal spaces was achieved. Superficial cleaning had been carried out since the original survey in 2017 which had exposed more of the internal structure for inspection. Several props were present supporting failed primary beams which are still currently present suggesting this interim measure has been left insitu. Varying eras of structural alteration were observed with cast iron, mild steel and tublar steel propping.

Area 6a is later infill between the existing walls of area 6, 7 and 8 which consists of a new external wall with full height glazing and floor joists spanning between 6 and 7.

Significant damage due to water ingress is present to all floors with staining, collapsed ceilings and floor structures. Cast-iron tie restraints are fixed back to primary timber beams on the upper floors. These were found to be defective in some areas with loss of tension due to rotten timber beams allowing slip of the ties. This is a key risk as the façade has lost restraint and is susceptible to further bowing. Roof truss have compromised bearings due to rot and are supported on columns or temporary props where bearings have failed.

Visual survey of the external elevations both in 2020 and 2023 have seen severe defects to the brickwork with spalling bricks, cracking to the masonry and vegetation growing on the Little Ancoats St elevation.

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These buildings present the biggest risk to health and safety given their significant structural defects. Refer to Section 6 for further details on recommended next steps to address this risk.

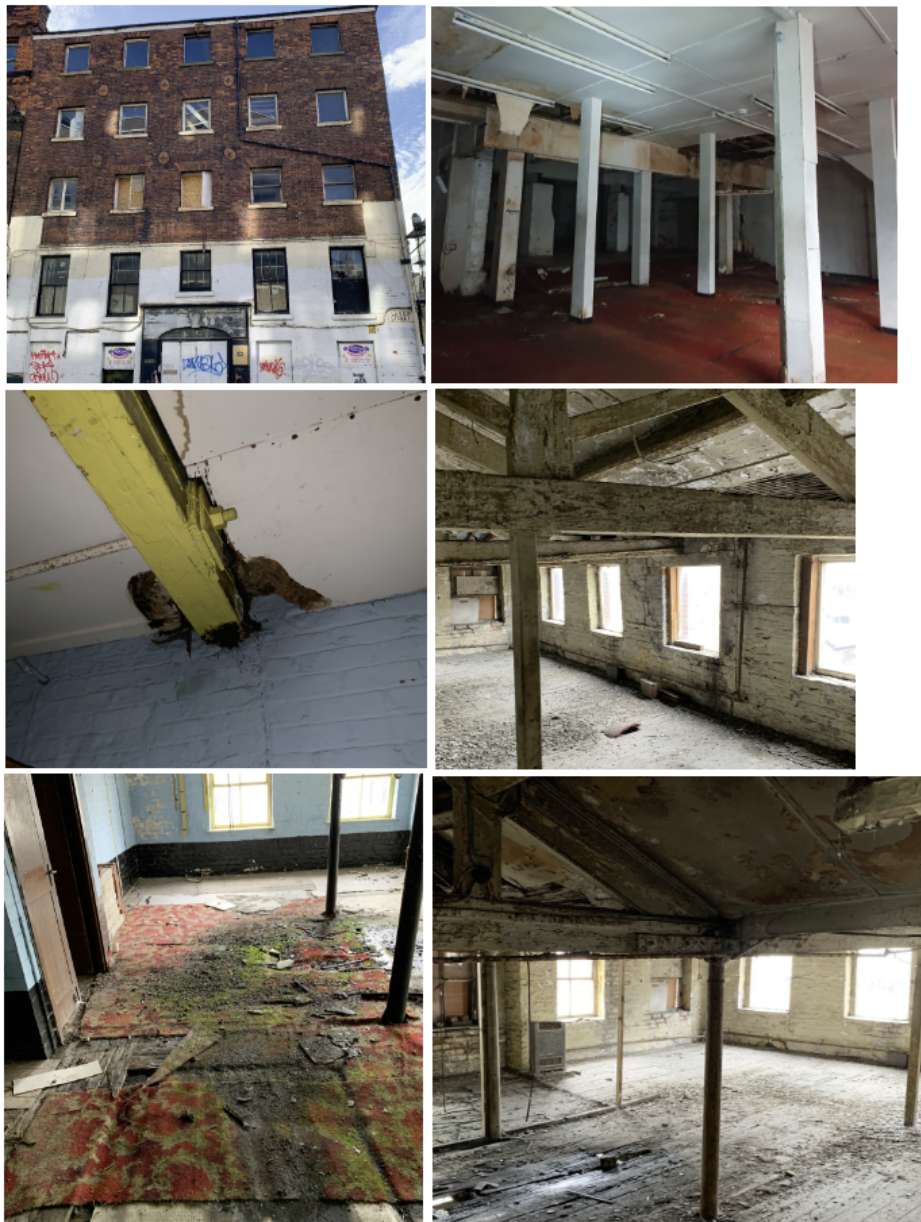


Figure 8 - Plot 6 defects

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### **5.5 PLOT 7) LITTLE ANCOATS ST NORTH UNITS**

This plot was subject to a partial collapse of the roof and upper façade wall as outlined in Section 3. The internal structures remain in extremely poor condition as described below and are currently exposed and unprotected since the collapse, accelerated degradation is expected.

Plot 7 consists of a 4-storey building above ground floor with a single storey basement. Traditional load bearing masonry perimeter walls with a single line of cast iron columns support timber joisted floors. The ground floor is supported by a series of masonry jack-arches supported on iron beams and cast-iron columns. No access to the internal areas was gained during the recent 2023 survey but full access was granted during the 2020 survey.

3 central cast-iron columns were present at ground floor, the iron frame was painted, and no corrosion was observed. In the upper floors the 3 iron columns supported primary timber beams spanning parallel to the facade with timber floor joists spanning perpendicular. Rotten bearings were observed to some of the primary beams with replacements present.

Roof finishes are compromised allowing water ingress. This has resulted in rot to the roof trusses which have significant deflections and failed bearings. Typical external brickwork defects are present as elsewhere on the site with spalling brickwork, cracking to the masonry, vegetation growth and rebated joints.

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**Figure 9 - Plot 7 defects**

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### **5.6 PLOT 9 AND 9A) LITTLE ANCOATS ST CENTRAL UNITS**

One and two storey infill buildings are present here with a mono pitched timber roof spanning from areas 8 to 9 that infills the courtyard area. 1<sup>st</sup> floor structure in area 9 consists of steel beams and precast concrete planks pointing to this structure being a later addition.

It is assumed that no remedial works are required to these units, however access to 1<sup>st</sup> floor should be gained in order to confirm the condition and extent of any latent defects.

### **5.7 PLOT 10) MOB BURGERS**

Plot 10 is a 3-storey building above ground floor consisting of traditional load bearing masonry construction. Access to the ground floor of this unit was the only accessible area. The external and internal condition appeared in sound condition with no remedial works required.

It should be noted that there is a partial basement below this unit that was not accessed during the site visits. This basement should be surveyed during the next available opportunity to confirm condition.

### **5.8 PLOT 11 AND 12) LITTLE ANCOATS ST SOUTH UNITS**

Plot 11 and 12 is a two-storey building above ground floor with traditional load bearing masonry construction. No internal access was granted on either site visit.

External elevations show minor defects including spalling of cement render/brickwork and rebated mortar joints. It is assumed that only localised brickwork repairs are necessary. Further surveys are required to confirm the internal condition.

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## 6.0 NEXT STEPS AND RECOMMENDATIONS

Additional surveys are required to gain a comprehensive understanding of the structural integrity of each building. However, the inspections carried out to date clearly highlight structures that are in a severe state of disrepair with others requiring very localised or no remedial works. The defective structures have been left untreated for several years following the inspections, which has left them subject to further deterioration and an increased risk of collapse.

As captured in the summary table in Section 2, areas of low to moderate risk should be surveyed in person following strip out of finishes to expose concealed floor structures. However, plots 6-8 are at high risk of instability or structural collapse/local failure and it is strongly recommended (as current measures) that access is prohibited. Therefore, a detailed visual survey can be carried out utilising a drone survey or similar.

In addition to the internal surveys, it is suggested that a verticality survey is carried out to the elevations of plots 6-8 to understand the extent of out of plumb geometry of the masonry façade walls.

The surveys to plots 6-8 should be prioritised and carried out at the earliest opportunity to inform any potential temporary propping requirements to ensure the structural integrity of the buildings. A key risk is any loss of diaphragm action due to excessive deflection and rot of upper floor joists, and loss of restraint to façade walls due to defective cast-iron tension rods. A remediation strategy to ensure façade wall restraint is to be developed in the interim as surveys are instructed.

Further considerations and potential next steps regarding unsafe structures (specific to plots 6 to 8):

- Access to be arranged to upper floors and basement spaces following opening up of locked doorways. This will provide an up-to-date visual survey of the worst condition areas following a previous visit in 2020 in which further deterioration may have occurred.
- If safe access to upper floors cannot be guaranteed, then a drone survey can be arranged to access areas not visible from the stair core.
- Alternative access could be made from a MEWP from the pavement/street elevations. Potential implications on traffic management to be considered on Lever Street.
- Verticality survey of external elevations and noting positions of patters plates should be carried out to understand existing out-of-plumb geometry of wall and risk of instability.

With foresight of the main works development on the Lever St site a reasonable assumption at earliest commencement on site is 2024 Q4 - 2025 Q1. Therefore, there is a significant period remaining for further deterioration if the buildings are left untreated in the interim. Water ingress through the roof will accelerate structural defects through the floors. As such it is recommended that consideration is given to a temporary façade retention scheme from the street side with full or partial demolition of plots 6-8 to prevent collapse of the existing fabric, including heritage assets the project team would like to keep. It should be noted that this way forward assumes all approvals from statutory authorities are obtained prior to commencing work.

Alternatively, an internal temporary propping strategy and water-tightness remediation scheme could be considered as an interim measure prior to the main works commencing. However, given the proposals of the main scheme, that include demolition of the building structures with façade retention, and hiring costs of temporary works throughout the interim duration, this

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option may not be feasible or practicable. There is also a risk that façade retention measures will still be required externally given the unknowns with the internal structures and feasibility of reinstating façade restraints.