

Report No:	Date:
DW2291	25th April 2022
Project:	
Pall Mall King Street, Manchester Structural Report for Planning	
Client:	
bruntwood works	

This report is provided for the benefit only of the party to whom it is addressed. DW Consulting Engineers do not extend responsibility to any third party for the whole or any part of the contents. DW Consulting Engineers owe no duty of care in relation to this report to any third party.

© DW Consulting Engineers LLP

Report prepared by: Chris Corrigan CEng MStructE

Signature:



Report status: **Issue 2 – 6th May 2022**

Approved for issue: Alan Wells BSc(Hons) CEng MICE MStructE

Signature:

Date: 25th April 2022

DW Consulting Engineers LLP
Marsland House
Marsland Road
Sale
Cheshire
M33 3EQ

INDEX

- 1.0 Introduction**
- 2.0 Description of the Property**
- 3.0 Building Construction**
- 4.0 Proposed Structural Works**
- 5.0 Conclusions**

1.0 Introduction

- 1.1 We received instructions from Mr Adam Tillis on behalf of bruntwood works to prepare a structural report for Pall Mall, King Street, Manchester. The report is required as part of the Planning application for works on the listed building.



Aerial view of the site

2.0 Description of the Property

- 2.1 Pall Mall is formed with distinct areas, as seen in the aerial photo above. The building to King Street has 6 storeys (including lower ground floor), the building to Marsden Street has 5 full storeys with a small accommodation area at roof level and the main tower has office accommodation on 11 floor levels with basements and sub-basements.
- 2.2 Externally a large courtyard at ground floor level provides the roof to a basement car park, accessed off Marsden Street.
- 2.3 The courtyard also has a substantial planter, sitting above the car park entrance, containing bushes and shrubs and a number of very large trees.
- 2.4 The building is a Grade 2 Listed property, listing no 1246934, first listed 4th December 2000.
- 2.5 The listing describes - *Commercial office building, 1966-8 by Harry Tegg in association with A H Brotherton and Partners, and the engineers, Cyril Blumfield and Partners. Reinforced concrete frame with grey-bronze ceramic-mosaic cladding to the service towers, and Staffordshire blue-brickwork and bronze painted-aluminium cladding to the rest of the building with bronze glass. Flat roofs with parapets. 6-storeys and 12-storeys.*

Pall Mall Court is listed at Grade II for the following principal reasons:

** Architectural interest: it is a good example of a high-quality post-war office building with a striking design that is resolutely of its time, but which respects, and responds well to, its site and Victorian streetscape*

** Design interest: it's unusual Z-shaped plan and stepped elevations form a strong massing and composition, with rows of oriel-style windows creating a rhythmic pattern and movement across the principal facades. This strong level of stylistic detailing is enhanced by the building's use of bronze painted-aluminium and glass, and grey-bronze mosaic cladding, which create a dramatic contrast to the other buildings on King Street.*

Tegg conceived the building 'to have the impact of a jet stone by the use of bronze glass, sharp angles and opaque facets', although the cleaning of the surrounding stone buildings has subsequently tempered its illusional effect. Pall Mall Court won a Civic Trust Award and the RIBA Regional Award in 1970.

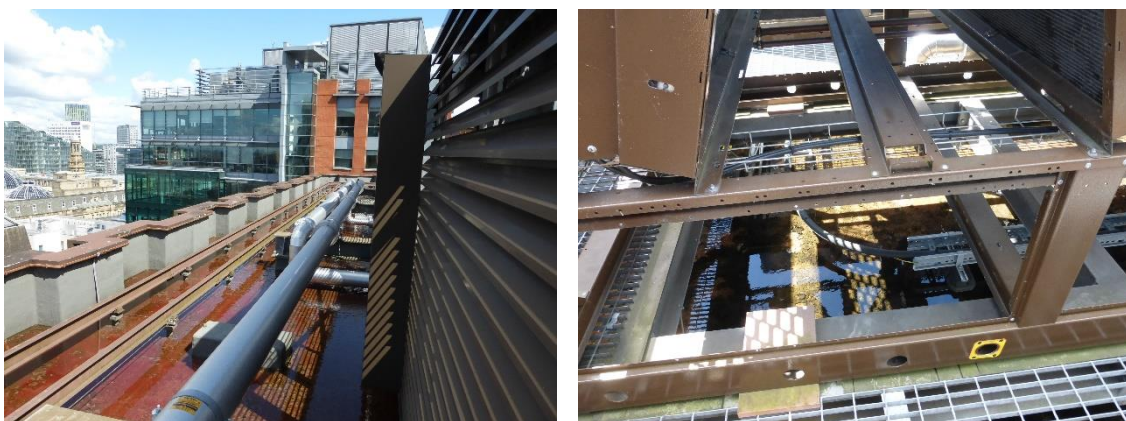
3.0 Building Construction

- 3.1 The building is constructed with a substantial cast in-situ reinforced concrete frame. Stability to the buildings is provided by concrete shear walls to the elevations and stair and lift cores, together with the inherent stiffness of a substantial concrete frame.
- 3.2 The floors are cast in-situ concrete ribbed floors spanning between beam strips on the column lines; the main tower columns themselves are inset from the façade by approx. 1.8m. The slab between the columns and the glazed façades is formed with a solid concrete cantilevered slab with a sloping soffit. The typical floor to floor height was measured at 3200mm with a clear floor to underside of floor beam / rib measured as 2720mm.



Typical ribbed slab with sloping soffit to cantilever section

- 3.3 The slabs and columns that were visible were all generally in good condition with no indication of any structural cracking, movement or defects.
- 3.4 The main tower roof has a heavy gantry frame to support plant, with stubs down to the column lines below. The plant is screened with a louvred enclosure. We noted that all of the steel to the gantry and its flooring are galvanised, and we found no visible corrosion.



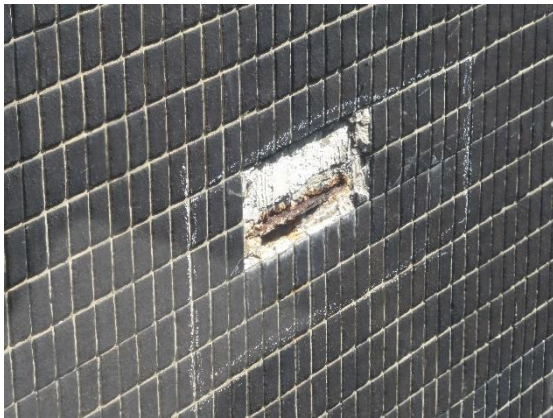
Louvred plant enclosure on main tower roof

- 3.5 The main tower has a basement and sub-basements that are generally vacant space except the large double height plantroom at sub-basement level.
- 3.6 The basement car park is located beneath the external courtyard and is on 2 main levels; vehicle access is via a roller shutter door off Marsden Street. The structure is generally in similar to the main buildings with a cast in-situ concrete slab supported on concrete columns.
- 3.7 The courtyard is finished with pre-cast concrete pavings.
- 3.8 Above the car park entrance the large planter contains huge trees and several bushes.

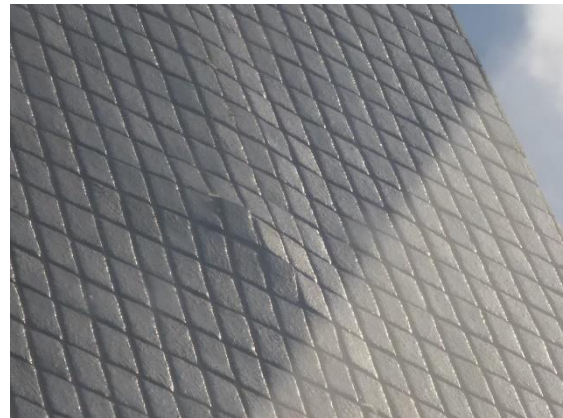


Planter above car park entrance and main courtyard area.

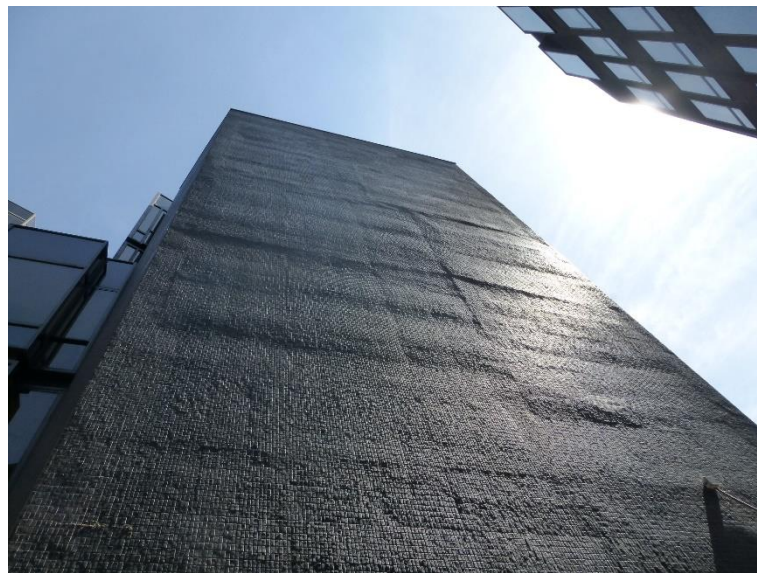
- 3.9 The building façades are finished in small tiles fixed to the concrete frame. We found numerous locations where the tiles have had previous repairs and where new areas are bulging out or tiles have fallen away, indicating loss of adhesion and possible re-bar corrosion behind.



Exposed re-bar in one location



Tiles bulging out



'Wave' appearance to King Street block

- 3.10 Hammer testing is being carried out to the façade areas to determine the full extent of the defective tile areas, and to allow a repair procedure to be specified.

4.0 Proposed Structural Works

4.1 The proposed works are split into the following:

- A vertical extension above the Marsden Street block comprising office accommodation at 5th floor level and a raised Plant floor at 6th. These works will require demolition of the former caretaker's apartment.
- A vertical extension above the King Street block to provide a small bar area and terrace together with concealed plant space.
- New main entrance to be formed off the courtyard.
- Redesign of the toilet core areas and new risers.
- Construction of a new / enlarged Sub-Station room off Marsden Street, beneath the raised planter.

4.2 The required structural works for each section of works will include:-

4.2.1 Vertical Extension on Marsden Street Block

- Existing structure fully retained.
- New structure for the office and plant areas constructed off the top floor of the existing concrete frame.

4.2.2 Vertical Extension on King Street Block

- Existing structure fully retained.
- New structure for the bar, terrace and plant areas are to be constructed off the top floor of the existing concrete frame.

4.2.3 New Main Entrance off Courtyard

- Section of existing floor at Ground Floor and Lower Ground Floor levels is to be removed to allow vertical circulation from basement up to Ground Floor levels in an atrium type space.
- Existing structure to be trimmed utilising a steel frame on piled foundations to allow the sections of existing floor to be removed.

4.2.4 Redesign of Toilet Core Areas and new risers

- Toilet redesign requires part removal of one of the internal concrete walls to make the toilet areas more accessible .
- New risers do not require any floor removal. The proposal is to partially remove the separating wall between the existing riser and flue shaft towards the Marden Street end of the building.

4.2.5 New Sub-Station off Marsden Street

- Section of the planter to be removed and modified to allow level access off Marsden Street into a new Sub-Station.
- New concrete floor at street level is to be installed and the 'base' of the planter above the sub-station is to be raised locally above the Sub-Station to give the required headroom.
- The brickwork to the planter wall to Marsden Street will be retained above the new sub-station area.



Planter elevation off Marsden Street

All of the above works are as shown on the architects' drawings.

5.0 Conclusions

- 5.1 The main building frame is a very robust cast in-situ concrete frame and floors which was found to be in good condition with only a handful of minor defects, all of which would be rectified with normal maintenance.
- 5.2 The floors at all levels are cast in-situ concrete ribbed slabs, generally with reasonable soffit finish.
- 5.3 The proposed structural works are relatively small compared to the overall structure and can be carried out without and detriment to the integrity of the building.