



**Gledsdale Associates**  
Consulting Structural Engineers

40A Dartford Road  
Sevenoaks  
Kent TN13 3TQ

Tel: (01732) 456531

**Structural Appraisal  
Report on  
Proposed Planning Submission  
for  
Holmes Road Depot  
Holmes Road, Kentish Town  
London  
NW5 3AP**

## **INTRODUCTION**

Gledsdale Associates were appointed by Pelling LLP as part of their consultancy team to provide structural engineering services for the proposed refurbishment.

## **COMMENTARY ON THE PROPOSALS**

### **General**

Holmes Road Depot is understood to be a 1970s concrete framed building with elevations treated in exposed aggregate pre-cast concrete panels, exposed concrete columns and upper floor slab edges and aluminium framed glazing. Many of the elevations are of brickwork infill panels to the concrete frame, particularly on the courtyard sides and to the residential flats.

Residential flats are located above the first floor offices along the Holmes Road elevation, and there is also a larger residential block at 76 Holmes Road at the east end of the building which extends over some of the depot ground storey.

The building is predominantly two storeys, excluding the flats, although various mezzanine structures have been provided more particularly within the former single storey workshop section to the east, and to part of the Spring Place wing.

To the North side of the site there is a garage block with open side to the courtyard. This is constructed of a metal deck roof supported on Metsec type trusses which in turn are supported on steel columns.

The central courtyard is for vehicle access and parking and is finished with tarmac surfacing.

### **Condition of Existing Structures**

An inspection of the existing structures has been carried out which did not reveal any major structural or movement problems.

Some areas of cracking to blockwork are probably due to thermal movement or shrinkage. These cracks are not progressive and can be repaired as part of the normal maintenance cycle if required.

Some areas of rust staining and slight spalling of the exposed external concrete faces have been noted and it is proposed to carry out localised repairs as part of the proposed refurbishment. Similar further carbonation testing is proposed to establish any additional protective treatment that may be required to the exposed concrete areas.

## **Proposed alterations**

An assessment has been made with regard to allowable loadings on the existing concrete framed structure as follows:

### **Ground Floors**

Most of the ground floor areas are given over to workshops or stores. It is likely that they were designed for such use when the building was originally designed in 1970's. As such the floors are likely to have been designed for a live load of at least  $7.5 \text{ kN/m}^2$  or possibly  $10 \text{ kN/m}^2$ .

### **Upper Floors**

Most of the upper floors are in use as offices and again the design is likely to have been based on this use. It is possible in the 1970's that the office loading was taken to be as much as  $4 \text{ kN/m}^2$ . The minimum that would have been assumed for open office design would have been  $2.5 \text{ kN/m}^2$  plus  $1.0 \text{ kN/m}^2$  allowance for partitions.

### **Roof Areas**

The roofs may have been designed as access for maintenance only in which case the live load design would have been  $0.75 \text{ kN/m}^2$ . Some areas may have been design for roof plant, but it will be difficult to identify where these areas may have been.

### **Summary of allowable loadings for future use:**

#### **Ground Floor:**

Live Load:  $7.5 \text{ kN/m}^2$

#### **Upper Floors:**

Live Load  $2.5 \text{ kN/m}^2$

Partitions  $1.0 \text{ kN/m}^2$

Total	$3.5 \text{ kN/m}^2$
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#### **Roof:**

Live Load:  $0.75 \text{ kN/m}^2$

The proposed uses following the refurbishment will be such that they generally fall within the existing allowed floor load criteria

### Use of roof to North block for siting of pv units:

Based on the initial information on the weight of the pv units and the allowable loading for the type of trusses, it would appear that, from the back analysis check carried out, the existing steel frame is capable of supporting the additional loads from the pv's. **It was not possible** to establish the exact type of the existing metal deck; however, by comparing decking currently available, it would appear that the existing decking should be capable of supporting the pv's without the need for additional strengthening.

### New Entrance Area

The new entrance and lift area can be achieved by cutting away a section of the ground floor and recasting the entrance and lift support floor at the lower level. This lower level floor can be supported from the existing columns and foundations as necessary.

The new stair opening will involve cutting away part of the first floor slab. This opening will need to be trimmed with new steel beams which can be fixed at the underside of the slab and supported back to the main columns or beam strips within the slab.

The external cladding in this area is pre-cast panels. It should be possible to remove one or two of the panels as necessary and re-clad the new opening and surround.

### New Structural Openings

Where the proposals require new structural openings in infill walls and partitions these will be dealt with locally with additional trimmers or lintels being installed.

### New Plant

Where existing plant areas are being used to house new equipment checks of the new equipment weights are being made to ensure they fall within existing allowable loads.

Where additional equipment is required local checks will be carried out and additional trimming members added, if required, to support the new plant.



I. D. Gledsdale B Eng, C Eng, M I Struct E