



Your ref:

Our ref: 1822871-N102-ECV-LET-0006-1

James Hinks

Associate

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Transport for London
Infrastructure Protection

7th Floor Zone B5
5 Endeavour Square
Stratford E20 1JN

Sent by email

www.tfl.gov.uk/tube

4th July 2022

Dear James,

Re: The Network Building – Proposed Development – LUL Impact Assessment

I refer to your email dated 30th June 2022 regarding the technical submission 'Northern Line Tunnel Impact Assessment Rev C – June 2022' which analyses potential impact on the LUL operational Northern Line tunnels and the 'Home Office Tunnels' (Deep Level Shelter).

Existing Site and Proposed Works

The proposed scheme comprises the demolition of an existing six storey building followed by the construction of a nine storey building plus single storey basement.

The site is located between Goodge Street and Warren Street Stations which are served by the LUL Northern Line tunnels which run below Tottenham Court Road.

The Northern Line runs to the east of the site at a depth of approximately 24.0mbgl and a lateral distance of approximately 6.9m from the proposed construction activities.

The Home Office Tunnels are deeper at approximately 31.0mbgl and a lateral distance of 1.30m.

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authority is Transport for London.

Both the LUL Northern Line tunnels and Home Office Tunnels have been assessed using Pdisp Version 20.0 employing the Boussinesq method for determining changes in stress and strain when subjected to vertical load change.

On this basis four elements have been considered within the modelling of the Northern Line tunnels:

- i) Change in stress at tunnel crown level
- ii) Potential settlement at crown level
- iii) Potential settlement beneath tunnel
- iv) Change in curvature of the longitudinal axis of the tunnel

Assessment Findings

Northern Line tunnels

Change in stress at tunnel crown level is less than +10 kN/m²

Maximum Settlement – WB (closest tunnel) 1.6mm, EB less than 1.0mm

Minimum Radius of Curvature – 165km

Home Office Tunnels

Maximum settlement – 0.6mm

Comments & observations:-

I am pleased to confirm that the predicted values within the assessment are considered to be within a range that would be acceptable to Transport for London Infrastructure Protection (TfL IP) and therefore I have no further comments or concerns with the works progressing as designed subject to the following conditions:-

- 1) Ongoing communication with TfL IP shall be required during the works and regular programme updates shall be provided by the project.
- 2) Although impact is considered to be relatively small and it is very unlikely damage to the operational railway will occur due to these works, your Client may wish to consider completing both a pre- and post-construction schedule of condition survey of the zone of influence of the Northern Line tunnels.

Yours sincerely

A handwritten signature in black ink, appearing to read 'M Howard', written in a cursive style.

Malcolm Howard

Principal Engineering Leader Outside Parties

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Copy to: Project File