



Your ref:
Our ref: 1822323-C116-ECV-LET-0013-1

Gennaro Alfano
Michael Barclay LLP

Transport for London
Infrastructure Protection

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

Sent by email

www.tfl.gov.uk/tube

9 June 2021

Dear Gennaro,

Re: 294-295 High Holborn - Ground Movement Assessment Report

I refer to your email dated 8th June 2021 regarding CGL09162A_HighHolborn_GMR_Rev3_June21 Ground Movement Assessment report revision 3 produced by Card Geotechnics Limited.

Existing Site and Proposed Works

The existing site is vacant of any structure due to previous demolition works being completed approximately 10 years ago. Previously, it had a basement level, which still remains open in the northernmost third of the site and has been historically backfilled in the remainder.

The proposed development entails the construction of a 10-storey building with a basement which will occupy the whole footprint of the outlined building.

The London Underground operational railway (Central Line tunnels) located between Holborn and Chancery Lane stations run below High Holborn to the north of the site at a depth of approximately 20-25m below the carriageway.

The closest Central Line tunnel is approximately 8.3m from the development footprint.

London Underground Limited
trading as London Underground
whose registered office is
5 Endeavour Square
London E20 1JN

Registered in England and Wales
Company number 1900907

VAT number 238 7244 46

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authority within the meaning of
Part V Local Government and
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authority is Transport for London.

MAYOR OF LONDON



The report considers ground movements associated with the following stages of the project:

- Stage 1 – Short term: Stress decrease during excavation
- Stage 2 – Short term (construction phase): Stresses increased due to self-weight of basement slab
- Stage 3 - Long term: The loads of the proposed building are applied on the bearing piles and carried down to the base of the piles

Assessment Findings

LU Tunnels Assessment – Oasys Pdisp Analysis

Short Term Ground Movements

Central Line tunnels along High Holborn are estimated to sustain less than 1mm of heave both before and after the installation of the ground slab.

Long Term Ground Movements

Central Line tunnels have been assessed to be outside the 1mm (heave) contour and therefore in the long term they are expected to sustain less than 1mm of heave from the proposed works.

Radius of Curvature

Given the very small amount of movement both in the short term and the long term conditions, in all construction stages for which the assets have been assessed, it is considered that the curvature of the tunnels due to ground movements will be within acceptable limits.

Concluding Statement

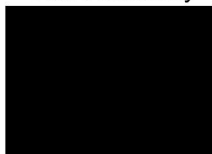
The results of the analysis for short and long term conditions, indicate that the ground movements at the location of the Central Line tunnels due to excavation and construction are less than 1mm and it is therefore considered that the impact of the works on the tunnels is negligible.

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) Although impact is considered to be very small and it is very unlikely damage to the operational railway will occur due to the works, you may wish to consider completing both a pre- and post-construction schedule of condition survey of the zone of influence of the Central Line tunnels. This is not mandatory however your Client may take the view that this would be worthwhile as part of their own assurance process.
- 2) Ongoing communication with TfL shall be required during the works and regular programme updates shall be provided by the project.
- 3) Submission of Design, Method Statements and Safe Systems of Work for any / all construction activities that may pose a risk to the operational railway including (but not limited to) earthworks, temporary works, foundations and construction of structure.
- 4) TfL IP may wish to monitor the works activities and safe systems of work for any / all construction activities as detailed in accepted Method Statements (condition 3 above).

Yours sincerely



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Copy to: Project File

WJC (09/06/2021)