CGL_09529 – Tottenham Mews: LBC Comment Tracker

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1	10/02/2021	Stability	The desktop study information and the Geotechnical Investigation Report are missing and are requested – audit Sections 4.8, 4.9. ***4.8** - The full desk study information was not available at the time of this audit and are requested to confirm assumptions* ***4.9** - According to the Geotechnical BIA, all the site specific and nearby geotechnical information has been presented and assessed in a Geotechnical Interpretative Report which was not available at the time of this audit and is requested in order to confirm assumptions made*	Links to the relevant CGL reports and freely available party wall SI reports are below and have been provided alongside this comment tracker for CR review. Reports: • LBC_Bedford Passage_Middlesex Hosp_SI • LBC_Arthur Stanley House_SI All the site specific and nearby geotechnical information has been presented and assessed in a Geotechnical Interpretative Report which is presented in CGL's GGIR, and is now provided as supporting documentation: • CGL09529_14-19TottenhamMews_GGIR_Sept2020		Open
2	10/02/2021	Stability	The construction sequence drawings referenced in the SER are missing and shall be submitted - audit Section 4.6. ***4.6** - However, the construction sequence drawings were missing from the submitted SER and are requested*	Elliott Wood have provided a detailed construction sequence. This is to be included in the relevant 'Proposed Development Drawings' revised BIA report Appendix.		Open
3	10/02/2021	Stability	A statement shall be provided about the adopted construction methodology similar to that applied in the case study referenced, in order to control ground movements, in accordance with the GMA – audit Section 4.15. ***4.15** - horizontal and vertical ground movements due to the installation of the proposed contiguous piled wall have been assumed to be equal to 0.02% of wall length, based on a case study paper presented by Ball et al. (2014), which are lower than those suggested by CIRIA C760 curves (0.04% of wall length).*	It is noted that CIRIA C760 is based on limited case study data, and therefore has selected a very conservative upper bound estimate of movements. Reviewing the actual case study data reported in CIRIA – Secant Piled Wall movements and Vintners hall were caused by 'poor drilling techniques'; Blackfriars 1 was a 1.2m diameter secant piled wall next to a very heavily loaded building. The MSc thesis upon which CIRIA C760 is based, makes the comment that 8mm is "a reasonable value which could be expected as an upper limit settlement for most wall installations". The document also notes "there does not appear to be a relationship between the type of wall construction and the measured surface settlements". Where large movements		Open

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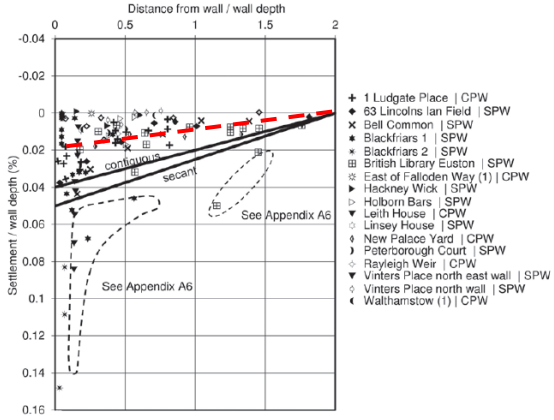
				behind the wall are noted, it is stated that these are due to adverse ground conditions, poor drilling techniques, and/or effects from adjacent footings. This site has 'standard' ground conditions with the London Clay present at the relatively shallow depth; therefore provided construction is appropriately controlled and monitored, significant displacements are not anticipated. It is further noted that CGL has another case study, pending publication – also demonstrating installation movements in line with the majority of CIRIA C760/580 case study data:  b Vertical movements *Figure 6.8 Ground surface movements due to bored pile installation in stiff clay (normalised)*		
			***4.15** - it is requested that a statement is included in the Geotechnical BIA that a construction methodology similar to that applied in the case study ('hit one miss three' pile installation and full casing of piles) will be applied in the subject site too, in order to control ground movements), in accordance with the GMA*	By necessity a contiguous piled wall is constructed in a hit and miss fashion. This is so that the wet concrete in recently constructed nearby piles is not damaged during the construction process. This process is set out in the ICE Specification for piling and embedded retaining walls (SPERWall) document, which will form the basis of the piling method for		

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				this development**.** Movements will be monitored during pile installation such that additional control measures can be adopted if required.		
4	10/02/2021	Stability	The GMA and building damage assessment shall be reviewed in accordance with the comments provided in Section 4 of this audit – audit Section ***4.16a*** *For No. 13 Tottenham Mews contradictory references are noted with regard to the maximum anticipated settlement below footing foundation; Section 9.2 states 6mm, Plate 5 indicates 7mm, Section 8.8.2.2 reports 9.8mm.* ***4.16b*** *Calculation of the critical deflection values shown on Plates 5, 8, 10, 12 does not consider the full length (L) of the wall elements evaluated. However, the damage calculation considers the full length of those walls and this inconsistency shall be justified.* ***4.16c*** *The Wallap analysis assumes a piled wall installed at 26.5mOD with a temporary prop installed at a higher elevation (26.65mOD). A clarification is required whether it is intended to install a temporary support at a higher level than the level of installation.* ***4.16d*** *Convergence errors are noted in the output of Wallap analysis and these should be reviewed.*	**4.16a:** Worst-case vertical movements at 13 Tottenham Mews formation level are anticipated to occur during Stage 3 (net loading due to demolition, excavation and loading, inclusive of pile installation and deflection movements in the long-term condition) where approximately 6mm of settlement is expected below the 13 Tottenham Mews footing adjacent to the northeast basement wall perimeter. Plate 5 indicating 7mm is the maximum value which is predicted to occur 2-3m from the northern basement wall line, not below the party wall footing. Section 8.8.2.2 is a typo and will be corrected to 6mm. **4.16b:** The deflection ratio shown on the Plates are the worst case scenario. i.e. taking the maximum settlement value, and drawing a line to where the vertical movement becomes zero, then measuring the vertical critical deflection vertically (parallel with the y-axis) to where the settlement profile curve it met. **4.16c:** Yes, it is intended to install a temporary support at a higher level (i.e. on a RC corbel) than the level of installation to avoid a temporary prop (26.65mOD) & permanent slab (SSL 26.386mOD) clash. The temp prop can therefore be removed once the GF slab has been installed. **4.16d:** Convergence error amended and new detailed reports included in the Report Appendix. No change in WALLAP displacement output.		Open

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5	10/02/2021	Stability	A statement whether the predicted ground movements are anticipated to result in any damage on the highway and footpath is requested with mitigation measures, if required – audit Section 4.17. ***4.17*** *A statement whether these movements are anticipated to result in any damage on the highway and footpath is requested, with mitigation measures if required*	The worst-case design condition along the Tottenham Mews boundary is Critical Section A1 (CS-A1) where locally piles are to be 18m long pile to, where the contiguous pile wall is carrying axial load from the two columns located on the pile wall line. Worst-case vertical movements at street level are anticipated to occur during Stage 2 (short-term net loading due to demolition, excavation and loading, inclusive of pile installation and deflection movements) where approximately 10.5mm of settlement is expected below the Tottenham Mews carriageway approximately 2.5m adjacent to the proposed pile wall line. Horizontal movements due to contiguous pile wall installation, for an 18m long pile, conservatively combined with pile wall deflection movements derived from empirical calculations and validated through WALLAP analysis due to excavation and propping, at the Tottenham Mews highway ground level 2.5m adjacent to the eastern site boundary, are anticipated to be approximately 7mm to 7.5mm. These values are not expected to significantly affect the roadway and are considered to be within acceptable limits. Add that we will add a statement that the road is unaffected and that where specific utilities/assets require assessment this will be carried out in accordance with their requirements following planning.		Open
6	10/02/2021	Stability	Reference to the Observational Method shall be clarified – audit Section 4.18.	It is recognised that monitoring is essential to confirm movements during construction, however the details of the methodology will be developed with the party wall (PW) surveyors prior to		Open

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			4.18 *The trigger levels adopted during construction should be associated with the ground movements predicted by the GMA and this should be stated. Clarifications and amendments are requested.*	construction commencing. It is not appropriate at this stage to incorporate a detailed methodology for monitoring, which for practical reasons may ultimately conflict with that proposed and agreed between the PW surveyors. This approach has been agreed with CR previously.		
7	10/02/2021	Stability	Monitoring trigger levels shall be associated with the outcome of the GMA – audit Sections 4.18, 4.19. ***4.18*** *The trigger levels adopted during construction should be associated with the ground movements predicted by the GMA and this should be stated. Clarifications and amendments are requested.* ***4.19*** *Although not related to basement construction, it would be prudent for monitoring to be undertaken during demolition to confirm the conclusions of the GMA.*	Monitoring can be undertaken through installing survey targets along the top of the secant piled wall and ideally on the façade of the neighbouring properties/structures. Baseline values should be established prior to commencement of works as outlined below: • Monitoring targets installed on the facade of the neighbouring structures and baseline reading established prior to demolition and/or enabling works and piles installation. • Monitoring targets installed along the capping beam once constructed and baseline readings established prior to the main basement excavation/construction works commencing. It is likely that party wall engineers will require monitoring during demolition, and this would bre recommended at construction stage in any case as a safeguard. However, as indicated above, the more specific details of the methodology and trigger values will be developed with the party wall surveyors prior to the works commencing.		Open
8	10/02/2021	Stability	An impact assessment on nearby sewers may be required and Thames Water shall be consulted - audit Section 4.7.	CGL acknowledged the need for impact assessments on third party assets in the Preliminary Basement Impact Assessment (PBIA). Comment noted, will be carried out and agreed with the relevant authorities.		

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			4.7 *An impact assessment of the proposed excavation on these assets may be required in accordance with the respective asset owner's policies. The applicant should contact and consult separately with Thames Water to find out the requirements, as this is outside the audit remit.*			
9	10/02/2021	Stability	Drainage into the existing sewer will require permission from Thames Water	Noted. Relevant discharge licences to be sought by the contractor/Client.		