

1.0 APPLICATION DESCRIPTION

Application and property details

Fast-Track project name:	The Downtown Carpark Redevelopment – Te Pūmanawa o Tāmaki
Fast-Track application number:	FTAA-2512-1158 (EPA reference) BUN60460864, LUC60460865, DIS60460866 and WAT60460867 (Council reference)

2.0 Technical Specialist Memo – Geotechnical

To:	Sarah Wilson – Lead Planner & Adonica Giborees - PPL
From:	Dave Ouwejan on behalf of Soil and Rock Consultants
Qualifications & Relevant Experience:	I hold the qualification(s) of: Bachelor of Engineering and have 24 years of experience in Geotechnical Engineering. I am a Chartered Professional Engineer (Geotechnical) (CPEng) and a Chartered member of Engineering New Zealand (CMEngNZ). I have prepared expert evidence and technical assessments for resource consent applications, plan changes, notices of requirement for designation and fast-track applications, and have appeared as an expert witness in the High Court on multiple occasions.
Preparation in Accordance with the Code of Conduct:	I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses (Code), and have complied with it in the preparation of this memorandum. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.
Signature:	
Date:	5 May 2026

3.0 Executive Summary / Principal Issues

With respect to geotechnical matters, we have undertaken a review against E12, E36 with regard to the AUP (OiP) and the Resource Management Act. We consider that adequate geotechnical assessment has been completed by the applicants engineer at this stage of the consenting process.

We consider that with the proposed conditions, including the additional conditions presented below, and the GSMCP that adverse geotechnical and land instability effects would in our professional engineering opinion be avoided or mitigated to achieve an acceptable level of risk. **In summary, with these conditions, I support the application.**

4.0 Documents Reviewed

The following documents have been reviewed in preparing this memorandum:

- Tonkin + Taylor - PC120 Risk Assessment, 11 Dec 2025, 1016043.2000
- Tonkin + Taylor - Geotechnical and Groundwater Assessment Report, Nov 2025, 1016043.2000-RPT-GT-001
- Tonkin + Taylor - Groundwater and Settlement Monitoring Contingency Plan, Nov 2025, 1016043.2000 v5.1
- Tonkin + Taylor – *Additional sketches, plans and cross sections provided during the RFI process*

5.0 Additional Reasons for Consent Not included in AEE / Incorrect Reasons for Consent

The applicant's geotechnical engineer has provided evidence as part of the application with regard to the geotechnical natural hazards and geotechnical effects on neighboring properties. The proposed development and the neighbouring buildings are embedded into Waitematā Group rock. The evidence provided by the applicant's engineer indicates there will be negligible effect on neighbouring properties subject to detailed design and monitoring and contingency plan.

6.0 Specialist Assessment

The AEE states: "The proposed Project includes the demolition of the existing downtown carpark building (together with the Lower Hobson Street pedestrian bridge and Customs Street West vehicle ramp located within part of the road reserve) and redevelopment of the Site to provide for a mixed-use precinct providing for commercial, residential, hotel, retail, food, beverage, and civic uses. The redevelopment involves three podium buildings, two towers, and **four levels of shared basement**, including new public spaces and a new laneway network to provide connectivity within the city centre." The basement floor levels, and footprint are based on the current Architectural Drawings for Preliminary Design provided by the Architect, Warren and Mahoney and dated 3/10/2025."

T&T has developed a detailed engineering geological model for the site using the results of a site-specific investigation, together with the results of historic T&T investigations undertaken within the general vicinity. The

geological model has been subsequently used to undertake geotechnical analysis, for the purpose of evaluating the effects of potential ground deformation as a result of the works.

T&T has identified that the following buildings/structures may be affected by the proposed activity:

Address	Legal Title
M Social (196 Quay St)	Lot 8 DP 60151
HSBC Tower (188 Quay St)	Lot 5 DP 63972 and Lot 1 DP 7834
AON Tower (21/29 Custom St West)	Lot 7 DP 77037
Tepid Baths (100 Custom St West)	Lot 2 DP 184176
Watermark (85 Custom St West/ 1 Lower Hobson St)	Lot 2 DP 197735
204 Quay Street	Lot 1 DP 183125
Lower Hobson Street flyover	N/A

T&T has also identified existing and proposed services present beneath the surrounding footpaths and road pavements which may be affected by the proposed activity. However, the identification and location of these services is **considered to be incomplete** (Refer proposed consent conditions).

I note that the proposed basement excavation level are embedded into Waitematā Group rock and soils at the sides of the basement excavation will be supported using a combination of top-down constructed retaining systems. These will include diaphragm walls, sheet piles and ground anchor tie backs. These will require further specific engineering design and the detailed design shall include design to mitigate wall deflections.

T&T has provided a GSMCP to monitor the settlement effects of the proposed activity during construction. as outlined in the Addendum geotechnical report, dated 7 April 2026.

7.0 Section 67 Information Gap

The information requested by us during our review has been provided by the applicant or has been flagged by a proposed consent condition, including:

- Existing and proposed service locations
- Construction methodology
- Detailed design
- Condition assessment

Information gap	Nature of deficiency	Decision-making impact	Risk / uncertainty created

8.0 Recommendation

The proposed works involve significant ground disturbance with the potential for significant geotechnical effects. The application is reliant on specifically engineered retaining and support structures to mitigate the potential effects and at the time of this application further detailed design is required. A number of additional proposed consent conditions are provided below.

9.0 Proposed Conditions

The following additional conditions of consent are proposed:

- **Asset Location**

Prior to the lodgment of structural building consents, the consent holder must identify and locate all public and private services, basements and foundations in proximity (beyond the extent of any ground anchors and the zone of influence of any retaining) to the proposed earthworks and anchors. This must inform the detailed design and anchor geometry must be designed to avoid effects on buried services and neighbouring foundations and retaining.

Advice Note: It is necessary to assess the effects on basements, foundations and services, regardless of their ownership.

- **Temporary Works Decommissioning**

Destressing and decommissioning of ground anchors shall be addressed as part of detailed design. Where proposed new services would be constructed at locations potentially affected by the ground anchors, the construction sequencing for those services shall allow for their construction following decommissioning of the anchors.

- **Detailed Design**

Further detailed design (including PLAXIS modelling) shall be completed for the basement retaining walls to confirm, based on the final construction methodology and sequence, including the following matters:

- *Retaining wall movements and ground settlement: confirmation of predicted wall deflections and associated ground surface settlement for the final excavation staging and support system remain within consented limits.*
- *Temporary/permanent support demands: final sizing/spacing and load demands for temporary anchors and/or top-down props, including waler/capping beam actions.*
- *Groundwater cut-off and seepage effects: confirmation of the final D-wall toe level to achieve the required groundwater cut-off and to manage seepage uplift/piping risks consistent with the AEE assumptions.*
- *Liquefaction effects: refinement of liquefaction assessment inputs and confirmation of liquefaction-related lateral earth pressures/deformation demands on the wall system.*
- *Contingency: sensitivity testing for parameters and construction elements for contingency planning.*
- *Considerations of neighbouring building surcharge, including basements and deep foundations.*

The above shall be supported by additional investigation and groundwater testing as necessary. These confirmations will be undertaken consistent with the AEE design basis and the consent conditions, and shall not materially change the effects conclusions.

- **Construction methodology**

The consent holder must, prior to the lodgement of structural building consents provide a detailed construction methodology written or endorsed by a chartered geo-professional for the contractor to undertake the earthworks with and include the recommendations provided within Geotechnical and Groundwater Assessment Report by Tonkin + Taylor (reference: 1016043.2000-RPT-GT-001, dated: November 2025) to the Council for written certification. The construction methodology must include:

- *Details confirming the sequencing of installation of new underground services to follow after the decommissioning of ground anchors where ground anchors are identified by the SQEP to affect new service locations;*
- *The **detailed basement design** as required by condition*
 - *safety requirements for the areas above excavations and excavation time frames; and*
 - *temporary propping/weatherproofing and sequencing of boundary works.*

The consent holder must ensure that the contractor carries out the earthworks and construction in accordance with the certified construction management plan at all times.

No earthworks may commence until written certification of the construction methodology by the Council has been provided.

Advice Note: *This must be provided to ensure boundary stability is maintained throughout the civil works stage of the development.*

Certification from a suitably qualified engineering professional (SQEP) must be provided to the Council confirming that the earthworks have been completed in accordance with the approved construction methodology as required by Condition [90] within 10 working days following completion. Written certification must be in the form of a geotechnical completion report, or any other form acceptable to the council.

The consent holder must ensure that the excavation and basement retaining wall works are carried out on site in accordance with the further detailed basement designs detailed certified GSMCP and certified construction methodology.

- **Pre-construction condition survey**

Prior to the commencement of any earthworks onsite, a detailed pre-construction condition survey, must be completed for those properties identified in immediate proximity to the development. The condition survey must be carried out in accordance with the recommendations in the Groundwater and Settlement Monitoring and Contingency Plan (GSMCP) as listed in Condition 1. This must be prepared by a suitably qualified engineering professional and must be submitted for certification by the Council prior to construction works commencing. The consent holder must allow a minimum of ten (10) working days for a response from the owner of any property that a condition survey is required for as set out in the GSMCP.

Any existing damage is to be reviewed by the suitably qualified engineering professional responsible for the GSMCP. The assessed condition of the neighbouring properties shall not cause a change damage Risk Category assessed by the GSMCP.

Advice Note: *It is necessary to undertake pre-construction condition survey, regardless of their ownership.*

A copy of the pre and post-construction reports must be forwarded to the Council within 15 working days of completing the reports and prior to construction along with certification from the Chartered Surveyor or Chartered Professional Engineer who has certified that the survey has been completed in a professional manner and is an accurate assessment of the condition of the building concerned.

- **Post-construction condition survey**

Within six months of completion of the construction works, a post-construction condition survey must be completed for those properties for which a pre-construction condition survey was undertaken.

Advice Note: This condition does not apply where written evidence is provided to the Council that the owner of a property has confirmed they do not require another condition survey.

The post-construction condition survey must be carried out in accordance with the recommendations in the Groundwater and Settlement Monitoring and Contingency Plan (GSMCP) as listed in condition 1. This must be prepared by a suitably qualified engineering professional and must be submitted for certification by the Council.

The post-construction condition survey report must include a determination of the cause of damage identified (if any) since the pre-construction or previous survey and steps to repair it. The costs of repairing any damage attributed to the development must be paid by the consent holder.

10.0 Supporting Documents

Attached is the Geotechnical review register, which includes queries raised by us as the reviewer and the responses received by the applicant's geotechnical engineer.

Geotechnical review register - comment summary sheet

Initial Review Date	25-Feb-26
Application number	BUN60460864 / PR00043070
Application type	Resource Consent - Fast Track application / but Pre application stage
Address	2 Lower Hobson Street, Auckland Central
Reviewed document/s reference	1 - Tonkin + Taylor - PC120 Risk Assessment, 11 Dec 2025, 1016043.2000 2 - Tonkin + Taylor - Geotechnical and Groundwater Assessment Report, Nov 2025, 1016043.2000-RPT-GT-001 3 - Tonkin + Taylor - Groundwater and Settlement Monitoring Contingency Plan, Nov 2025, 1016043.2000 v4.1
Reviewed by	SHF (S&RC)
Checked by	DO (S&RC)

Review outcome	Accepted
	For information only
	Resolved - Consent Condition Recommended
	Unsatisfactory/Not accepted

Comment No.	Reference	Reviewer Query Date: 28/02/2026	Applicant Response Date: 18/03/2026 (received)	Reviewer Response Date: 24/03/2026	Applicant Response Date: 18/04/2026 (received)	Reviewer Response Date: 21/04/2026	Applicant Response Date: 23/04/2026	Reviewer Response Date: 24/04/2026
1	4.5 Retaining wall design considerations	The back anchors have been proposed to support the retaining wall(s). Please provide assessment of the length and therefore extent of the proposed tiebacks required. Please comment on the extent relative to the boundary and the effect on neighbouring structures. As varying inclination of tiebacks is proposed, please comment on interaction of tiebacks	We have reviewed the approximate lateral extent of the top row of anchors along the western wall. The top row of anchors along the southern and south-western boundaries is expected to have a shorter lateral extent due to the steeper inclination and the shallower depth to rock. The assessment adopts the following: • Elevation for top row of anchors: RL +2.5 m • Elevation for top of rock: RL -8.0 m • Anchor inclination: 30° • Unfactored anchor load (horizontal) from WALLAP: 290 kN (at 2.5 m c/c spacing) Assuming an anchor hole diameter of 150 mm and an unfactored bond capacity of approximately 1,000 kPa within ECBF rock, the minimum bond length is estimated to be approximately 3 m. On this basis, the top row of anchors is expected to be: • Approximately 21 m long (~18 m free length + ~3 m fixed length). • ~18 m lateral extent at 30° inclination. This extent has been overlain on the attached plan, which shows the anchors would terminate approximately centrally within Lower Hobson Street. We do not anticipate interaction between adjacent tiebacks.	The drawing provided does not show the indicative extent of anchors on other boundaries. These would potentially extend towards neighbouring services and foundations etc. It is unclear whether these are proposed to extend beyond the property boundary. While the particulars of the anchors would be resolved at the detailed design stage it appears that the potential effects have not been adequately defined. Please provide a plan showing the indicative extent of anchors at all proposed locations. Please provide indicative cross sections showing the position of the proposed anchors relative to services and foundations to indicate potential interactions. In particular, sections should be shown towards east (neighbouring foundations), southeast (towards AON lower), and west (Hobson St services). Please provide further comment on the effect of the anchors on these neighbouring assets with reference to the sections. As these are temporary anchors, please comment on how they would be decommissioned and de-stressed to remove long term effects on neighbouring properties.	The basement is located generally offset along the road and MSocial property boundaries. Hence, while any ground anchors required to retain the basement adjacent to the roads will extend beyond the property boundary, they will be a minimum of 2.3m below ground level at the boundary and below any known services. Ground anchors will also remain well within the road corridor (i.e. won't extend beyond the road corridor into neighbouring private properties to the west). Indicative cross-sections showing anchor positions relative to buried services are provided along the southern and western boundaries. Work is currently in progress to identify and locate services and, if necessary, the anchor geometry will be refined to maintain clearances and avoid conflicts. The applicant also owns the properties to the east (AON Tower and HSBC Tower) and therefore permissions to extend temporary anchors along the building perimeter will be granted. A top-down construction methodology has been adopted along the northern boundary of the site to avoid requirement to obtain permission for temporary anchors along this boundary. No other potential effects are anticipated from anchor installation. Once the permanent works are complete and self-supporting, the anchor lock-off load will be progressively released in a controlled manner using the stressing jack until the load is reduced to zero. The tendons will then be cut back behind/beyond the wall face and the head assembly removed/made inactive. The bonded (grouted) length remains in situ beyond the boundary, but as these are deep and tendons have been fully de-stressed and severed, they should not impose any ongoing load or long-term effect on neighbouring land/assets.	The applicant has indicated that work to identify and locate services is currently in progress. It is recommended that as a condition of consent, this should be completed and should inform detailed design. Anchor geometry to avoid effects on buried services should be addressed as part of detailed design. Effects of anchors on the properties to the east (AON Tower and HSBC Tower) has not been addressed on the basis that the applicant owns these properties. We consider that it is necessary to assess the potential effects on these buildings regardless of any proposed waiver from the asset owner. The site plan provided by the applicant indicates "Ground anchors may be restricted due to neighbouring basement + depth to ECBF rock". It is necessary to assess the effects on basements, foundations and services, regardless of their ownership. • Please provide a plan showing basement and foundation positions for neighbouring buildings, including those owned by the applicant, especially for the area referenced by the above mentioned note on restriction of ground anchors by neighbouring foundations. • Please provide additional cross sections showing the potential interactions between proposed anchors and existing foundations, basements and services. Destressing and decommissioning should be part of detailed design. It is noted that some proposed new services are shown to be constructed following decommissioning of the anchors. This should be carried through into the construction sequencing for these services.	We accept the recommended condition of consent to identify and locate services, with detailed design of anchors to be addressed to avoid effects on buried services. We have provided the requested Sections 4 to 7, which include the approximate locations of the neighbouring AON & HSBC Tower basements relative to the proposed basement walls (and temporary sheetpiles where applicable). These sections show that the anchors are expected to be well clear of the proposed basements and therefore pose negligible risk. Based on the inferred ECBF rock levels shown on the sections, the anchors are considered unlikely to extend below the basements themselves (i.e. contained within the service lane).	Consent condition recommended
2	4.5 Retaining wall design considerations	Secant piles are mentioned as an alternative option for part of the retaining wall. Please comment on sensitivity of the assessed effects to this (and any other) alternative option under consideration.	A potential secant pile alternative is expected to comprise of 750mm diameter hand-had piles spaced at 0.6m centres. Adopting the stiffness of 30 MPa concrete for both 'primary' and 'secondary' piles, the gross stiffness (EI) of this wall will be approximately 700,000 kNm ² per m length of wall (compared with 1,170,000 kNm ² for the 800mm wide D-wall). For comparison, this reduced stiffness has been adopted for the western anchored wall WALLAP analyses (refer attached). The results indicate the reduced stiffness has a negligible impact on predicted displacements estimated as less than 1mm, i.e. they remain approximately 24 mm during construction.	The applicant has had indicated that the potential alternative would potentially change the magnitude of the effects, but has not identified additional effects resulting from the alternative. This can be considered at the detailed design stage.				
3	Detailed design items	Several aspects of the report refer to confirmation during detailed design, e.g. the lateral pressure to be supported by retaining walls following liquefaction within the fill and marine sediments. Please provide an outline of the effects which are proposed to be deferred to be addressed by detailed design.	Further detailed design (including PLAXIS modeling) will be completed for the basement retaining walls to confirm, based on the final construction methodology and sequence, the following matters: • Retaining wall movements and ground settlement: confirmation of predicted wall deflections and associated ground surface settlement for the final excavation staging and support system remain within consented limits. • Temporary/permanent support demands: final sizing/spacing and load demands for temporary anchors and/or top-down props, including water/capping beam actions. • Groundwater cut-off and seepage effects: confirmation of the final D-wall toe level to achieve the required groundwater cut-off and to manage seepage uplift/piping risks consistent with the ASE assumptions. • Liquefaction effects: refinement of liquefaction assessment inputs and confirmation of liquefaction-related lateral earth pressures/deformation demands on the wall system. • Contingency: sensitivity testing for parameters and construction elements for contingency planning. The above will be supported by additional investigation and groundwater testing. These confirmations will be undertaken consistent with the ASE design basis and the consent conditions, and are not expected to materially change the effects conclusions.	Confirmation of assessment of the effect listed here at the detailed design stage, along with any other effects arising through the detailed design process, should be included as a condition of consent.				
4	Obstruction risk	Several parts of the report reference potential for variation in construction quality (e.g. Site History mentions potential conflict between historic foundations and diaphragm wall). Please comment on the sensitivity of the assessment of effects on the quality of the construction, i.e. what are the potential effects in case of foreseeable and worst case construction defects?	The perimeter basement retaining wall alignment has been set specifically to avoid clashes with the belted piles to the existing Downtown carpark, which is considered the primary risk item from a constructability perspective. Early contractor engagement indicates that if belted pile sections (or other isolated obstructions) are encountered during piling, the piling plant is expected to have sufficient capability to excavate through them, otherwise there are established obstruction-management methods available. These measures are not expected to compromise construction quality. Foundations associated with the pre-existing three-level structures are expected to comprise shallow foundations and/or driven timber piles. Any such obstructions can be managed during construction using standard remove/bypass techniques and are not anticipated to result in adverse impacts on construction quality or the performance of the basement retaining wall system.	Please provide confirmation if the applicant is agreeable to a condition of consent for a detailed construction methodology to provide flexibility in approach to account for available plant material and contractor experience. If not, please provide a detailed construction methodology endorsed or written by a geo-professional for the construction.	Agreeable to add this condition	Consent condition recommended		
5	4.6.2 Deformation criteria for buildings	"criteria of less than 1(v)/500(h) differential settlement and less than 10 mm total settlement (negligible effects)" has been adopted based on CIRIA PR30. Please confirm appropriateness of this criteria with specific consideration of the neighbouring structures (buildings and services) and the proposed works. Table 4.13 makes comment on predicted damage to buildings from estimated ground settlement. As the alert and alarm levels for ground settlement are much higher than the estimated ground settlement, please comment on risk of damage to buildings if the ground settlement reaches alert or alarm levels?	CIRIA PR30 guidance (including the settlement/damage correlations) is largely based on experience with traditional loadbearing masonry (brick/stone) buildings on shallow strip/pad foundations. The neighbouring buildings are primarily piled reinforced concrete and/or steel frame structures, which are generally less sensitive to small ground movements than what is assumed in the assessment. Therefore, adopting the limits for 'negligible effects' from CIRIA PR30 here is likely conservative for the adjacent structures being considered. The proposed alert / alarm limits for nearby buildings are set at 7 to 10mm limits, which are within the above criteria and are not expected to result in building damage.	The referenced guidance relates to "total settlement". This includes all historic settlement in addition to the potential settlement effect. Please provide an assessment of the historic settlement of the effected assets and comment on whether the tolerable limits for further settlement should be reduced when considering the 'total settlement'. However, given the negligible settlements predicted at the nearest adjacent buildings in our assessment (both total and differential), the buildings surrounding the proposed basement are all 'Risk Category 1 - Negligible risk' and therefore do not warrant further assessment (including historical 'total' settlement). We note also that the groundwater conditions at the potentially affected buildings to the west and north are all close to the harbour edge, and this will control water levels for both historic and proposed works. The Tepid baths has been re-filled subsequent to any historic settlement. Predicted settlements are well within the limits defined in the Category 1 risk category. However, Alert and Alarm levels have been assessed in line with the total settlement limits of Risk Category 1, reflecting that no damage is anticipated to neighbouring structures should this level of movements occur, nor is it likely that any intervention would be undertaken prior to this level of movement, other than continued monitoring and visual inspections which are already prescribed in our GSMCP. Alert level differential settlements of 1(v):1,000(h) have been adopted, compared to the 1(v):500(h) limit in CIRIA PR30, to provide additional conservatism. Predicted settlements at the nearest adjacent structures (MSocial, HSBC Tower, AON Tower & Lower Hobson (Hyers)) are generally between 8-10mm in line with the Alert / Alarm levels in our draft GSMCP. The Auckland Council Groundwater specialist has undertaken their own independent review and has recommended Alert & Alarm Levels are raised in the draft conditions to 8 mm and 12mm (MSocial, HSBC Tower, AON Tower) and 11 mm and 14mm (Lower Hobson (Hyers)), respectively. We propose adopting these increased trigger levels. Where predicted movements are small, as assessed at 204 Quay St, Tepid Baths and 85 Customs Street, the setting of very low trigger levels can be unduly influenced by survey tolerance (typically ±2 mm), and would unnecessarily delay construction. We recommend the setting of limits which correspond to Risk Category 1.	Table 9 in CIRIA PR30 is a Stage 1 screening tool to classify risk and determine whether buildings need specific Stage 2 / 3 assessment which is the usual process applied for assessment of developments for Auckland Council. These latter stages take into account sensitivity of the structures and evidence of existing historical deformations to aid further risk assessment. However, given the negligible settlements predicted at the nearest adjacent buildings in our assessment (both total and differential), the buildings surrounding the proposed basement are all 'Risk Category 1 - Negligible risk' and therefore do not warrant further assessment (including historical 'total' settlement). We note also that the groundwater conditions at the potentially affected buildings to the west and north are all close to the harbour edge, and this will control water levels for both historic and proposed works. The Tepid baths has been re-filled subsequent to any historic settlement. Predicted settlements are well within the limits defined in the Category 1 risk category. However, Alert and Alarm levels have been assessed in line with the total settlement limits of Risk Category 1, reflecting that no damage is anticipated to neighbouring structures should this level of movements occur, nor is it likely that any intervention would be undertaken prior to this level of movement, other than continued monitoring and visual inspections which are already prescribed in our GSMCP. Alert level differential settlements of 1(v):1,000(h) have been adopted, compared to the 1(v):500(h) limit in CIRIA PR30, to provide additional conservatism. Predicted settlements at the nearest adjacent structures (MSocial, HSBC Tower, AON Tower & Lower Hobson (Hyers)) are generally between 8-10mm in line with the Alert / Alarm levels in our draft GSMCP. The Auckland Council Groundwater specialist has undertaken their own independent review and has recommended Alert & Alarm Levels are raised in the draft conditions to 8 mm and 12mm (MSocial, HSBC Tower, AON Tower) and 11 mm and 14mm (Lower Hobson (Hyers)), respectively. We propose adopting these increased trigger levels. Where predicted movements are small, as assessed at 204 Quay St, Tepid Baths and 85 Customs Street, the setting of very low trigger levels can be unduly influenced by survey tolerance (typically ±2 mm), and would unnecessarily delay construction. We recommend the setting of limits which correspond to Risk Category 1.	From CIRIA PR30: P50: "It is usual practice in London to produce a schedule of existing defects for all structures falling within the zone of potential influence" P64: "S.2 Condition Survey - To assess the effects of underground construction on nearby structures, it is essential that their condition prior to construction is determined and a schedule of existing defects is recorded." P60: "Table 10: Negligible - Action: No action except for any building identified as particularly sensitive for which an individual assessment should be made" Please confirm whether a detailed condition assessment has been undertaken for all buildings within the potential influence area to identify buildings which are particularly sensitive or complex. Given the adjacent buildings are complex multi-storey buildings, please comment on whether these buildings are considered particularly sensitive or important.	From CIRIA PR30: P50: "It is usual practice in London to produce a schedule of existing defects for all structures falling within the zone of potential influence" P64: "S.2 Condition Survey - To assess the effects of underground construction on nearby structures, it is essential that their condition prior to construction is determined and a schedule of existing defects is recorded." P60: "Table 10: Negligible - Action: No action except for any building identified as particularly sensitive for which an individual assessment should be made" This is already included in the consent conditions, as discussed below. P60: "Table 10: Negligible - Action: No action except for any building identified as particularly sensitive for which an individual assessment should be made" This is outlined in Table 5.2, as discussed below.	As a condition of consent the Condition Surveys outlined by the GSMCP should be undertaken. Any existing damage is to be reviewed and, as a condition of consent, the proposed works shall not cause the neighbouring properties to change damage Risk Category.
6	Table 4.10, Table 4.1	Wallap output indicates up to 24mm deflection (inferred to be lateral). This exceeds Alert level for retaining wall deflection (20mm) and nearly exceeds Alarm level (25mm). Please comment on what level of acceptable deflection is proposed to be adopted for detailed design.	For detailed design we propose to utilise the current predicted wall deflections as acceptable criterion, as this will ensure the effects remain broadly aligned to our assessment of effects.	The applicant's response indicates that the design criteria proposed to be adopted by the detailed design (current predicted wall deflections i.e. 24mm) would exceed the proposed Alert level (20mm). Please comment on the appropriateness of providing a design which is expected to exceed Alert levels.	In our experience on similar projects, the WALLAP analyses tends to over predict wall displacements compared to those observed during construction. Therefore, we propose to keep the proposed Alert & Alarm levels conservatively at 20 & 25mm.	Noted	MSocial and HSBC are pile-supported with suspended floors, so their loads are transferred to depth and therefore impose negligible ground-surface foundation surcharge behind the wall. AON Tower - A two-level basement and is located at an approximate 9 m offset from the proposed excavation/retaining line, and is therefore outside the notional 45° load distribution (zone of influence) from the building/basement footprint. In addition, with the building bearing on ECBF rock, any pressure transfer through the ground towards the wall would be minimal. We will incorporate the AON Tower basement and representative foundation pressures into the PLAXIS modeling at detailed design to confirm the wall response and verify that the assessed impacts remain negligible.	Detailed design considerations of neighbouring building surcharge should be included at detailed design stage along with Design Items noted under point 3 of this review register