Submission No.	078
Organisation Name or Name of Submitter	Earl Court Management Company DAC (represented by Kavanagh Mansfield & Partners)

Item No.	Section Ref.	Page No.	Observation Statement	TII Response
RE: Railway (Metrolink-Estuary to Charlemont via Dublin Airport) Order 2022, Earl Court Apartments, Adelaide Road				
1	Part 1	2	The route selection including horizontal alignment, vertical alignment and depth of MetroLink belowground in the area adjacent to our Clients' building, should be reviewed by NTA/TII to satisfy themselves and to ensure that: (a) MetroLink does not cause structural damage to the foundation system supporting our Clients' building, which comprises strip and pad foundations founded in boulder clay. (b) MetroLink does not cause structural damage to our Clients' building at any level. (c) MetroLink does not cause damage to the finishes of our Clients' building. (d) MetroLink provides the necessary vertical and/or horizontal clearance between the existing basements and the tunnels. (e) We enclose a copy of a drawing EARL-WMS-ZZ-ZZ-DR-S-21209 prepared by Waterman Moylan for your information and reference. Our Clients' building is located on the south eastern side of the building, as shown by Waterman Moylan. We are showing on that drawing our clients' building.	Thank you for the provision of additional drawings on your building. These drawings confirm the assessment undertaken to date. On the MetroLink Project, the approach to ground movement and building damage assessment follows the industry standard three-phased ground movement impact assessment process that is undertaken on tunnelling and underground projects around the world, that includes Channel Tunnel Rail Link (CTRL), Dublin Port Tunnel, Crossrail and High Speed 2. The MetroLink tunnel has been assessed going under these properties at the depth and on the alignment proposed and TII are satisfied that the assessed movements will not lead to structural damage to these properties. EIAR Appendix A 5.17, Building Damage Report, covers the assessed impact is of construction generated ground movements and settlement on property. Table 5-2 of this report shows that the building in question (B-147) has been assessed as falling within the ''Slight damage'' category currently, an explanation for which can be found in Table 4-4 of the aforementioned report. Such damage if it occurs would be very minor including at worst slight cracking that might require some filling or repointing. Any damage caused as a result of the advancement of the TBM would be repaired by TII. The building has been classified under "Damage category 2 or below" following the Refined Phase 2a Building Damage Assessment. EIAR Appendix 5.17 specifies that all buildings that have been subject to a Phase 2a assessment will be reviewed and reassessed by the D&B Contractor. This Phase 2b assessment will use refined and updated parameters available to the D&B contractor as a result of progression in the development of the design and finalising his construction methodology and planning. If your building is classified at the end of the Phase 2b assessment as Damage Category 3 (Moderate) or above (or where there exists any uncertainty after the Phase 2b assessment) will be the subject of a Phase 3 assessment by the D&B Contractor. The Phase 3 assessment will take account of final design and construction methodology details. For the Phase 3 assessment, each building will be subject to detailed assessment on an individual basis. A detailed survey will be carried out as part of the Phase 3 assessment to provide the necessary additional information to inform this detailed analysis of how the individual elements of the building would be affected by the predicted ground movements. The method and extent of the detailed analysis will be determined on a case-by case basis and may include a more sophisticated semi-empirical or a detailed soil-structure interaction using finite element modelling methods. It is likely that the Phase 3 assessment will yield further improvement to the damage category determined by the Phase 2b assessment. The results of this refined assessment typically show that earlier assessments are conservative and overestimate the likely impact of construction generated ground movements.
2	Part 2 (Construction Information) & Part 3 (Operation Information)	3	We note that Drawing No. ML1-JAI-EIA-ROUT-XX-DR-Y-13038 (a copy is attached to this submission) does not identify any potential receivers in the area of our Clients' building, therefore essentially ignoring potential damage to our Clients' building.	The drawing ML1-JAI-EIA-ROUT-XX-DR-Y-13038 presents the receptors considered in the assessment of airborne noise during construction works at the overground sites, where the closest receptors are modelled. According to Chapter 13 Airborne Noise & Vibration, 13.2.3.1 Study Area Construction Phase from an airborne noise and vibration point of view, the key study areas during the Construction Phase include all surrounding sensitive environments to surface construction compounds. Depending on the sources in question and the local area under consideration, the study area extends out to between 50m from construction works to 300m from construction works. The building is located outside the 20 dBLamax contour line for the closest compound as a result no significant impact in terms of Airborne Noise and Vibration is expected on this building as a result of Metrolink works. Please note that there will be no damage caused to this building arising from noise & vibration.
3	Part 2 - Construction Information	3	a) MetroLink has assessed the "Ground Borne Noise from Tunnel Boring Machine" and presents its findings on Drawing No. ML1-JAI-EIA-ROUT-XX-DR-Y-14009 (a copy is attached to this submission). This drawing indicates MetroLink will generate an additional 50db directly under the location of our Clients' building, which is unacceptable.	Appendix 14.5 Ground Borne Noise and Vibration Blasting Modelling Results presents predicted groundborne noise and vibration levels during the construction and operation phase of the project. The prediction of groundborne noise during TBM passage for the Earl Court Apartments is 50 dB LASmax, which is above the 45 dB LASmax threshold, resulting potential for impacts on the buildings occupants for the limited duration of TBM passage (less than 2 weeks). Unfortunately, there are no effective methods available to reduce groundborne noise or vibration from TBMs at source, but noting that the duration of this impact will be in the order of up to two weeks as the TBM passes. TII will liaise with Earl Court Management Company DAC to ensure the timing of these impacts are known. The principal mitigation measures aimed at minimising impacts are as follows: - Advance public consultation and stakeholder engagement can greatly reduce the significance of groundborne noise effects, as building occupants would be prepared for the passage of the TBM and resultant elevated noise and vibration levels. - TII will accept and consider applications for additional measures on a case-by case basis, in accordance with its Noise and Vibration Mitigation Policy (see EIAR Appendix A14.6, Airborne Noise & Groundborne Noise Mitigation Policy).

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4	Part 2 - Construction Information	3	b) MetroLink has assessed the predicted "*Settlement*" and presents its findings on Drawing No. ML1-JAI-EIA-ROUT-XX-DR-Y-21149 (a copy is attached to this submission). The deflexion drawing shows settlement between 1 and 45mm occurring underneath our Clients' building. Their building is a conventional masonry and concrete building, which will find it difficult to absorb such a high level of differential settlement. It is also close to the adjoining Cadenza Building which was constructed beside and below their building. This movement cannot be accommodated by the building's structure and could cause damage to foundations, basement, superstructure, facade and internal finishes.	Please refer to response (1). The settlement contours calculated were used to undertake the building damage assessment and conclude a slight damage category. The damage categories are described in section 4.3.2 of the EIAR Appendix A 5.17, Building Damage Report. The Phase 2a assessment will be confirmed by the contractor during further future assessment. TII will undertake any repairs required caused by the construction of the MetroLink. Pre and Post condition surveys will be undertaken to verify.
5	Part 3 - Operational Information	3	a) MetroLink has assessed the "*Groundborne Noise from Operation*" and presented its findings on Drawing No. ML1-JAI-EIA-ROUT-XX-DR-Y-14041 (a copy is attached to this submission). This drawing indicates MetroLink will be generating an additional 35db directly under the location of our Clients' building which is unacceptable.	Appendix 14.5 Groundborne Noise and Vibration Blasting Modelling Results presents predicted groundborne noise and vibration levels during the construction and operation phase of the project. For Earl Court Apartments building, the prediction of groundborne noise and vibration during railway operation are as follows: - The predicted level of groundborne noise during the railway operation for Earl Court Apartments building is 35 dB LASmax, which is below the 40 dB LASmax threshold. - The predicted level of groundborne vibration during the railway operation for Earl Court Apartments building is 0.01 ms-1.75, much lower than the VDV (Vibration Dose Value is a parameter that combines the magnitude of vibration and the time for which it occurs) threshold of 0.8 ms-1.75. As a result, we consider that no significant impact is expected on the building as a result of Metrolink operation.
6	Part 4 - Acquisition of substratum land	3	MetroLink has proposed to acquire the substratum land located under our Clients' building, which is outlined in drawing no. ML1-JAI-EIA-ROUT-XX-DR-Y-01097 (a copy is attached to this submission). This is unacceptable to our Client, as the future potential to develop this prominent site in the Future will be damaged.	TII note your concerns about the potential impact of MetroLink Project on future potential development of your site. The acquisition of substratum land beneath the Earl Court Management Company DAC building is to enable the construction of the Metrolink tunnel. The tunnels are designed and constructed to support future imposed loads. MetroLink will be a catalyst for and provide opportunity for future development and regeneration. While the MetroLink Railway Order does not include for future neighbouring or overhead development, the tunnels and stations are designed to support appropriate future imposed loads. TII will be required to make submissions in relation to planning applications for proposed future developments on or adjacent to MetroLink and there will necessarily be some engineering constraints (such as permissible loadings) required. However MetroLink is committed to engaging with known development proposals and new development proposals as they emerge with the intent of facilitating such developments as they emerge to the maximum extent consistent with the safe operation of the proposed Project. Again in common with other existing rail and tunnel projects, following grant of the Railway Order and development of detailed design, TII will produce "Guidance Note for Developers" that will be the subject of bye-laws following the grant of Railway Order and which is designed to facilitate future adjacent or over-site development while protecting the integrity and safety of the MetroLink works and operations. Therefore at this stage TII is dealing with known development proposals on a case by case basis, TII will work with parties in the future to assist with the wider development of sites over and above stations and tunnels. In this context TII has successfully engaged with a number of developers over the last two years to accommodate development over and in proximity to the alignment and there have been no material restrictions on development subject to the implementation of agreed design and mitigation measures and it is not anticipated that MetroLink will have a material impact on the development potential of sites above and in proximity to the alignment in future.
7	Summary Conclusion	3	In summary, our Client requests that the route of the proposed MetroLink tunnels are diverted away from their current proposed location (under our Clients' building) to either below the public carriageway or buildings that will not be damaged or compromised by the presence of the tunnels located under.	TII do not intend to alter the horizontal alignment as the building damage assessments undertaken support the validity of the alignment. Refer to Item 1 above.