

Submission No.			131		
Organisation Name or Name of Submitter			Irish Life Assurance plc. (70 St Stephens Green) - represented by Waterman Moylan		
Item No.	Section Ref.	Page No.	Observation Statement	TII Response	
Re: Railway (Metrolink-Estuary to Charlemont via Dublin Airport) Order 2022, 70 St Stephens Green (formally known as Hainault House Nos. 69-71 St. Stephens Green, Dublin 2)					
1	Submission 1	2	<p>The route selection including horizontal alignment, vertical alignment and depth of MetroLink below ground in the area between Chainage 18+600 and Chainage 18+700 should be reviewed by NTA / TII to satisfy themselves and to ensure that</p> <p>(a) MetroLink does not cause structural damage to the foundation system supporting our client’s building which comprises a mixture of CFA piles (some extending c.14.0m below ground level) and pads foundations which are founded on the competent rock.</p> <p>(b) MetroLink does not cause structural damage to our client’s building at the basement level. The basement structure forms the waterproof envelope to our Clients building and any damage would result in the ingress of water into the basement.</p> <p>(c) MetroLink does not cause damage to the bespoke cladding; glazing and fragile finishes of our client’s building.</p> <p>(d) MetroLink provides the necessary vertical and/or horizontal clearance between the existing basements and the tunnels.</p>	<p>The approach taken by TII 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.</p> <p>EIAR Appendix A5.17 Building Damage Report details the Phase 2 assessment process and the damage categories are explained in section 4.3.2. The building is assessed at damage category 2 (Slight Damage). The MetroLink tunnel has been assessed adjacent to this property at the depth and on the alignment proposed and TII are satisfied that the assessed movements will not lead to structural damage and that the necessary clearance has been provided to this property.</p> <p>The Phase 3 assessment will be a more detailed building specific assessment. 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. Normally a Stage 3 assessment results in lower predicted settlement estimates than the Stage 2 assessment (which is more conservative). However in the event that building specific detail identifies that the building is more vulnerable to settlement than predicted at Stage 2, then the tunnel will need to be lowered to reduce any potential impacts. It should also be noted that TII will commit to monitor the building for settlement and to repair any damage caused by settlement arising from the advancement of the TBM.</p>	
2	Submission 2	2	<p>a) Metrolink has assessed the "Groundborne 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 client's building which is unacceptable.</p>	<p>EIAR 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. The prediction of groundborne noise during TBM passage for 70 St Stephen's Green building is 49 dB LASmax, which is above the 45 dB LASmax threshold, resulting in a temporary significant impact on the building for the limited duration of TBM passage (less than 2 weeks).</p> <p>Unfortunately, there are no effective methods available to reduce groundborne noise or vibration from the TBM at source. As a result, the principal mitigation measure to minimise effects on 70 St Stephen's Green will be advance public consultation and stakeholder engagement to reduce the significance of groundborne noise effects during construction so that your client is prepared for the passage of the TBM and resultant elevated noise 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 Appendix A14.6 of the EIAR).</p>	
3	Submission 2	2	<p>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). This drawing indicates MetroLink will be causing a 15mm settlement directly under the location of our client's building which is unacceptable. Settlements of this magnitude cannot be accommodated by the building's structure and will cause damage to foundations; basement; superstructure; facade and internal finishes. As previously stated the basement structure forms the waterproof envelope to our client's building and any damage would result in the ingress of water into the basement.</p>	<p>The eastern boundary of 70 St Stephens Green is just outside the 10mm contour and no structural impacts are assessed. However, despite being just outside the 10mm contour, TII will implement a Phase 3 assessment due to the building features noted in this response. Refer to response (1).</p>	

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4	Submission 3	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.	<p>EIAR 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. The predicted groundborne noise and vibration at the 70 St Stephen's Green building during railway operation is for:</p> <p>- Groundborne noise is 33 dB LASmax, which is below the 40 dB LASmax threshold.</p> <p>- Groundborne vibration is 0.008 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.</p> <p>As a result, TII have assessed that no significant impact is expected on the building as a result of Metrolink operation.</p>	
5	Submission 4	3	MetroLink has proposed to acquire the substratum land located under our client's building, which is outlined in drawing no. ML1-JAI-EIA-ROUT-XX-DR-Y-01096 (a copy is attached to this submission). This is unacceptable to our client, as the future potential to develop this prominent commercial site in the future will be damaged.	<p>TII note your concerns about the potential impact of MetroLink Project on the future potential development of your site.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	
6	Summary	3	In summary, our client requests that the route of the proposed MetroLink tunnels are diverted away from their current proposed location (under our client's building) to either below the public carriageway or buildings that will not be damaged or compromised by the presence of the tunnels located under.	<p>The proposed alignment is required in order to allow the tunnel to connect the proposed St. Stephen's Green station to the proposed Charlemont station having regard to ensuring the optimum operation of MetroLink. While there is an opportunity for minor amendments in the alignment within the Limits of Deviation, the analysis presented within the EIAR does not support the requirement for a realignment here - Please refer to the responses above for further details.</p> <p>The design includes for a limit of deviation which is required to allow for unforeseen obstructions and construction tolerances which may necessitate a change to the alignment. In the highly unlikely event that this were to occur, any resulting environmental impacts will comply with the limits set by the enforceable Railway Order.</p> <p>TII has carried out a comprehensive set of ground investigations in accordance with relevant guidelines and best practice. It has a high confidence that MetroLink can be constructed along the proposed alignment without requiring vertical or horizontal adjustment. However, in order to guard against rare and undetectable subterranean conditions that might interfere with construction, the Railway Order provides for limits of deviation (as have other railway authorisation since at least the 1840s). The impacts of potential changes within the Limits of Deviation are considered in the Wider Effects Report (Appendix A5.19).</p>	