

Submission No.			140		
Organisation Name or Name of Submitter			Jerdip Properties Unlimited Company (represented by Punch Consulting Engineers)		
Item No.	Section Ref.	Page No.	Observation Statement	TII Response	
RE: SUBMISSION ON THE METROLINK ON BEHALF OF JERDIP PROPERTIES UNLIMITED COMPANY IN RELATION TO PROPERTY AT THE ARTHUR COX BUILDING, 10 EARLSFORT TERRACE, DUBLIN 2, D02T380					
1	Cover letter	2	<p>Our client, Jerdip Properties Unlimited Company, welcomes the opportunity to make a submission on the Railway Order for the Metrolink line. Our client has a number of observations and concerns in relation to impact of the proposed Railway Order and the MetroLink project on its above property and would ask An Bord Pleanála fully review same.</p> <p>Our client also wishes to request that an Oral Hearing is held in respect of the Railway Order application so that the points raised within this submission can be further clarified and addressed at the hearing for the benefit of all parties. The proposal is of both national and local significance and accordingly warrants an Oral Hearing.</p>	<p>Thank you for the submission and request for Oral Hearing. We have reviewed the submission and provided response for the observations/ concerns raised in detail below.</p> <p>An overview of the Oral Hearing process is provided in the EIAR Chapter 8.9.2. The Board has confirmed that it intends to hold an Oral Hearing for this project.</p> <p>The purpose of the oral hearing will be to allow issues relevant to an application for approval be examined. The oral hearing can be attended by anyone, but only those that have made a written application may make an oral submission at the oral hearing. The oral hearing is managed by the An Bord Pleanála inspector.</p>	
2	1.0 Introduction (page 1 of PUNCH Memorandum)	5	We understand Earldev Properties Unlimited Company (EPUC), as building owner and landlord, may also make a submission to ABP in relation to the building. We request that both submissions are read in conjunction with each other. The most relevant parts of the EPUC submission concerning JPUC are outlined and further developed in Section 2.0 below.	Thank you for sharing this information. TII have reviewed both submissions and provided responses for the observations/ concerns raised by the Submitters.	
3	1.0 Introduction (page 2 of PUNCH Memorandum)	6	<p>It is essential that each of the points raised in this submission are addressed in full by TII. It is noted that the comments in this submission will expand following further engagement with TII It is vital to JPUC that the building remains fully operational during the works and cannot accept any interruption to its business.</p> <p>It is our belief that The Arthur Cox Building requires individual attention from TII as a standalone structure and we request that ABP condition same in any grant of the Railway Order.</p>	TII note JPUC request and prior to any commencement of construction are happy to engage further regarding your concerns. It should be noted that having regard to settlement risk, this building will be subject to a detailed Phase 3 assessment, referred to in EIAR Chapter 5, Appendix A5.17 Building Damage Report section 4.5, to ensure that any effects on the building are understood and mitigated. Please see response below to Item (12) for further details.	
4	1.0 Introduction (page 2 of PUNCH Memorandum)	6	<p>As the Headquarters of a leading firm of solicitors, the building has been designed and fitted out to a very high standard with acoustic treatments a principal design parameter. Hence, the potential noise and disruption from the proposed works is a huge concern that needs to be fully explained and addressed by TII to avoid negative impacts on our client's business.</p> <p>Similarly the impact of vibration on the building is of equal concern to our client and this issue must also be fully explained and addressed by TII as part of the process.</p>	<p>TII note your concerns in relation to the noise and vibration related potential impacts on your property.</p> <p>EIAR Appendix 14.5 Groundborne Noise and Vibration Blasting Modelling Results presents predicted groundborne noise and vibration levels during the construction phase of the project, with the results for 10 Earlsfort Terrace summarised below:</p> <ul style="list-style-type: none"><li>• The predicted level of groundborne noise during TBM passage at surface level is 50 dB LASmax, which is above the 45 dB LASmax threshold, resulting in a significant impact on the buildings occupants for the short duration of the TBMs passage which is estimated to be 2-weeks.</li><li>• The predicted level of groundborne vibration during TBM passage is 0.269 ms-1.75, which is lower than the VDV (Vibration Dose Value is a parameter that combines the magnitude of vibration and the time for which it occurs) Threshold Level of 1.6 ms-1.75, resulting in a not significant impact on the building.</li></ul> <p>Unfortunately, there are no effective methods available to reduce groundborne noise from TBMs at source. TII will liaise with Jerdip Properties Unlimited Company to ensure the timing of these impacts are known. The principal mitigation measures aimed at minimising impacts are as follows:</p> <ul style="list-style-type: none"><li>• Advance public consultation and stakeholder engagement can greatly reduce the significance of groundborne noise effects during construction, as building occupants would be prepared for the passage of the TBM and resultant elevated noise and vibration levels.</li><li>• 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).</li></ul>	

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5	1.0 Introduction (page 2 of PUNCH Memorandum)	6	Of particular concern is the fact that all drawings in the Railway Order relate to an old building layout on this site, which was demolished circa 2014 and does not take any account of the actual design and structure of the Arthur Cox Building. This is a concern as The Arthur Cox Building has complex and sensitive basement, pile and facade structures which must be carefully considered in the proposed tunnel design. We would expect The Arthur Cox Building to be shown on all relevant drawings and the correct building parameters used in all assessments of the tunnel design.	The assessments undertaken relate to the new building and the detailed information provided to TII in 2019. This included the bkd planning drawings and an inspection undertaken by ORS of the property (including the basements). This will be refreshed for the Phase 3 assessment (please refer to Item 12 below with regards to Phase 3 assessment process). The drawings to which your submission refers are the OS mapping.	
6	2.0 Technical Observations, point a (page 3 of Memorandum)	7	<b>a. What is the Tunnel detail design procurement approach i.e. client design or contractor design?</b>  i) A detailed design programme for the tunnel under the building is required.	The detailed design and construction programme (in so far as it relates to the Arthur Cox Building) will be provided once developed by the TII Contractor. Please also refer to response (10) below.	
7	2.0 Technical Observations, point a (page 3 of Memorandum)	7	ii) If the tunnel design is by the main contractor, TII to confirm how soon after the grant of the Railway Order a Main Contractor be appointed?	It is anticipated that the Contractor will be procured within 18 months of the grant of the RO. It should be noted it may be a further 60 months prior to the TBM being within the zone of influence of your building.	
8	2.0 Technical Observations, point a (page 3 of Memorandum)	7	iii) TII to confirm estimated construction programme from when Arthur Cox are likely to experience noise and vibration from the Tunnel Construction Works?	Tunnelling from St Stephen's Green to Charlemont is expected to take approximately 6 months, covering Q1 and Q2 of Year 7 Construction (see EIAR Appendix A5.2 Construction programme Including Tunnel Elements). Noise and vibration impacts from the advancement of the TBM beneath Arthur Cox building location will occur for a very short period of days (up to 2-weeks). Currently, a detailed timeline for TBM passage is not available as the appointed contractor(s) will prepare the programme for the TBM. Once the programme has been prepared, advance public consultation and stakeholder engagement will take place to prepare building occupants or the passage of the TBM and resultant elevated noise and vibration levels (see EIAR Appendix A5.1 Outline CEMP, Table 6.1 Tunnel Boring GNV1).	
9	2.0 Technical Observations, point a (page 3 of Memorandum)	7	iv) TII to confirm what information JPUC will receive prior to the Oral Hearing?	There are no plans to issue any further information prior to the Oral Hearing apart from these responses. However, TII are happy to engage in consultation to provide further detail as required and prior to construction commencement.	
10	2.0 Technical Observations, point a (page 3 of Memorandum)	7	v) Assuming the detailed design is by the Main Contractor, TII to confirm the extent to which the Main Contractor will be required to engage with JPUC during the detailed design process?	TII will engage a design team to prepare the detailed design for the proposed project. The construction of this design will be the responsibility of the main contractor. However, all designated designs will be independently checked and TII will accept the design. TII will provide the assurance to JPUC that the design and modelling, together with proposed instrumentation and monitoring is fit for purpose and will not result in impacts greater than that assessed in the EIAR. If monitoring is to be installed on or in your properties, then the methodology and timing of the installations will be agreed with JPUC together with any ongoing maintenance of the monitoring. The Contractor and TII will provide updates as required during the construction process. Additionally, condition surveys will be coordinated with JPUC including any close out condition surveys and the identification of any remedial measures needed. If required by JPUC TII will issue the Phase 3 Assessment details.	

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11	Technical Observations, point b (page 3 of Memorandum)	7	<b>b. Confirmation that a full copy of the detail design and construction package will be issued by TII in relation to The Arthur Cox Building.</b>  i) We expect to see a full copy of the detailed design and construction package which allows for an independent assessment to be carried out by JPUC as they wish. We request confirmation of timelines from TII for this but note this needs to allow sufficient time for our client to fully review the proposals.	TII would welcome a meeting with JPUC to further explore the details presented here and to collate the relevant information to educate the further assessment.  Specifically with regard to the point noted, TII will issue JPUC with the detailed Phase 3 assessment when completed. With regard to timeline, this will be confirmed once the main contract is let but likely to be approximately 24 -30 months after the grant of the RO.	
12	Technical Observations, point b (page 3 of Memorandum)	7	ii) It is vital for JPUC that the building is not damaged during these works and the extent of building damage suggested by TII in the Railway Order is not acceptable.	<p>This response here also relates to Items 14, 15, 17 and 20 below.</p> <p>The assessment of building damage follows an industry standard approach undertaken on tunnelling and underground projects around the world including on the Channel Tunnel Rail Link and Crossrail in London, the Dublin Port Tunnel and currently on High Speed 2 in England, and therefore that further assessment does not need to be delivered prior to the route being consented. The purpose of the Stage 1 and Stage 2a assessments has been to provide/ensure confidence that the Works will not induce unacceptable damage to buildings/structures along the Route. The primary objective has been to confirm that the structural integrity of each building/structure will not be compromised by the Works.</p> <p>EIAR Appendix A 5.17, Building Damage Report, covers the assessed impacts of construction generated ground movements and settlement on properties. Table 5-2 of this report shows that the building 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.</p> <p>TII does recognise the importance of your buildings and hence they are designated as special buildings which will move forward to further Phase 3 assessment at the detailed design phase. 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 over estimate the likely impact of construction generated ground movements.</p> <p>Ancillary features in each building/structure, which themselves do not contribute to the structural integrity of the building/structure, are considered in the subsequent Phase 3 assessment. The D&amp;B Contractor is responsible to further investigate the sensitivities of each building/structure to identify those elements within the building/structure curtilage that may not contribute to the structural integrity of the building/structure itself, but will most likely in themselves be sensitive to the excavation and construction processes.</p> <p>In each instance, engaging with the building/structure owner (or their delegated representative) the D&amp;B Contractor will be responsible for identifying further mitigations that will further reduce the potential for damage if needed. These mitigations might relate directly to the excavation and construction processes (at source measures), or they might relate to a direct protection of the non-structural elements for which damage related concern remain.</p> <p>The Phase 3 assessment is undertaken to minimise the impact of the tunnelling operation beneath your property. Please also refer to response 14 below.</p>	

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13	Technical Observations, point b (page 4 of Memorandum)	8	iii) The efficient running of the business operations of The Arthur Cox Building is of paramount importance to JPUC. Whilst some disruption in terms of noise and vibration is likely, these levels cannot be such that they affect the company's daily operations. We would request that TII provide detailed reassurances on these matters.	<p>Noise and vibration impacts from the advancement of the TBM beneath Arthur Cox building will occur for a very short period of approximately 2 weeks, as referred to in Chapter 14: Groundborne Noise and Vibration, section 14.6.1.1 Tunnel Boring, with the impacts described in response 16 below.</p> <p>To mitigate impacts, advance public consultation and stakeholder engagement will take place which will 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 (see Table 11.70 of EIAR Chapter 11 Population and Land Use).</p> <p>The impact on your commercial activity due to Groundborne Noise and Vibration as a result of tunnelling activities following mitigation will be negative, slight and short term to medium term</p>	
14	Technical Observations, point c (page 4 of Memorandum)	8	<p>c. Details and frequency of proposed condition surveys for The Arthur Cox Building by TII, both in advance of and during the construction works as well as during operational phase.</p> <p>i) In the Damage Assessment Report of Building document on <a href="https://www.metrolinkro.ie/">https://www.metrolinkro.ie/</a>, it places the Arthur Cox Building (B-238) in Damage Category B (Refer to Appendix A) . This cannot be accepted by JPUC and will likely affect the buildings basement, frame and facades which in turn affects the operations of the business.</p> <p>ii) The query relates to visual condition surveys of the building prior to and during construction works. There must be photographic condition surveys carried out by TII/Main Contractor to ensure any potential damage to the building is accurately recorded.</p> <p>iii) It is expected that the condition surveys continue post construction and in the tunnel operational stages and request frequency of these surveys to be confirmed by TII.</p> <p>iv) We request this information from TII as soon as possible to ensure the integrity of the building is maintained during all phases of the works.</p> <p>v) We request TII to confirm when guidelines regarding the process for remediation will be released, should remediation be required. It is our understanding these guidelines are under development by TII based on information from <a href="https://www.metrolinkro.ie/">https://www.metrolinkro.ie/</a> . We reiterate that damage to the building cannot be accepted but we need to understand the guidelines nonetheless.</p>	<p>TII would respond to the points raised as follows:</p> <p><b>Response to point i):</b> Slight damage is predicted at the Arthur Cox building (B-238) following the Refined Phase 2a Damage Assessment. This building has been identified as a 'special' building and will be subject to a detailed assessment (Phase-3 assessment) and appropriate control measures will be implemented to protect the building. Please refer to Item 12 above. Please note that any damage identified as caused by the advancement of the TBM will be repaired.</p> <p><b>Response to point ii):</b> TII note and agree, this is as planned.</p> <p><b>Response to point iii):</b> Condition surveys will commence before the construction phase, during (as required) and after the construction phase is complete. Long term impacts during the operational phase are not anticipated and so there is no requirement for further condition surveys at this point.</p> <p><b>Response to point iv):</b> TII agree that the surveys and assessment are to be undertaken in time such that the integrity of the building is maintained. This is TII's stated position.</p> <p><b>Response to point v):</b> TII do not intend to put in place a Property Owners Protection Scheme for Commercial Properties along the MetroLink route. To protect commercial properties, TII contractors appointed to carry out the works will, with the agreement of the owners of such properties, commission chartered building surveyors to carry out a precondition survey of commercial properties. In the event that it is determined that damage has occurred. TII's contractor will be required to commission a follow up survey to confirm the extent of the damage and confirm if the damage has been caused by MetroLink works. Where property damage is confirmed to have been caused by MetroLink works the property concerned will have recourse to MetroLink project insurances.</p>	

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15	Technical Observations, point d (page 4 and 5 of Memorandum)	8&9	<p><b>d. Vertical settlement of the existing structure at The Arthur Cox Building from the proposed works.</b></p> <p>i) The predicted settlement is a concern from available information on <a href="https://www.metrolinkro.ie/">https://www.metrolinkro.ie/</a>. The settlement contours on Volume 4, Chapter 20- Fig 20.16, sheet 29 of 30 (Refer to Appendix B), suggest settlement of 40-45mm in the calculated settlement trough. We request details from TII on how they established this deflection data.</p> <p>ii) There appears to be no evidence of undertakings on <a href="https://www.metrolinkro.ie/">https://www.metrolinkro.ie/</a> to confirm the quality of the rock at the tunnel level beneath The Arthur Cox Building. We request that geophysical surveys are carried out by TII on the rock at tunnel level from the existing basement. 2d Resistivity and Seismic Refraction surveys are suggested to determine the rock mass characteristics.</p> <p>iii) If a dense rock with little fractures is encountered during this testing, this potentially magnifies the noise and vibration levels through the building which is a concern. This would have further detrimental impacts on the operations of our client's business and we request detailed analysis of this issue by TII.</p>	<p>Please also refer to Item 12 above. The assessment details are given in the Chapter 4 of the Damage Assessment Report of Buildings and Other Assets.</p> <p>The settlement contours shown on Figure 20.16 of Appendix B is based on Phase-1 assessment with very conservative (absolute worst case) tunnelling volume loss parameters and its purpose is to define the boundaries for the buildings for subsequent assessments. However, Phase 2a has been carried with refined (but still conservative) tunnelling volume loss parameters with the consequent reduction in the greenfield settlements (to less than 30mm). Further, the Phase 2a assessment is based on the ground movements at the formation level of the basement (underside of the basement slab) - for the Damage Categorisation. The method of assessment is fully explained in EIAR Appendix 5.17. In summary, the settlement contours shown on Figure 20.16 of Appendix B are based on Phase-1 assessment with very conservative (absolute worst case) tunnelling volume loss parameters; 1.5% when the tunnel is with less than half the tunnel diameter of rock cover and 0.75% when the tunnel is with greater than half the tunnel diameter. The purpose of Phase-1 assessment is to define the boundaries for the buildings for subsequent assessments. However, Phase 2a has been carried with refined (but still conservative) tunnelling volume loss parameters; 1.0% when the tunnel is with less than half the tunnel diameter of rock cover and 0.5% when the tunnel is with greater than half the tunnel diameter - Phase 2a assessment shows less than 16mm settlement under these buildings with Damage Category 0 (Negligible). The details of assessment are given in Section 4 of the Damage Assessment Report. The protected buildings have been identified as 'special' buildings and will be subject to a detailed assessment (Phase-3 assessment) and appropriate control measures will be implemented to protect the building if considered necessary - unlikely in this case as already categorised as in the Negligible damage category. Phase-3 assessment will utilize the site specific ground model, particularly that the tunnel face is in rock strata in this area, which will result in significant reduction in the volume loss due to tunnelling compared to that was assumed in the Phase 2a assessment and thus reduction in the greenfield ground movements.</p> <p>Detailed ground investigations (GI) have been undertaken to produce the geological profile of the proposed MetroLink route and this data has supplemented existing desk based GI to give an excellent understanding of the geotechnical conditions. This GI data and existing available desk based data has been used in the assessment. At detailed design the contractor will undertake further investigation as necessary to verify the ground conditions and as required to validate the basis of assessment be prescribed as part of the recommendations from the Phase-3 assessment works.</p> <p>Arthur Cox Buildings is identified for Phase-3 assessment. The Phase-3 assessment will utilize the site specific ground model, particularly that the tunnel face is in rock strata in this area, which will result in significant reduction in the volume loss compared to that adopted for the Phase-2a assessment for tunnelling works - this will lead to lower damage category.</p> <p>Any additional ground probing works etc required to validate the basis of assessment will be prescribed as part of the recommendations from the Phase-3 assessment works.</p> <p>The basements are known and the separation from these structures to the crown of the tunnel has been used in the current assessment. This will be updated at detailed design incorporating final design alignment.</p>	

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16	Technical Observations, point e (page 5 and 6 of Memorandum)	9&10	<p><b>e. Vibration and Noise Impacts under the existing structure at The Arthur Cox Building from the proposed works.</b></p> <p>i) There is a concern in relation to the identified noise and associated disruption contained within <a href="https://www.metrolinkro.ie/">https://www.metrolinkro.ie/</a>. A "Very High Adverse (significant)" residual impact is identified in the documentation. This is not acceptable to JPUC and will be detrimental to our client's daily operations. TII should access this further and mitigate this impact.</p> <p>ii) Whilst this impact is noted as being "short term", there is no clarity or estimate provided beyond this in relation to the duration of these works and associated negative impacts. We request TII to confirm duration of the proposed works and associated impacts on our client's building</p> <p>iii) We request An Bord Pleanála to condition an independent noise and vibration assessment of the building based on the individual site specifics and the building form itself.</p> <p>iv) It is assumed that these noise levels of 50dB (Refer to Appendix C) are calculated on a Phase 1 Greenfield base level. The building and its secant piles are founded in rock. The concrete frame is also a very dense form of construction. If the rock is dense, there is a very efficient direct transmission path for noise and vibration through the building. Therefore, we are concerned noise levels could be greater than calculated and we need this concern to be robustly allayed by TII prior to commencement of work.</p> <p>v) The building has been designed and fitted out to a very high standard with acoustic treatments a principal design parameter. This is to reduce background noise in the building. If noise is transferred up through the building, the existing acoustic fabric in the facades and internal partitions may magnify acoustic levels within the building. We need this concern to be robustly investigated and concerns allayed by TII prior to commencement of work.</p> <p>vi) Vibration levels appear low in the documentation 0.269 VDV/day. Based on item e (iv) above, we are concerned vibration levels could be greater than calculated and we need this concern to be robustly investigated and concerns allayed by TII prior to commencement of work.</p>	<p>With regard to the points raised, TII would respond as follows:</p> <p>(i) TII acknowledge your concern and will put measures in place to reduce impacts to your property as much a reasonably practicable. It is correct that there is potential for significant effects from groundborne noise from the TBM operation along the route of the tunnel without mitigation (Section 14.5.1, Chapter 14 Groundborne Noise and Vibration). Unfortunately, there are no effective methods available to reduce groundborne noise or vibration from TBMs at source, but mitigation measures can be implemented to minimise impacts (please refer to Items 4 and 13 above).</p> <p>(ii) Please refer to Item 8 above.</p> <p>(iii) The assessment results presented in Appendix 14.5 Groundborne Noise and Vibration and Blasting modelling results present predicted levels of groundborne noise and vibration during construction and operation of the named building. No additional assessment is considered necessary.</p> <p>(iv) At Arthur Cox's offices the level of TBM noise at surface level is shown as 50 LAmaxS in the EIAR contours, and operational noise is shown as 35 LAmaxS. The effect of two basements and piles down to the rockhead is an increase of 5 LAmaxS for TBM noise to 55 LAmaxS and 4dB for operational noise to 39 LAmaxS. For TBM noise the threshold of significant effects for offices is 45 LAmaxS. More relevant is that the duration of significant effect will approximately 2-weeks depending on the rate of advance in this area. For operational noise the impact remains in the "not significant" category.</p> <p>For TBM the VDV is 0.269 ms-1.75 day at ground level increasing to 0.398 ms-1.75 with the two basements and piles. The threshold of significant effect is 1.6 ms-1.75.</p> <p>No further mitigation is necessary for operational effects. No mitigation is available for the TBM groundborne noise anticipated at ground level and within the basement as detailed above except through consultation with the owner/occupier of the timings of the TBM arrival, anticipated duration of the TBM progress and programming.</p> <p>(v) and (vi) Please refer to response to point (iv) above</p>	
17	Technical Observations, point f (page 6 and 7 of Memorandum)	10&11	<p><b>f. Confirmation that the tunnel can be constructed in the proposed position/depth considering the depth of the existing rock, existing piles and formation level of the double basement at The Arthur Cox Building.</b></p> <p>i) We have concerns about the proposed tunnel level relative to that of the double basement structure and secant piled wall of 10 Earlsfort Terrace. Refer Appendix D of this submission for drawings illustrating the close proximity of the tunnel to the existing basement structure.</p> <p>ii) The proposed tunnel is approximately 6m below the lowest structural element and 5.35m below the lowest pile level. This proximity of significant engineering works to the underside of the structural support for The Arthur Cox Building is of serious concern.</p> <p>iii) The existing double basement is waterproofed with a Rascor White Tank Injection System and relies solely on the reinforced concrete structure to prevent water ingress. Hence, this form of waterproofing is very sensitive to ground movements and the design of the tunnel must take this into account.</p> <p>iv) The basement structure is below the water table level and the basement slab is very sensitive to vibrations and any adverse cracking to the slab would cause significant water ingress issues.</p> <p>v) We request that TII comment on each of the items above and confirm the integrity of the building will not be compromised by the proposed works</p>	<p>Please refer to Items 12, 15 and 16 above.</p> <p>Having regard to potential settlement, the Phase-3 assessment will utilize the site specific ground model, particularly that the tunnel face is in rock strata in this area, which will result in significant reduction in the volume loss due to tunnelling and thus reduction in the greenfield ground movements - this will lead to a lower damage category. Any requirements to impose restrictions to the tunnel vertical alignment (upwards) will be considered as part of Phase-3 assessment.</p> <p>This building has been identified as a 'special' building and therefore will be subjected to a detailed assessment (Phase-3 assessment) which will utilize the site specific ground model and the structural details/features of the building to determine any mitigation measures required to protect the building and these measures will be agreed with the buildings owners and their advisers prior to commencement of tunnelling in the area. Any requirements to lower the tunnel vertical alignment will be considered as part of Phase-3 assessment.</p>	



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18	Technical Observations, point g (page 7 of Memorandum)	11	<p><b>g. Written confirmation from TII of any anticipated negative impacts on the building and its tenants at 10 Earlsfort Terrace during the construction phase.</b></p> <p>i) PUNCH request TII to issue details and timelines of any negative impacts for JPUC on the normal execution of their business operations during construction phase of the works.</p>	<p>TII confirm that there will be a temporary but very high adverse (significant) impact for groundborne noise at 10 Earlsfort Terrace during TBM passage. Where eligibility is established, there will be an opportunity to apply the TII Airborne Noise and Groundborne Noise Mitigation Policy (EIAR Appendix A14.6). Additionally, advance public consultation and stakeholder engagement will be carried out and TII will continue to communicate timelines and construction details as the project progresses. TII are happy to discuss the application of the TII Airborne Noise and Groundborne Noise Mitigation Policy further.</p> <p>The impact on your commercial activity due to Groundborne Noise and Vibration as a result of tunnelling activities following mitigation will be negative, slight and short term to medium term (Table 11.70, Chapter 11 Population and Land Use). Currently, a detailed timeline for TBM passage is not available as the appointed contractor(s) will prepare the programme for the TBM once they have been appointed. TII will continue to communicate with landowners as the project progresses.</p> <p>The EIAR fully details all impacts during construction phase of the MetroLink. Please refer to, inter alia, EIAR Appendix 5.17 for Ground movement impacts, EIAR Chapter 11 Population and Land Use, EIAR Chapter 13 Airbourne Noise and Vibration and Chapter 14 for Groundborne Noise and Vibration.</p>	
19	Technical Observations, point h (page 7 of Memorandum)	11	<p><b>h. Written confirmation from TII of any anticipated negative impacts on the building and its tenants at The Arthur Cox Building during the operational phase.</b></p> <p>i) PUNCH request TII to issue details and timelines of any negative impacts for JPUC on the normal execution of their business operations during the operational phase of the works.</p>	<p>No significant noise and vibration effects are predicted at 10 Earlsfort Terrace during the operational phase (Section 14.5.2, Chapter 14 Groundborne Noise and Vibration). Business operations of JPUC will not be negatively impacted during the operational phase (Section 11.7.2, Chapter 11 Population and Land Use).</p> <p>The EIAR fully details all impacts during operational phase of the MetroLink. Please refer to, inter alia, EIAR Chapter 11 Population and Land Use, EIAR Chapter 13 Airbourne Noise and Vibration and Chapter 14 for Groundborne Noise and Vibration. Once operational, demand will vary through the day and week, with different service levels provided to meet varying demand. Services will operate between 05:30 and 00:30 every day. Service frequency is reduced on weekends and public holidays to reflect lower demand during these periods.</p>	
20	Technical Observations, point i (page 8 of Memorandum)	12	<p><b>i. Confirmation that that the structural integrity of the building at The Arthur Cox Building will not be affected in any way by the proposed works during the construction and operational phase.</b></p> <p>i. In the Damage Assessment Report of Building document on <a href="https://www.metrolinkro.ie/">https://www.metrolinkro.ie/</a>, it places the Arthur Cox Building (B-238) in Damage Category B . We note that because of the foundations proximity to the tunnel the building is classed as an "At Risk" building and that the Phase 3 assessment be undertaken. This Phase 3 assessment, as we understand it, will be a detailed assessment of the Ground Movement Response for the Arthur Cox Building specifically. We request timelines of when this will be carried out by TII.</p> <p>ii. JPUC will not accept building damage and the integrity of the building and particularly the basement cannot be compromised in any way. The basement is designed as part habitable for staff of the building and cannot allow any water ingress.</p> <p>iii. The superstructure and facades cannot be damaged. Should remediation be required to the superstructure, the work practices and daily operations of the company will be hugely affected.</p>	<p>TII would respond to the points raised as follows:</p> <p><b>Response to point i):</b> Please refer to Items 11, 12, 14, 15 and 17 above.</p> <p><b>Response to point ii) and iii):</b> The damage predicted is outlined in Items 12 and 14 above. TII commit to undertaking the condition surveys pre and post construction and will remediate damage caused such that the building basement, superstructure and facades are not compromised.</p>	

Submission No.			140		
Organisation Name or Name of Submitter			Jerdip Properties Unlimited Company (represented by Punch Consulting Engineers)		
Item No.	Section Ref.	Page No.	Observation Statement	TII Response	
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21	Conclusions (page 8 of Memorandum)	12	i) The project is of both Local and National significance and accordingly warrants an Oral Hearing. Our client wishes to request that an Oral Hearing is held in respect of the Railway Order application, so that the points raised within this submission can be further clarified and addressed in detail at the hearing for the benefit of all parties.	Thank you for the request for Oral Hearing. The oral hearing process is managed by the An Bord Pleanála. Please refer to response to Item 1 above.	
22	Conclusions (page 8 of Memorandum)	12	ii) We wish to develop and resolve each of the observations made in this submission in advance of any future Oral Hearing and request immediate engagement with TII accordingly. We request that ABP condition same in any grant of the Railway Order.	TII are available to meet in advance of the Oral hearing.	
23	Conclusions (page 8 and 9 of Memorandum)	12&13	iii) JPUC primary concern is the effect the proposed works will have on the business operations of its company. As a leading firm of solicitors, its operations cannot be negatively impacted by the proposed Metrolink works. We would request immediate engagement with TII to allay these concerns.	TII are available to meet in advance of the Oral hearing.	
24	Conclusions (page 9 of Memorandum)	13	iv) There are serious concerns based on information received that the building will be damaged by the proposed Metrolink works. We would request immediate engagement with TII to allay these concerns.	Thank you for the submission. We have reviewed your submission and provided responses for the observations/ concerns raised in detail above. TII are happy to engage further with JPUC regarding your observations and concerns raised in this submission.	