

Submission No.			194	
Organisation Name or Name of Submitter			Ambassador_Millenium Theatre Company (MTC)	
Item No.	Section Ref.	Page No.	Observation Statement	TII Response
MTC Cover letter - Re: Application by the National Roads Authority (operating as TII) for the Railway (Metrolink Estuary to Charlemont via Dublin Airport) Order [2022] Case Number. ABP-302010				
1	1. Introduction 1.7	4	There has been little substantive engagement by TII or discussion on mitigation measures prior to the submission of its application, and consequently MTC has had little time to consider the possible implications of the proposed development and to agree such mitigation measures in advance.	All mitigation measures have been carefully identified and assessed. Efforts were made to contact the landowner on more than one occasion prior to submission of the RO. TII continues to engage with landowners relative to their submissions
2	1. Introduction 1.8	4	MTC would welcome constructive engagement over the coming months so that the concerns outlined in our Report, are addressed by the TII as soon as possible.	TII have responded to all issues raised below but remain available if clarifications are require.
3	2. Proposed Development by TII 2.2	5	From what we can establish the proposed tunnel sits between around 16-1 8m below the ground level as it runs from Parnell Street, beneath the Ambassador Theatre. However, there are extensive below ground vaults at the Ambassador, and consequently the tunnel could be a little as 12m below the vaults in place. This does not appear to have been noted by TII in its application documentation. This raises immediate issues arise in connection with the possible construction impacts on the building structure at the Ambassador.	<p>The Ambassador Theatre was surveyed in 2007 and the basements as noted were picked up on that survey together with the existing condition. These surveys have educated the damage assessment undertaken and TII are content that the assessment undertaken to date is robust, incorporating conservative parameters.</p> <p>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.</p> <p>EIAR Appendix A 5.17, Building Damage Report, covers the assessed impacts of construction generated ground movements and settlement on property. Table 5-2 of this report shows that your building has been assessed as falling within the "Slight damage" category currently (building reference B -81), an explanation for which can be found in Table 4-4 of the aforementioned report.</p> <p>Despite no structural impacts (only cosmetic damage) being assessed, as your building has been designated a "special" building it will therefore be subject to a further detailed assessment. Refer to EIAR Appendix A5.17.</p> <p>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>Details on the subsequent Phase 2b and Phase3 building damage assessments are presented in the EIAR Appendix A 5.17, Building Damage Report.</p>
4	2. Proposed Development by TII 2.3	5	In addition to the construction impacts the potential long term zone of influence of the tunnels extends over the entirety of the Ambassador Theatre as set out on the drawing below.	The assessment noted above has taken all predicted movement in to account. Please note that once operational no further settlement impacts are anticipated.
5	2. Proposed Development by TII 2.4	6	The application, if granted, will also include powers for TII to acquire compulsorily land or rights in, under or over land or any substratum of land specified in the order: we understand that this will include substratum lands at the Ambassador although the MTC has not been advised of the extent of the lands this will impact.	TII wrote to the Millennium Theatre Company (letter reference CAP_ML_1175_48 dated 20th September 2022) and included all details with regard to the extent of subsurface acquisition proposed. Please refer to drgs ML-P 305 E-F and ML-5E-U16 included in this property pack.
6	2. Proposed Development by TII 2.5	6	In summary MTC is very concerned that the proposals submitted by TII will have significant adverse impacts on buildings and on the provision of services at the Ambassador, and that these impacts have not been addressed by the TII in the proposals as currently submitted to the Board.	<p>The impacts on the Ambassador Theatre have been full assessed and included with the EIAR.</p> <p>The assessment of airborne noise during the construction phase for works being undertaken at O’Connell Street Station has been presented within Chapter 13 Airborne Noise and Vibration of the EIAR.</p> <p>The Ambassador Theatre also falls within the study area for groundborne noise and vibration, and calculations of groundborne noise and vibration during the construction and operation phases have been carried out and presented in Appendix 14.5 to Chapter 14 Groundborne Noise and Vibration of the EIAR.</p> <p>As noted in response (1) the impacts of ground movement has been assessed and included within EIAR Appendix A5.17 Building Damage Report.</p>

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7	3. MTC Property and Substratum Lands at the Ambassador 3.1,3.2	6	The application drawings submitted by TII indicate the area of Ambassador Theatre substratum lands may be compulsorily acquired as part of the development. The Ambassador Theatre MTC has advised that it has received no prior notice from TII, and is unaware of, the extent of substratum lands impacted by the Railway Order.	Substratum land take is detailed drawing ML-P 305 E-F and that we are willing to engage with them in repect to the impact the substratum acquisition on any furture developments that they are planning.
8	3. MTC Property and Substratum Lands at the Ambassador 3.3	6	The Ambassador Theatre / MTC has advised that it is unaware of, and has received no information from TII on, the impact of any such acquisition on possible future developments at the Ambassador. [	<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. It is inappropriate and unworkable to produce this policy at this stage because it would have to be in broad terms that deal not only with the current RO proposal and any contingencies that might arise from the Board seeking revised designs or new conditionality as part of the RO application process.</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>
9	4.1 Impacts of Proposed Development on Ambassador Theatre - Noise & Vibration (a)	7	It is not clear that the applicant has assessed the Ambassador Theatre; however, we would submit, having regard to the national importance of the structure, (as confirmed by the NIAH), that this needs assessment needs to be urgently carried out by the applicant.	The relevant assessments have been undertaken and clearly articulated in the EIAR. The status and use of this building is known and has been used to assess impacts. Please refer to response (6).
10	4.1 Impacts of Proposed Development on Ambassador Theatre - Noise & Vibration (b)	8	Threshold limits set out by the applicant are dependent on Building Categorisations which need to be clarified— we believe this may need reconsideration and assessment + appropriate mitigation accordingly.	<p>The assessment approach does not need reconsideration.</p> <p>In Chapter 14 Ground borne Noise &amp; Vibration, Section 14.2.1 Appraisal Method for the Assessment of Impacts presents the assessment methods undertaken. It is acknowledged that the assessment is complex due to the consideration of groundborne noise and vibration arising from different activities such as the progress of the TBM, mechanical excavation etc. For the purposes of assigning a criteria for Groundborne Noise and Vibration, please refer to table 14.3. The Ambassador Theatre was considered a theatre in this assessment and so was assigned a noise assessment threshold of 25 dB LAmax,S above which groundborne noise impacts would be considered significant. For the purposes of assessing the progression of the TBM, the assessment criteria were different, due to the very short duration of this activity at any single location. As a result a threshold is proposed for groundborne noise from the passage of a TBM is 5dB LAmax,S greater than the thresholds for other sources shown in Table 14.3 i.e. 30 dB LAmax,S. In the assessment of vibration, a number of different assessment thresholds were used as outlined in section 14.2.1.2. The Ambassador Theatre was considered a particularly sensitive to groundborne noise and vibration impacts along with buildings like libraries, lecture theatres, auditoria, hospitals, churches, schools.</p>

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11	4.1 Impacts of Proposed Development on Ambassador Theatre - Noise & Vibration (c)	8	The applicant notes “Unfortunately, there are no effective methods available to reduce groundborne noise or vibration from TBM at source” and notes such impacts are of a Temporary nature (while TBM passes). This is a significant issue of concern in connection with services at the Ambassador.	Unfortunately, there are no effective methods are available to reduce groundborne noise or vibration from TBMs at source. However the following mitigation measures are proposed in the EIAR aimed at minimising the effects are as follows: <ul style="list-style-type: none"><li>• 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.</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 Appendix A14.6 of the EIAR).</li></ul> It is important to note that the advancement of the Tunnel Boring Machine will be for a very short duration over a matter of days. TII and their contractors will engage with the Millennium Theatre Company regarding the potential impacts of these works and the proposed programme for the same once this information is available.
12	4.1 Impacts of Proposed Development on Ambassador Theatre - Noise & Vibration (d)	8	The application references some mitigation measures primarily around Consultation and pre-Planning of activities; however, MTC has confirmed that no such consultations have taken place, and we are unaware of any mitigation measures.	As noted in Response 1, TII have made a number of efforts to engage with the Owners but were unsuccessful in getting a response from the site owner. TII are happy to engage further with Millennium Theatre Company regarding the potential impacts of these works and the proposed mitigation measures for Ambassador Theatre.
13	4.1 Impacts of Proposed Development on Ambassador Theatre - Noise & Vibration (e)	8	The construction of the deep underground O'Connell St. station is in close proximity to the Ambassador Theatre, and it is unclear to what extent this has been assessed for potential impacts on the Ambassador Theatre.	<b>Construction Phase</b> Firstly, the assessment of airborne noise from above ground construction activities at O'Connell Street station, as presented in Chapter 13 of the EIAR, has predicted airborne noise levels at Ambassador Theatre below the construction noise threshold level of 75 dB LAeq,T and are therefore considered Not-Significant.  Secondly, the Ambassador Theatre was also assessed for potential groundborne noise and vibration impacts from the construction of the O'Connell St. station. Groundborne Noise and Vibration and Blasting modelling results are given in Appendix 14.5 of the EIAR.  The predicted LAmax,s during mechanical excavation (from O'Connell St Station) at the Ambassador Theatre has a value of 21 dB while the Threshold Level for this building is 25 dB, resulting in no significant impact on the buildings operation arising from proposed mechanical operation.  Levels of groundborne vibration during construction at the Ambassador Theatre are predicted to be 0.262 m/s-1.75 during TBM passage and 0 m/s-1.75 during mechanical excavation, which are below the VDV Threshold Level for this building of 1.0 m/s-1.75, resulting in a not significant impact on the buildings operation.  <b>Operational Phase</b> During railway operation the predicted LAmax,s at Ambassador Theatre is 34 dB while the Threshold Level for this building is 25 dB, resulting a significant impact on the buildings operation in the absence of mitigation. However, in recognition of the sensitivity of the Gate Theatre and the Ambassador Theatre it is proposed in Section 14.5.2 of the EIAR, that for the operational phase specific mitigation measures will be to use a Floating Slab Track system between Chainage 16+400 to Chainage 16+600, resulting in a residual impact considered not significant.  Groundborne Vibration from Railway Operation is predicted to be 0.008 m/s-1.75, which i.e. below the threshold value of 0.8 m/s-1.75 resulting a not significant impact on the buildings operations.
14	4.1 Impacts of Proposed Development on Ambassador Theatre - Noise & Vibration (f)	8	The applicant should be requested to incorporate and extend the "Floating Slab Track" for the entire Ambassador Theatre and well beyond as mitigation and to protect the building and to mitigate the impact on services at the Ambassador.	According to Chapter 14 Ground-borne Noise and Vibration, Table 14.47, Floating Slab Track will be used between Chainage 16+400 to Chainage 16+600. As the Ambassador Theatre building is located at Chainage 16+440 we consider that this length and positioning of the Floating Slab Track is adequate.

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15	4.2 Impacts of Proposed Development on Ambassador Theatre - Potential Settlement & Building Damage Assessment	8	The Ambassador building is a protected structure dating back to the 1700’s. It is a masonry construction, typical at the time, and is highly sensitive to movements. Such potential movements (particularly if differential settlements of the order per the Phase 1 were to realise) have the potential to cause damage across the Ambassador, and also impact on service delivery. We submit that the applicant should be requested to carry out a more detailed Phase 3 building damage impact assessment immediately, prior to any planning decision by ABP on the overall application.	Please refer to response (3). The Ambassador Theatre due to the age and importance of the building it has been designated "special" and hence a further (Phase 3) assessment will be undertaken by the main works contractor. This further assessment will pick up on the building’s condition close to the time when the building may be impacted
16	4.2 Impacts of Proposed Development on Ambassador Theatre - Potential Settlement & Building Damage Assessment	9	It is essential that the Ambassador Theatre is consulted and kept well informed on outcomes and potential impacts of these further assessments together with details on any proposed mitigation measures for agreement.	Please refer to response item (1) above.
17	4.3 Impacts of Proposed Development on Ambassador Theatre - Monitoring	9	Subject to satisfactory resolution of the above noise, vibration and settlement issues, we recommend that a comprehensive suite of settlement, noise and vibration monitoring equipment be installed at and within the Ambassador building to: i. Assess current background levels to inform appropriate “Trigger” levels ii. Monitor during the Construction Works iii. Monitor during Operation Appropriate “trigger” levels on a traffic light system basis should be established and agreed based on background levels together with best practice and industry standards referenced and predicted within the EIAR. The instrumentation should be logged in "real-time" basis and if/when trigger levels are exceeded, ALL Stakeholders are contacted, and pre-agreed mitigation proposals implemented.	TII will procure its contractors to develop Instrumentation and Monitoring Plans in tandem with Monitoring Action Plans in accordance with EIAR Appendix 5.1. These plans will help assure that the risks associated with tunnelling and station excavations impacting any OPW property are appropriately managed and controlled. TII will provide details of any monitoring proposed by the contractor at detailed design stage and agree the methodology of installation to the OPW property. TII will provide advance notice of any attendance that the monitoring contractor may require. With regard to the timing of monitoring specific to ground movement TII will ensure that it is commenced 3 months prior to the construction activities that would give rise to the settlement. However, as these construction activities may complete years prior to the Metrolink operational phase the termination of monitoring will be linked to a determination that settlement has effectively ceased, allowing a removal of the instrumentation. Operational groundborne noise and vibration monitoring will be undertaken during the commissioning phase to demonstrate the efficacy of the mitigation measures and to ensure thresholds are not breached. The monitoring systems will employ suitable trigger level alerts and notification in case of breach of threshold.
18	4.4 Impacts of Proposed Development on Ambassador Theatre - Consultation	9	MTC and its advisors have not been consulted by the applicant in any meaningful way prior to the application, and have had little time to review the potential consequences and implications of this significant project. It asks the Board to direct TII to engage immediately in discussions in connection with the Ambassador Theatre, and to set out proposals and mitigation measures on potential impacts to the buildings and services at the Ambassador. MTC request to be kept informed by ABP throughout the remainder of the application process, reserving the right to seek further information and comment on the construction and operation of the Metrolink.	Please refer to response item (1) above.
19	5. Impacts of Proposed Development on Ambassador Theatre - Engagement with TII	10	Notwithstanding the fact that TII has not engaged in any meaningful way on such matters with the MTC reading the Ambassador Theatre to date, MTC would welcome engagement with TII, even at this late stage in the process. MTC confirms it will facilitate engagement in advance of any potential Oral Hearing the Board may wish to convene. MTC would be grateful if the Board would also encourage and invite TII to engage regarding the Ambassador Theatre and to set out clear proposals to mitigate potential impacts to the building and to ensure and protect the continuing provision of services at the Ambassador Theatre.	Please refer to response item (1) above.