

Submission No.			057		
Organisation Name or Name of Submitter			Declan Ryan		
Submitted by Anthony Marston (MIPI, MRTPI), Marston Planning Consultancy, 23 Grange Park, Foxrock, Dublin 18, on behalf of Declan Ryan					
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1	Intro	1	Our client owns and resides at no. 9 Harcourt Terrace which is a Protected Structure (RPS 3569, NIAH 5011 0470). Harcourt Terrace is the only formally composed Regency Terrace in the city. The ten houses on the western side of the terrace were laid out with single storey annexes separating the pairs of houses. No. 9 is located close to the end of the terrace near the Grand Canal, and includes a pedestrian link to its rear. The main basis of this submission is to ensure the Structural Integrity of our clients' property is maintained both during the construction and the operation of the Proposed Development.	TII acknowledge the architectural and historical significance of the property and recognise that the property is also designated as a protected structure. Hence the property has been included in the impact assessment and presented in the EIAR Chapter 26 (Architectural Heritage), Table 26.25: "BH-572 - 9 Harcourt Terrace - Three-storey, two-bay semi-detached house with rendered façade and with ionic pilasters at ground-floor level; single storey bay to side. - RPS 3569 DCC; NIAH 50110470" According to the assessment there will be no direct or indirect impacts on architectural heritage during the Construction or Operational Phase of Metrolink.	
2	How will the Metro impact no. 9 Harcourt Terrace (a Protected Structure)?	1	We note that the Metro tunnel alignment drawings (Drawing no. ML1-JAI-ARD-ROUT_XX-DR-Y-03095) (Plan Drawing no. ML-RO 306 E-O) indicate the extent of the Metro tunnel as passing under the front curtilage and entrance steps to our clients' property. Their property is located between the St. Stephens Green and Charlemont stations on the route. The cross-section AA on this same drawing, which is located at the footpath along the northern side of the Grand Canal, indicates the top of the Proposed Metro tunnel as being c. 18m below ground level. We note that the nearest cross section to this to the north, at Earlsfort Terrace, on Drawing no. ML1-JAI-ARD-ROUTXX-DR-Y-03094 (Plan Drawing no. ML-RO 306 D-E) also indicates the top of the Proposed Metro tunnel as being c. 18m below ground level. It is reasonable therefore to conclude that the top of the tunnel will pass c. 18m below the front of our clients' property. Their property is indicated as Property ML6E-U33 within the Property Detail mapping (Dublin City Council) on Drawing no. ML1-JAI-BOR-ROUT_XX-DR-Y-01097 (Plan no. ML-P 306 E-O). The blue shading that indicates the extent of the proposed acquisition of substratum land indicates the majority of our clients' house as being within this area. Our client is significantly concerned about the legal implications of this matter, and on how this would impact upon the value of their property.	The substratum land take has been generated by creating a limit of deviation (LOD) ranging from 5 metres vertically upwards and 10 metres downwards to 15 metres laterally for the tunnel alignment. Substratum land take is shown on the Property Drawings submitted with the RO application and on Figure 21.1. of the EIAR Chapter 21 (Land Take). Rule 17 introduced by Section 48 of the Planning and Development (Strategic Infrastructure) Act 2006, states: 'The value of any land lying 10 metres or more below the surface of that land shall be taken to be nil, unless it is shown to be of a greater value by the claimant'. For MetroLink project, the depth of tunnel will vary along the route but it is expected that the average depth will be approximately 24m from ground level to track level. In the vast majority of cases the subsoil can be acquired without affecting the above ground property. For 9 Harcourt Terrace property the following data are shown on the individualised property details plan (please refer to Plan drawing no. ML1-JAI-BOR-ROUT_XX-DR-Y-03779, ML6E-U33): • Ground level to crown of tunnel (m) - 17.5; • Ground level to track (m) – 24.2. EIAR Chapter 21 (Land Take), Section 21.6.1.2, outlines the Compensation for Compulsory Purchase process. Under the Transport (Railway Infrastructure) Act 2001 (as amended) (the 'Act') upon commencement of the Railway Order (RO), TII will be authorised to acquire compulsorily any land or rights in, under or over land or any substratum of land specified in the RO, and, for that purpose, the RO shall have effect as if it were a compulsory purchase order (as referred to in Section 10(1) of the Local Government (No.2) Act 1960 (as inserted by Section 86 of the Housing Act, 1966) which has been duly made and confirmed) with modifications. Accordingly, TII is authorised to serve a notice to treat pursuant to the provisions of the Housing Act, 1966, including Section 79 thereof. TII also has the right to enter onto other lands for the purposes of carrying out the works permitted under the RO in certain circumstances. The acquisition of the various specified rights and interests in land and property, is necessary in order to ensure the delivery of the MetroLink project in its entirety. Further information can be obtained from the MetroLink Compulsory Purchase Order Guideline document (September 2022) which can be found on-line at: https://www.metrolink.ie/media/0jlpbyso/metrolink_cpoguideline_final_september-2022.pdf	
3	How will the Metro impact no. 9 Harcourt Terrace (a Protected Structure)?	2	We note that the Environmental Impact Assessment Report (EIAR) (section 14.2.1.2) indicates that groundborne vibration from construction and operation of the proposed Project has the potential to have an adverse effect on nearby sensitive receptors, such as no. 9 Harcourt Terrace. We would consider that any residential property on the alignment, and where that property is a Protected Structure, should be considered as a highly sensitive receptor. We note with interest that Protected Structures are not identified or referenced within Chapter 14 given the potential for vibration to impact upon the structural integrity of such protected buildings of architectural importance.	The full noise and vibration levels experienced at the buildings potentially affected by the Metrolink construction and operation (including 9 Harcourt Terrace) are presented in Appendix 14.5 Groundborne Noise and Vibration Blasting Modelling Results. The assessment in Chapter 14 presents groundborne noise and vibration impacts on buildings and humans, with prediction results presented from a selection of representative receptors, during construction and operation. As stated in Chapter 14 tables 14.5 and 14.8 separate threshold levels were considered for Standard buildings vs Listed or potentially vulnerable buildings for blasting activities (Table 14.5) and for a range of buildings constructions, including protected and historic buildings, for construction vibration from sources other than blasting (Table 14.8). According to the assessment results presented in Appendix 14.5 for 9 Harcourt Terrace the calculated vibration levels are below the lowest threshold of 3mm/s for structural damage for any building type (Table 14.8) during TBM passage and also during operation of the Metrolink. The predicted level of vibration for blasting for 9 Harcourt Terrace is 0.9 mm/s, much lower than the 3mm/s threshold for vulnerable buildings, resulting in no impact on the building structure. Please see item 1, above with regard to the protected structure status and assessment.	

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4	How will the Metro impact no. 9 Harcourt Terrace (a Protected Structure)?	2	We would question the reasoning behind the EIAR stating that as the Tunnel Boring Machine (TBM) is moving through the lengthy construction process that its impacts are transitory, and should be considered with a lower threshold therefore. We note that the EIAR identifies the potential for the tunnel boring machine that will bore the tunnel under Harcourt Terrace has the potential to cause vibration and groundborne noise impacts within 100m of the under construction tunnel if not mitigated. The EIAR outlines that there is an inability to mitigate these noise and vibrations from the TBM at source.	As stated in response (3) the vibration levels during TBM Passage will have no significant impact on 9 Harcourt Terrace building and will be for a very short duration. Regarding groundborne noise impact during TBM Passage, as indicated in Appendix 14.5 the predicted level of groundborne noise during TBM Passage is 49dB, which is just above the Threshold Level of 45 dB presented in EIAR Chapter 14.2.1.1 Groundborne Noise - TBM advancement, resulting a significant impact on the buildings occupants for the limited duration (maximum 2 weeks) during TBM passage. Any potential impacts will be mitigated by way of clear communications with the property owner advising of the progression of the TBM for the short duration during which the occupants of the property could be effected.
5	How will the Metro impact no. 9 Harcourt Terrace (a Protected Structure)?	2	We note that Table 14.28 identifies that the predicted groundborne noise during the boring is predicted to have a noise impact of 49dB, which is above the indicated 45dB level that will have a High Adverse Magnitude of Significant Impact that according to the EIAR will be noticeable to all and disturbing over a number of days. The EIAR indicates that the groundborne vibration during the TBM passage is not considered to be significant. However, we note that this has not been considered having regard to the fact that our clients' property is a Protected Structure. We note that the extent and length of duration of the boring along the route within 100m of no. 9 Harcourt Terrace is unclear. The EIAR states only that it will occur for a very short period of days, and we would question this as a reliable basis for the assessment of the impact on our clients' property. The EIAR outlines that there are no effective methods to reduce groundborne noise or vibration at source. The only two mitigation measures appear to be solely based on temporary rehousing, or additional glazing, which would be inappropriate to be undertaken in relation to our client's Protected Structure.	Please refer to response (3) - the protected nature of your buildings is accounted for in the assessments. As noted in response item (4), the duration of the TBM passage will be for a number of days only, up to a maximum of two weeks. Unfortunately, there are no effective methods available to reduce groundborne noise or vibration from TBMs at source. The principal mitigation measures aimed at minimising impacts are as follows: <ul style="list-style-type: none"> • 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. • 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). Most building occupants will be able to tolerate the groundborne noise without issue, however it is recognised that some individuals may find its effect intolerable and will wish to vacate the property during the period of time it takes for the TBM to move away from their property. In these circumstances, mitigation may be required, on a case-by-case basis as set out in Appendix A14.6.
6	How will the Metro impact no. 9 Harcourt Terrace (a Protected Structure)?	3	Table 14.49 indicates the residual noise and vibration impact of the Proposed Development on no. 9 Harcourt Terrace. This is outlined as groundborne noise that will have a high adverse significant impact on the residential use of our clients' property for an undefined length of time. This from an EIAR perspective is defined as being a temporary impact, which is defined under the EPA guidelines as an effect that lasts for up to a year. Our client has profound concerns about the usability of their property during this length of construction period, and the impact of such a lengthy process on the structural stability and any potential damage of their property. The mitigation measures proposed fail to address these in any way. The predicted groundborne impacts during the operation of the Project are predicted to be not significant. However, due to the continual nature of the impact, and change to the environment in terms of vibrations and noise, must be considered as being negative in the context of no. 9 Harcourt Terrace.	As stated above in response (4), the advancement of the TBM will affect the property for a very short duration up to a maximum of 2 weeks. During this period the TBM may be audible in the building, but the predicted noise levels are not sufficiently high to effect the usability of the building. As outlined in response (3) above, the level of vibration is low and will not affect the structural integrity of the building. As a result, no mitigation is required.

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7	How will the Metro impact no. 9 Harcourt Terrace (a Protected Structure)?	3	It is also notable that the airborne noise impacts will be occurring at the same time as the groundborne impacts and it is predicted that these will be moderate to significant during construction. The combination or cumulative impact of these issues, and other construction impacts, of adjacent works, will have a profound negative impact on the amenity and structural stability, and has the potential to cause damage to our clients' property.	<p>The impact due to airborne noise presented in Chapter 13, Table 13.68 is the potential impact of construction works without any mitigation measures. Following this assessment, mitigation measures are proposed in line with the TII Airborne and Groundborne Noise Mitigation Policy including specific measure for the Charlemont Compound. These will include the use of 4m high construction site hoarding instead of standard 2.4 m high.</p> <p>Following these mitigation measures construction airborne noise levels at 9 Harcourt Terrace are expected to be below the threshold value of 65 dB (for more details please see Table 13.90 of the EIAR and Appendix 13.7 Construction Phase Modelling).</p> <p>With regard to structural integrity, EIAR Appendix A5.17, Building Damage Report, covers the assessed impacts of construction generated ground movements and settlement on property. The settlement contours calculated were used to undertake the buildings damage assessment. Please refer to building AB-40 in Table 5-4 of this appendix.</p> <p>Currently, the building is assessed at Damage category 1 - Very Slight. The damage categories are described in detail in section 4.3.2 of the EIAR Appendix A 5.17, Building Damage Report. All buildings will be subject to pre-construction surveys and post construction surveys and any building damage caused will be repaired by TII.</p> <p>It is also important to recognise that as your property is designated a 'special' building (designated protected structure) and hence will be further assessed (Phase 3) at the detailed design stage to verify the impacts. The Phase 3 assessment will take account of final design and construction methodology details. 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. The results of this refined assessment typically show that earlier assessments are conservative and overestimate the likely impact of construction generated ground movements.</p> <p>Regarding architectural heritage please refer to response item (1) above.</p>
8	Conclusions	3	<p>We have set out under this submission our client's concerns relating to the impact on their property in terms of structural and other damage; and its structural integrity, and noise impacts that would negatively the amenity of the property during the construction and operation phase of the Proposed Development.</p> <p>We respectfully submit that the groundborne impacts, in combination with air borne impacts will be unacceptable during the construction process, and it is critical that appropriate mitigation is achieved that does not disenfranchise the enjoyment and structural integrity and setting of our clients' property, which is a Protected Structure. Our client is concerned that any significant construction activity, particularly where the alignment is immediately adjacent to, albeit under the Protected Structure, has the potential to cause long term irreversible and costly damage to the historic fabric and structural integrity of their property.</p>	<p>As stated above no significant impact is predicted on the building structural integrity.</p> <p>Furthermore, as 9 Harcourt Terrace building is a designated protected structure and, as referred to EIAR Chapter 26, where the built heritage structures are in the vicinity of the proposed tunnelling these buildings will be included in the Property Owner Protection Scheme (POPS), whereby they are to have condition surveys carried out prior to the commencement of tunnelling and again after completion. In those cases where the POPS survey identifies that damage has occurred as a result of the tunnelling works repairs are to be to be prepared in accordance with method statements prepared by the POPS Conservation Architects and approved where necessary by the MetroLink Project Conservation Architect (PCA). Further detail on the POPS process can be found in Chapter 26 (Architectural Heritage), Chapter 21 (Land Take) and Chapter 11 (Population & Land Use) of the EIAR.</p> <p>The only identified noise impact on the building occupants is represented by the noise produced by the TBM Passage for a short duration of up to two weeks. It is important to note that this slight exceedance in noise levels will not affect the "usability" of the building. TII will liaise with the owner to ensure the timing of these impacts are known.</p>
9	Conclusions	3	<p>We submit that the proposed development has the potential to and noting from recent tree clearance activity within the site will have negative impacts on the Protected Structure which will be detrimental to the existing fabric thereof and is contrary to National conservation policy as well as the conservation policies of the Dublin City Development Plan relating to Protected Structures.</p> <p>It is critical that the Finalised Scheme will take into account the need to uphold residential amenity by way of noise and vibration impact, and seek to further mitigate the additional noise and vibration impacts and their potential impacts on our client's property in a manner that is appropriate for its status as a Protected Structure.</p>	<p>Appropriate mitigations have been included in the EIAR to protect both the structural integrity and amenity of the property. Please refer to responses above.</p>