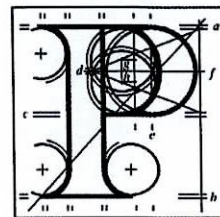


Our Case Number: ABP-314724-22

Your Reference: Charlemont and Dartmouth Community Group
(CDCG)



**An
Bord
Pleanála**

MacCabe Durney Barnes
20 Fitzwilliam Place
Dublin 2
D02 YV58

Date: 24 January 2023

Re: Railway (Metrolink - Estuary to Charlemont via Dublin Airport) Order [2022]
Metrolink. Estuary through Swords, Dublin Airport, Ballymun, Glasnevin and City Centre to
Charlemont, Co. Dublin

Dear Sir / Madam,

An Bord Pleanála has received your recent submission (including your fee of €50) in relation to the above-mentioned proposed Railway Order and will take it into consideration in its determination of the matter.

The Board will revert to you in due course with regard to the matter.

Please be advised that copies of all submissions/observations received in relation to the application will be made available for public inspection at the offices of the relevant County Council(s) and at the offices of An Bord Pleanála when they have been processed by the Board.

More detailed information in relation to strategic infrastructure development can be viewed on the Board's website: www.pleanala.ie.

If you have any queries in the meantime, please contact the undersigned. Please quote the above mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,



Niamh Thornton
Executive Officer
Direct Line: 01-8737247

Tel
Glao Áitiúil
Facs
Láithreán Gréasáin
Ríomhphost

Tel
LoCall
Fax
Website
Email

(01) 858 8100
1800 275 175
(01) 872 2684
www.pleanala.ie
bord@pleanala.ie

64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

20 Fitzwilliam Place t: + 353 1 6762594
Dublin 2 f: + 353 1 6762310
D02 YV58 e: planning@mdb.ie
w: www.mdb.ie

MACCABE DURNEY BARNES

PLANNING | ENVIRONMENT | ECONOMICS

Our Ref: 2093 Dartmouth Square West Submission

An Bord Pleanála,
64 Marlborough Street,
Dublin 1,
D01 V902

16th January 2023

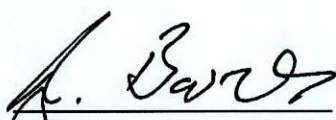
Re: Railway (Metrolink-Estuary to Charlemont via Dublin Airport) Order 2022

Dear Secretary,

We wish to make a submission for our client Charlemont & Dartmouth Community on behalf of Dartmouth Square West residents of properties nos.1. 3. 5. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. Dartmouth Square West, Ranelagh, Dublin 6, in respect of the public consultation for the Railway (MetroLink-Estuary to Charlemont via Dublin Airport) Order [2022]. Please find enclosed a copy of our client's submission and the prescribed fee of €50.

We trust all is in order. Please do not hesitate to contact us should you have any queries.

Yours sincerely


Jerry Barnes
Director
MACCABE DURNEY BARNES

AN BORD PLEANÁLA
LDG- 060523-23
ABP- _____
16 JAN 2023
Fee: € 50 Type: cheque
Time: 16.38 By: hand

MetroLink Submission

Dartmouth Square West Submission

13 January 2023



MACCABE DURNEY BARNES



20 Fitzwilliam Place, Dublin 2,
D02YV58, Ireland



Phone. +353 1 6762594



planning@mdb.ie



www.mdb.ie

Document status					
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Job Title: MetroLink Rail Order					
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0	For Client Review	MB/SB	JB	JB	06/12/22
1	Revisions following Client Review	MB	JB	JB	09/01/23
2	Final Version	MB	JB	JB	13/01/23

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1. INTRODUCTION

1.1 Background

This submission is made on behalf of the Charlemont and Dartmouth Community Group (CDCG) of Residents of Dartmouth Square West for the residents of **nos. 1, 3, 5, 7, 8,9, 10, 11, 12, 13, 14, 15, 16 Dartmouth Square West** in relation to the MetroLink Railway Order application which was submitted to An Bord Pleanála and is available for inspection from 07/10/2022 until 16/01/2023. The residents are listed in Appendix I of this submission. The application is made by the National Roads Authority (operating as Transport Infrastructure Ireland) for the (Metrolink-Estuary to Charlemont via Dublin Airport) Order [2022]. The local residents listed in Appendix I are all supportive of this submission.

This is one of three submissions made by CDCG, which relate to different aspects concerning the MetroLink project. The submissions are as follows:

- Submission 1 (General) – This associated submission relates to general policy and strategic matters and area wide concerns.
- Submission 2 (Dartmouth Road) – This associated submission relates to the concerns of the residents on Dartmouth Road in relation to impacts during the construction and operational phases of the project.
- Submission 3 (Dartmouth Square West) – **This subject submission** relates to the concerns of the residents on Dartmouth Square West relating to impacts during the construction and operational phases of the project.

1.2 Strategic Planning Issues

The strategic planning issues are covered in the associated general submission by CDCG. That submission concludes the link between St. Stephens Green and Charlemont cannot be justified in planning terms. Furthermore, it undermines the business case for the entire project. For this reason, the associated submission requests that the section between Tara Street and Charlemont be omitted from the Railway Order and that a new railway order application for the section between Tara Street and St. Stephens Green be submitted.

1.3 Structure of Submission

The submission has been structured in the following manner:

- Section 1 Introduction: This section
- Section 2 Key elements: Considers the development as it relates to Dartmouth Square West
- Section 3 Project History: In so far as it relates specifically to Dartmouth Square West
- Section 4 Submission Points: Highlights the key points of this submission
- Section 5 Summary of Points and Requests: Summarises main points and details amendments sought

2. KEY PROJECT ELEMENTS

2.1 Overall Project

The main elements of the project are detailed in the EIAR and summarised in the associated CDCG general submission. However, the key overall project related elements that are of importance to the subject submission are:

- The Charlemont Station;
- In the opening year operations, there will be 20 trains operating per hour at a frequency of three minutes between trains;
- The proposed Project is designed for a maximum of 20,000 passengers per hour per direction (pphpd) in the peak hour;
- Operation of services for 19 hours per day, 365 days per year; and
- The predicted construction period of 9.25 years.

2.2 Charlemont Station, Turnback Tunnel and Intervention Tunnel

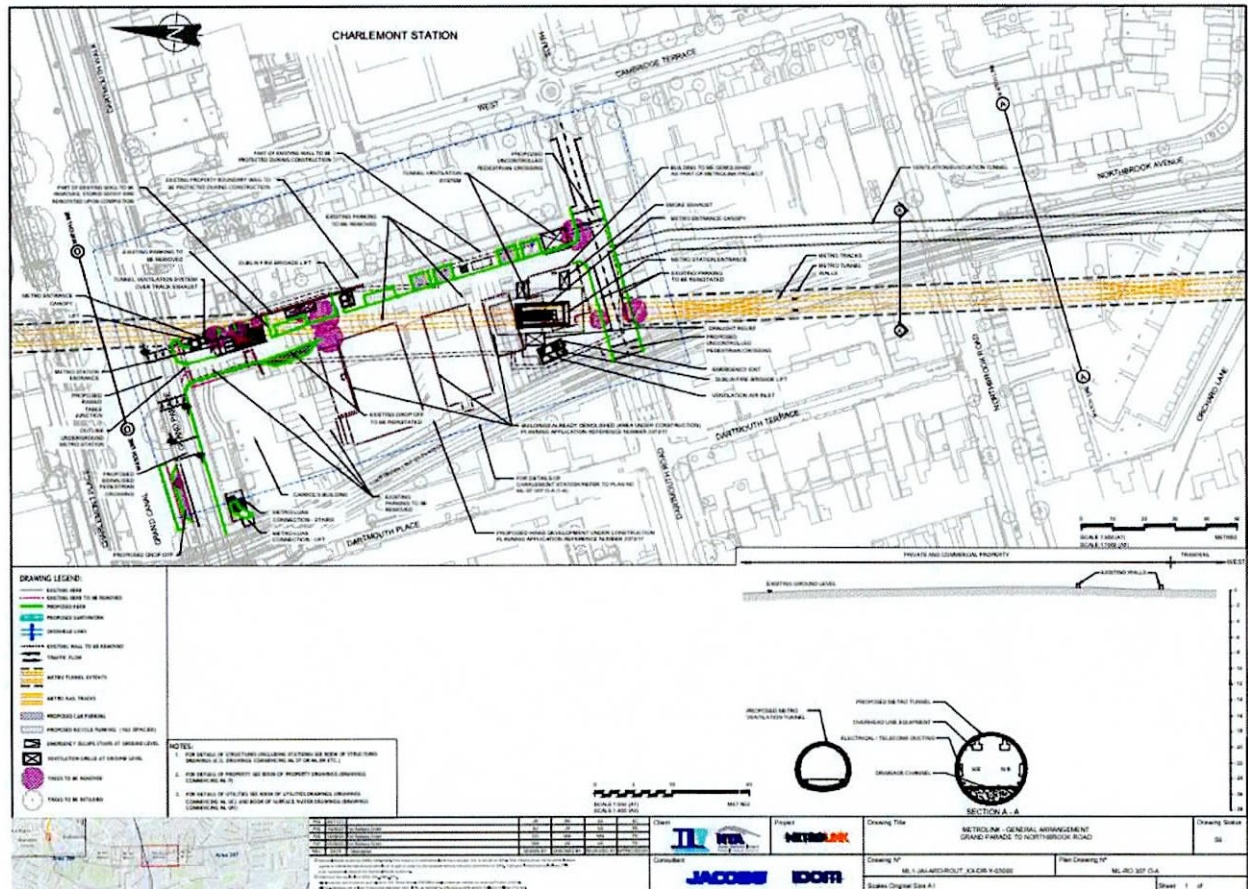
2.2.1 Operational Phase

The rail line from the north would pass through a single bore tunnel and would curve southwards and pass under Harcourt Terrace and the Grand Canal before reaching Charlemont Station located on a site south of the "Carroll's Building" on Grand Parade and bounded on the west side by the Luas Green Line. This site, currently under development by a third party, is where Charlemont Station will be built. Charlemont Station would provide a connection with the Luas Green Line and an improved pedestrian link to the Charlemont Luas Stop. The roof slab of the station will project under Dartmouth Road.

Two entrances are proposed, one at the northern end onto Grand Parade and the other at the southern end onto Dartmouth Road. An escalator would serve each of the entrances. There would be three levels to the station, including a concourse, mezzanine and platform level. One lift accessing the surface, concourse and platform and street levels is proposed at the northern end of the site. Two Dublin Fire Brigade (DBF) lifts are proposed. The track level is at 22m below ground level and platforms will be 65m long and 6.5m wide. A total of 162 parking spaces are proposed, most of which are at the southern entrance.

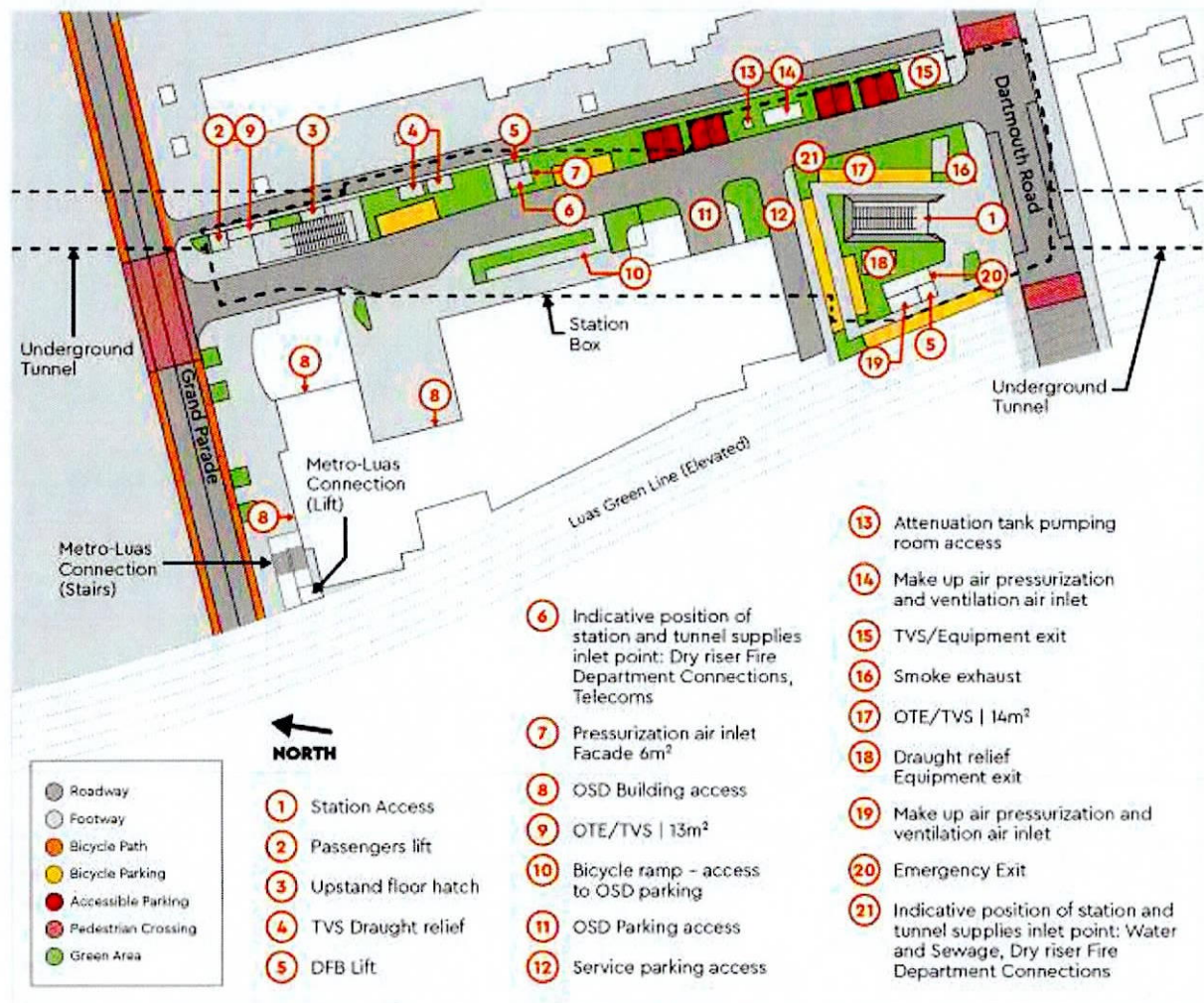
There is a mews laneway running to the rear of the houses on Dartmouth Square West, part of which would be permanently acquired for the purposes of the station and part of which would be acquired temporarily. Substratum acquisition is also proposed.

Figure 1: Charlemont Station Subsurface Layout



The City Tunnel continues southwards, terminating 360m beyond Charlemont Station to provide a sufficient length of track to enable trains to be turned back in a north bound direction. A parallel evacuation and ventilation tunnel will also be constructed alongside this section of tunnel that will connect back to Charlemont Station. The Station alignment at Charlemont is illustrated in the figure above and the design is illustrated in the figure below.

Figure 2: Charlemont station Surface Layout

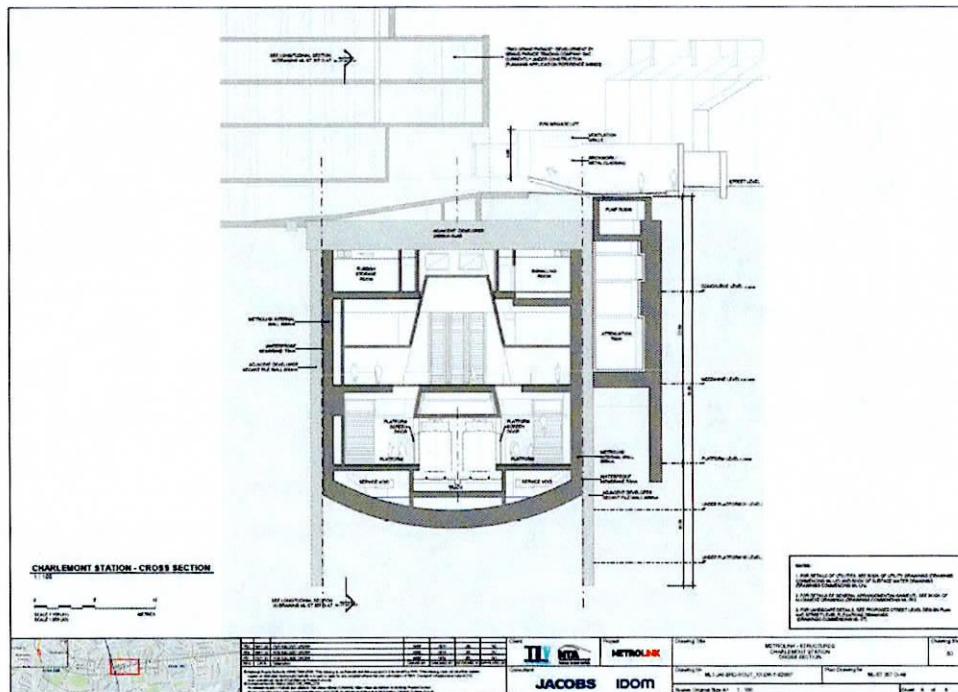


It can be seen that there are pedestrian crossing zones on Grand Parade, a stairs in front of the Carrolls Building (a protected structure) which will provide stair access to Luas, and further pedestrian crossings on Dartmouth Road.

An intervention tunnel is proposed for emergency evacuation from the tunnel south of Charlemont Station. This will be a bored tunnel, utilising concrete spray construction methodology.

The drawing in the figure below illustrates the cross section of the station, and that the platform level is c.21 m below ground. There is plant element below this at a depth of up to 31m below ground. The slab of the station box, which was constructed as part of the office development, is c.4m below ground level.

Figure 3: Railway Order Cross Section



The very close relationship with the houses on Dartmouth Square West is illustrated by this section.

2.2.2 Construction Phase

The EIAR indicates that the Charlemont Station is dependent upon the structural deck which is currently being constructed pursuant to the planning permission for a commercial development at No.2 Grand Parade under P.A Reg. Ref: 2373/17 (ABP PL29S.300873) and subsequently amended under PA Reg. Ref 4755/19. Section 5.10.13 of the EIAR states that this structure along the bored secant piles *"..will form the central section of the Charlemont station box roof slab."* The station will be a cut and cover construction along Dartmouth Road and a top down approach for the remainder of the site.

The EIAR also illustrates the extent of the construction compound in Figure 5.1 of the EIAR Appendix 5.

Figure 4: Construction Compound



Section 5.10.13 of the EIAR indicates that the proposed construction works site and compound includes the full width of laneway to the rear of the Dartmouth Square West from Grand Parade to Dartmouth Road. However, Appendix 5.2 of the EIAR outlines the construction schedule and it indicates that the Charlemont Station Compound/Deep Station has a 102 month construction period from Q3 of Year 1 to Q4 of Year 9.

3. AREA CONTEXT

3.1 Immediate Surroundings

This submission relates to houses no. 1, 3, 5, 7 – 16 Dartmouth Square West, all dwellings fronting Dartmouth Square West are protected structures. The square is also designated as an ACA. Immediately to the rear of the properties of Dartmouth Square West, proposed construction works are anticipated. The properties' rear laneway will form the basis of the temporary site at Charlemont and Dartmouth Square, in addition a portion of the laneway has been earmarked for permanent acquisition. Figure 5 below illustrates the location of the properties subject of this submission.

Figure 5: Properties subject of this submission demarcated in orange (Source: Myplan.ie)



The houses on the western side of Dartmouth Square are covered by zoning Objective Z2 *To protect and/or improve the amenities of residential conservation areas*; the lands to the rear are covered by zoning Objective Z1 *To protect, provide and improve residential amenities* and objective Z6: *to provide for enterprise and employment* in both the current Dublin City Development Plan 2022-2028. Currently, there is controlled parking on either side of Dartmouth Square West. Dartmouth Square is also covered by the Dartmouth Square ACA.

Figure 6: Draft Dublin City Development Plan 2022-2028 Objectives Map



3.2 Property Details

The figure below illustrates the properties affected. The following table categorises the properties in terms of land take and impact zone. Properties are either the subject of permanent acquisition, temporary acquisition or a substratum compulsory purchase. All fall within the 50m zoned, which qualifies them for TII's Property Owners Protection Scheme (POPS). All properties are significantly impacted by the proposed project, as detailed in sections 5 and 6 of this submission.

Figure 7: Book of Reference



The following table can be cross referenced with the map in the table below.

Table 1: Matrix of Works Impacting Properties

Number	Owner	Permanent Take	Temporary Take	Substratum Take	Other Properties Affected *
1	Niall Parson 1 Dartmouth Square West Ranelagh Dublin 6	✓ ML70-A3/A4	✓ ML70-T4/T8	✓ ML70-U13	✓
3	John Ryan & Grace Maguire 3 Dartmouth Square West Ranelagh Dublin 6	✓ ML70-A3/A4	✓ ML70-T4/T8	✓ ML70-U13	✓
5	Conor Power & Lorraine Mulligan 5 Dartmouth Square West Ranelagh Dublin 6	✓ ML70-A3/A4	✓ ML70-T4/T8	✓ ML70-U13	✓
7	Geraldine O'Connell Cusack and Geraldine Ann Cusack 7 Dartmouth Square West Ranelagh Dublin 6	✓ ML70-A3/A4	✓ ML70-T4/T8	✓ ML70-U13	✓

Number	Owner	Permanent Take	Temporary Take	Substratum Take	Other Properties Affected *
8	Caroline O'Connor & Michael Lillis 8 Dartmouth Square West Ranelagh Dublin 6	✓ ML7O-A3/A4	✓ ML7O-T4/T8	✓ ML7O-U13	✓
9	Teresa Reid & Denis McLoughlin 9 Dartmouth Square West Ranelagh Dublin 6	✓ ML7O-A3/A4	✓ ML7O-T4/T8	✓ ML7O-U13	✓
10	Muiris O'Dwyer & Helena Kelly 10 Dartmouth Square West Ranelagh Dublin 6	✓ ML7O-A3/A4	✓ ML7O-T4/T8	✓ ML7O-U13/U17	✓
11	Leo Crehan & Anne Crehan 11 Dartmouth Square West Ranelagh Dublin 6	✓ ML7O-A3/A4	✓ ML7O-T4/T8	✓ ML7O-U13/U16	✓
12	Herbert Mulligan & Deirdre Mulligan 12 Dartmouth Square West Ranelagh Dublin 6	✓ ML7O-A3/A4	✓ ML7O-T4/T8	✓ ML7O-U13/U15	✓
13	Mary Keating 13 Dartmouth Square West Ranelagh Dublin 6	✓ ML7O-A3/A4	✓ ML7O-T4/T8	✓ ML7O-U13/U14	✓
14	Elizabeth Vandenberghe & Godfrey Gillett 14 Dartmouth Square West Ranelagh Dublin 6	✓ ML7O-A3/A4	✓ ML7O-T4/T8	✓ ML7O-U12/U13	✓
15	John Conway and Orlaith McCarthy 15 Dartmouth Square West Ranelagh Dublin 6	✓ ML7O-A3/A4	✓ ML7O-T4/T8	✓ ML7O-U13/U10	✓
16	Angela & Manuel Ryan 16 Dartmouth Square West Ranelagh Dublin 6	✓ ML7O-A3/A4	✓ ML7O-T4/T8	✓ ML7O-U8/U13	✓

The book of reference does not differentiate between the affected properties in the permanent acquisition of the laneway.

3.3 Carrolls Building Planning History

3.3.1 (P.A Reg. Ref: 2373/17)

A planning application was submitted for an extension to the rear of the office building at Grand Parade in early 2017 under P.A Reg. Ref: 2373/17 (ABP PL29S.300873). Further information was submitted in relation to a number of matters including the MetroLink station box under the development (see figure below). Condition 3 of the decision required the developer to enter into an agreement with TII/NTA in relation to certain matters, including *"to accommodate the potential development, construction and operation of a metro or light railway on, at, or near the site of the approved development."*

Figure 8: Proposed Station Box (Drawing No.162123-8104)



3.3.2 P.A Reg. Ref: 2380/17

An application for the construction of 4 no. 3 storey over basement, four bedroom houses and demolition of existing building on the site of 0.154 ha at No.19A, and 19-25 Dartmouth Road was made in 2017, but was subsequently withdrawn. This area now forms part of the station complex where it fronts onto Dartmouth Road. The applicant was the same as that for the commercial development at the Carrolls Building.

3.3.3 P.A Reg. Ref: 4755/19

Planning permission was sought and granted for revisions to the parent permission for the office extension at Grand Parade (P.A Reg.Ref:2373/17). It included for revisions to the basement, including omission of certain elements of the commercial development. No reference was made to the Metro enabling works and the construction of the station box in this application.

3.3.4 Judicial Review and Legal Agreement

Judicial Review proceedings were taken by residents of Dartmouth Square West against the decision of An Bord Pleanala to grant permission [High Court Record Number 2019/345JR] in the planning appeal relating to P.A Reg. Ref: 2373/17. This was subsequently resolved out of court. A number of the parties to this submission were party to a legal agreement between the NTA, TII and residents which was entered into in relation to certain matters.

4. CONSTRUCTION IMPACTS

4.1 Introduction

This section highlights the principal construction points that are of concern to Dartmouth Square West residents appended to this report. The group is generally supportive of the MetroLink project but has significant concerns regarding the construction and operational aspects of the project at Dartmouth Square West. The preceding sections have demonstrated there are a range of issues that must be considered by An Bord Pleanála.

This construction impacts will arise from

- The extreme depth of the excavations in very close proximity to their houses
- The proximity of construction rigs and piling associated with the construction of the station box
- The proximity of tunnel with TBM passing close to their houses
- The loss of the laneway during the construction period

4.2 Noise and Vibration

4.2.1 Methodology

This issue is covered by Chapters 13 and 14 of the EIAR. Chapter 13 considers airborne noise and vibrations, and Chapter 14 considers ground borne noise and vibrations.

Noise from surface works required to construct Metrolink stations includes:

- Works associated with Tunnel Boring Machine (TBM) portals;
- Overground sections of rail and trackwork; (not applicable to Charlemont)
- Utility works;
- Overground structures and buildings including depots;
- Road works; and
- Construction traffic.

In relation to noise impact resulting from the construction compounds, the EIAR states at 13.2.5.1.3:

*Appendix 1 "It is important to note that calculation of specific construction noise levels during the Construction Phase is **limited to information available at EIAR stage**. Whilst the phasing of works, location of activities, plant items and work sites have been progressed to detailed stages as part of this EIAR, the **nature of the source is dynamic in nature and will vary over the course of the proposed Project at any one location subject to site conditions, work scheduling, contractor proposals and potential updated technology and methodologies**.*

*Appendix 2 **Construction noise levels will fluctuate** at any one location over the full duration of the proposed Project given the variations in the items above on a week to week or month to month basis. The approach undertaken therefore is to review the likely significant effects across the proposed Project based on the extent of information that is available.....It is important to note on the basis of the above, the construction noise calculations undertaken as part of the assessment are used to identify the **likely significant effects** and inform the requirement for noise mitigation and the approach for controlling and*

managing significant effects. Should the project be approved, prior to the commencement of any construction works, a detailed noise assessment for each work site will be undertaken based on the most up to date information for each."

We consider this to be a serious inadequacy in the methodology adopted for the purposes of the EIAR, particularly at the Charlemont construction compound, given its very close proximity to residential properties. It appears as though the EIA is being the subject of a further assessment, which the applicant is suggesting to be undertaken post determination of the Railway Order application. We contend that this is inappropriate and that the EIAR does not properly assess the impacts of the development.

Describing the significance of the effects within the EIA process is critical. The EIAR Guidelines (EPA 2022) defines the key effects that are of relevance to the subject assessment:

- **Moderate Effects** - An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
- **Significant Effects** - An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment.
- **Very Significant** - An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment.
- **Profound Effects** - An effect which obliterates sensitive characteristics.

The assessment of the effects of upon residential amenities is different between the construction stage and the operational phase. In the construction stage, there is no assessment upon the **internal noise levels**.

The construction noise receivers are illustrated in the figure below.

Figure 9: Construction Noise Receivers

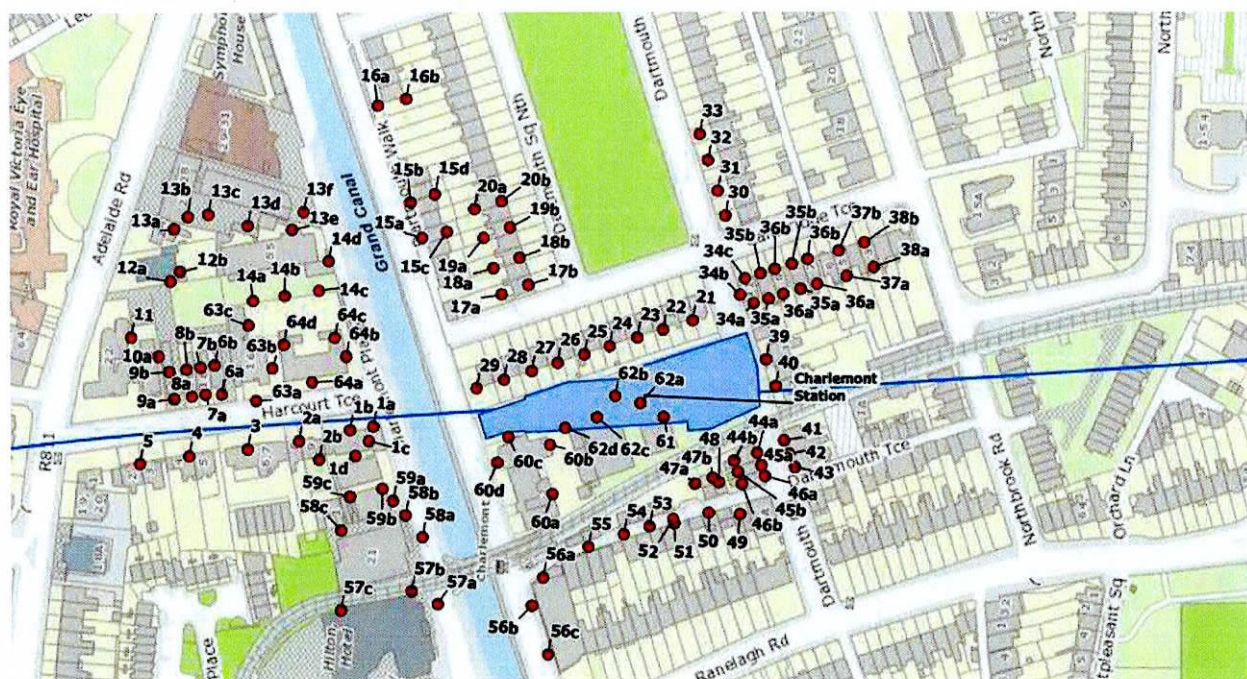


Figure 10: Blasting Contours PPV (Figure 14.4)

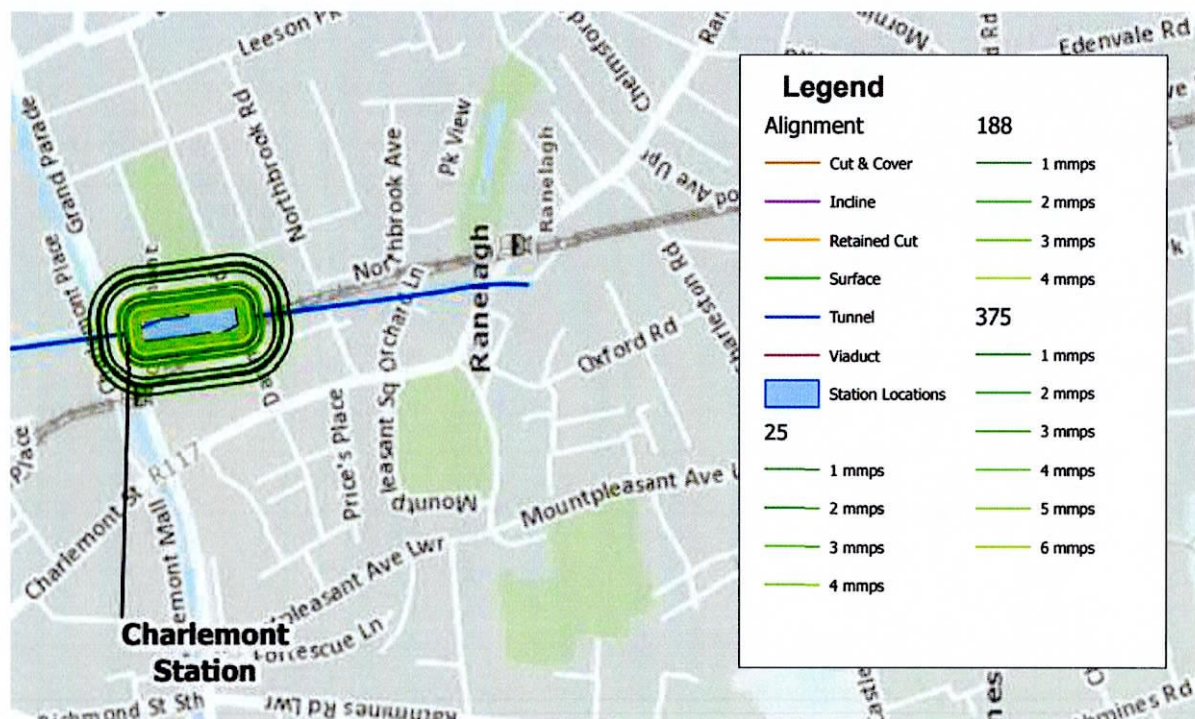


Figure 11: Blasting Air Overpressure Contours (Figure 14.5)

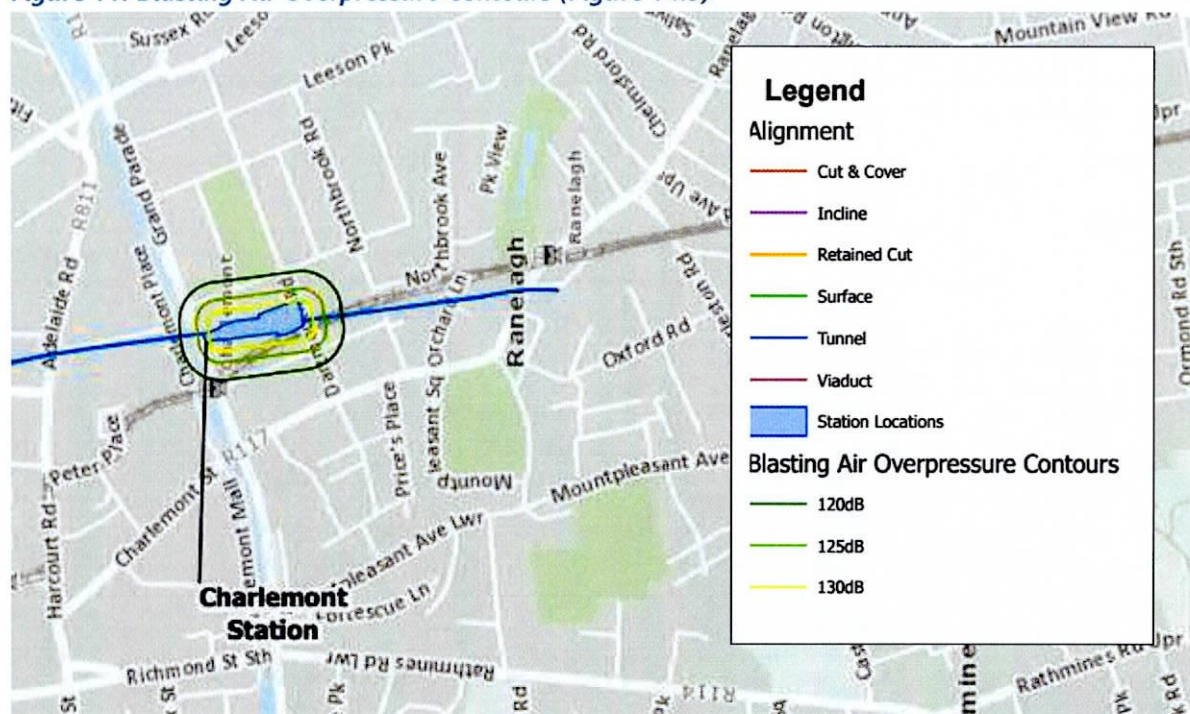
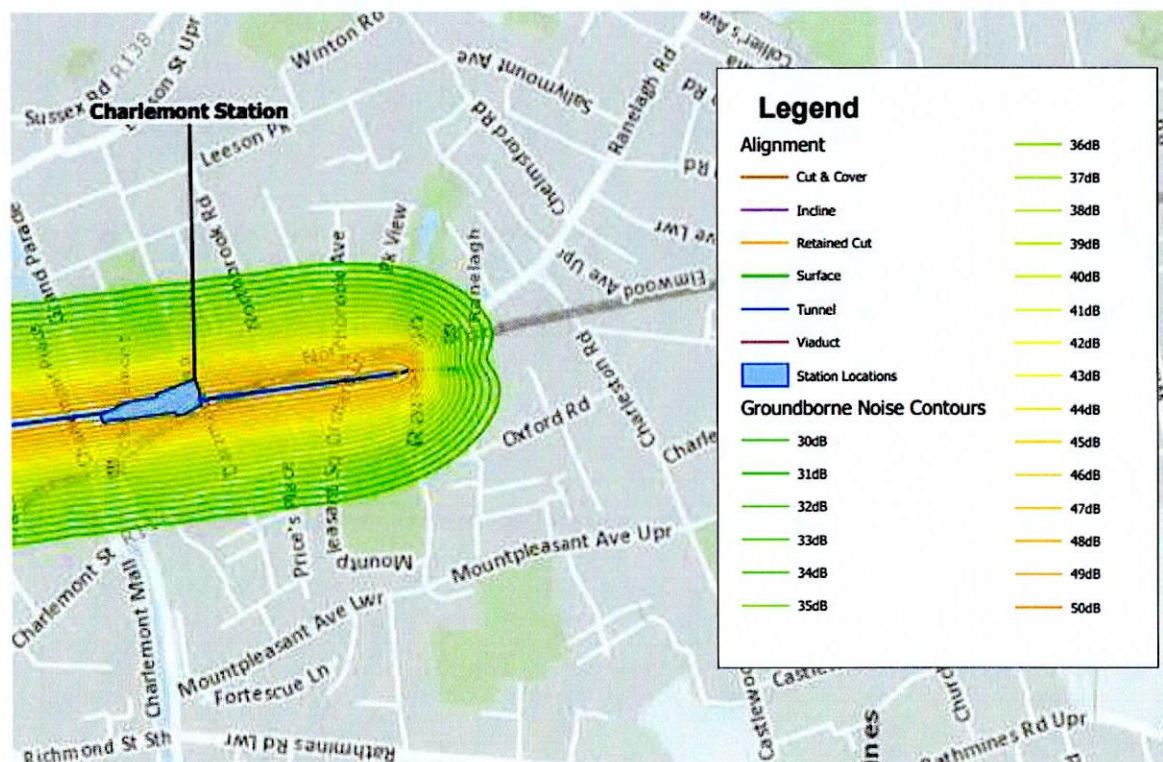


Figure 12: Boring Contours (Figure 14.2)



4.2.2 Airborne Noise and Vibrations

The airborne noise and vibrations are assessed in the EIAR and section highlights that Charlemont Station is going to be major focus for construction, as it will be the location of a major surface construction compound catering for above and below ground works. It states:

*Appendix 3 "Six scenarios have been modelled relating to works associated with constructing this mined station from advanced enabling, utility and site preparation works, piling & D-wall construction, excavation above and below the slab including blasting and finishing works. These works will be undertaken during daytime standard working hours. This compound will also be used as a compound for the intervention tunnel to be constructed between Charlemont Station, 320m southwards, and will connect to the end of the main City Tunnel. Whilst the works in the tunnel will be fully underground (assessed in Chapter 14), a support compound will be located within the Charlemont main site compound for concreting and materials handling. **This compound will be in operation on a 24/7 basis for the duration of this construction phase.** During the station fit out (MEP works) which will be undertaken on a 27/4 basis within the station. This will necessitate an element of surface activity to support these works at this location which will occur at night as discussed in Section 13.5.2.2."*

There are a number of sources of noise impacts, and these are considered in relation to the noise receptors identified in the EIAR. These are summarised in the table below.

Noise impacts on Dartmouth Square West are predicted to range from moderate to very significant. Notably, the hours working are specified as 07:00 hrs to 19:00 hrs. The passage of the Tunnel Boring Machine (TBM) through the station will be 24 hours, 7 days a week. In addition, HGV deliveries will be ongoing over a lengthy period of time. Evidently the impact upon Dartmouth Square West will be very significant. Table 13.68 of the EIAR includes the following predicted dB and predicted impacts:

Table 2: Noise Activity and Predicted Impact for 1-17 Dartmouth Square (ID 21-29)

Activity	Property	Predicted CNL Db	Predicted Magnitude of Impact
Enabling Works	1-17	71-80	Significant to Very Significant
Station Piling	1-17	71-80	Significant to Very Significant
South Station Excavation	1-17	71-80	Significant to Very Significant
Station South Underground	1-17	71-80	Significant to Very Significant
Finishing Fitting Out	1	71-80	Significant to Very Significant
	3-7	66-70	Moderate to significant
	9-17	71-80	Significant to very significant

The advice attained from RINA, however acknowledges that the noise levels will be very significant at times outside at this location. In addition, impacts are expected for noise levels inside rooms with open windows during most of the construction phases. This is wholly unsatisfactory for residents' to experience for approximately 9 years.

Given the underwhelming engagement experienced by residents to date at Dartmouth Square West, significant concerns rightly have emerged for residents in the capabilities of contractors to effectively engage and communicate with residents on inevitable noise disturbances. The implementation of 'quiet times' for residents would also be considered appropriate given the significant disturbances incurred during the construction phase.

It is contended that the level of piling is not adequately assessed in the Railway Order and they only address blasting vibration. The EIAR includes some data and mitigation measures regarding blasting, but vibration is also derived by deep piling and yet, there is no data to show the impact of that in the construction phase. The extensive depth of the excavations proposed will be within 14m of the rear walls of three storey Victorian houses on Dartmouth Square which are protected structures located within an Architectural Conservation Area.

Notwithstanding the above issues raised in relation to the assessment, it is evident that the EIAR itself identifies very significant effects. BS 5228 indicates that for residential receptors: Upper noise limits for construction noise of 75dB (LAeq,12hr) during the day; 65dB (LAeq,4hr) during the evening; or 55dB (LAeq,8hr) during the night, or above the existing ambient if this is higher. We would contend that the impacts identified above on very sensitive residential receptors are **profound** and not merely **very significant**. We submit that, with reference to the EIAR Guidelines definitions, the noise effects would be profound as an effect which "...obliterates sensitive

characteristics" (residential amenity), rather than merely a very significant which by "....its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment."

Critically, the EIAR does not assess the night time impacts of the construction compound, notwithstanding the fact that the EIAR itself as highlighted above, indicates that it will be operating on a 24/7 basis. This in itself would trigger a profound impact which has not been assessed. The EIAR is therefore fundamentally inadequate.

4.2.3 Mitigation

Generic mitigating measures are proposed in section 13.6. These measures include:

- Contractors to control noise at source
- Selection of quiet plant
- Limiting construction hours (it is acknowledged that 24/7 working at site compounds will be required)
- Acoustic screening (The other impacts relating to visuals and daylight have not been assessed).
- Liaison with the public
- Monitoring during the construction phase and compliance with noise limits
- Noise insulation, temporary rehousing and temporary relocation (Appendix 14.6)
- Construction traffic

It is considered the mitigation measures proposed are unacceptable as they currently stand. Further consideration is required on how noise impacts will be mitigated against at every stage of construction for Dartmouth Square West residents. The monitoring measures proposed under ANV8 includes:

"A full monitoring and auditing programme will form part of the CNVMP which will be agreed with the Local Authorities prior to the commencement of the Construction Phase. As a minimum the monitoring programme will include an alert system for threshold exceedances, remote access and a platform for sharing monitoring results between the contractor, TII, DCC and FCC."

No mitigation measures have been included which explicitly requires the continuous real time monitoring of noise impact of construction activity or the impact upon internal noise environment in houses affected. Additionally, while ANV8 mitigation measures is noted, such monitoring and auditing must also be transparently shared and accessible to members of the public.

The mitigation measures were remodelled on the basis of localised screening as applied to surface level breakers and drills; and enclosures to compressors, generators, pumps, motors and ventilation fans. Table 13.90 of the EIAR refers to the impacts upon certain properties. However, the properties on Dartmouth Square West are not identified in the assessment. The EIAR goes on to state: *"At all other locations construction noise impacts are not significant to moderate to significant"*. No details of the outputs of this assessment are given in the main EIAR or the appendices. Just broad parameters are given and no details of the precise location of the hoardings, or details of the enclosures are provided. This is a critical issue for our clients, given the potential impacts. The mitigating measures in the EIAR must be deemed inadequate in relation to the detail provided.

4.2.4 Ground-borne Noise and Vibration

Groundborne noise and vibration, which is dealt with in Chapter 14 of the EIAR, are essentially one physical phenomenon which has effects in two different ways. Blasting (air overpressure), boring, secant piling, D-wall, and excavation all contribute during the construction phase. Operational impacts are considered in section 5

below. The principal elements of the project that generate ground borne noise and vibration that are of relevance to Dartmouth Square West relate to:

- Tunnel with an 8.5m inside diameter and constructed by a Tunnel Boring Machine (TBM)
- Charlemont Station Underground station
- Construction compound

The EIAR takes Dartmouth Square West as the location for this element of the assessment (Table 14.28). It does not however indicate where on Dartmouth Square West the impacts are going to vary between nos. 1 and 17 Dartmouth Square. However, the tunnel and works associated with it, do not pass under the houses on Dartmouth Square West. Threshold and predicted levels are specified in relation to L_{Amax,s} dB. The threshold levels of 40 and 45 were given for residential.

- TBM *noise* impacts (table 14.28) – Predicted level of 49. A significant impact with a high adverse magnitude
- Mechanical *noise* excavation impacts (Table 14.30) – There was a predicted level of 38. A non-significant impact with a low magnitude.
- TBM *vibration* impacts (Table 14.32) – No significant impact identified. Again, there is likely to be a significant difference between the northern and the southern end of Dartmouth Square West and it is not clear where the reference point is taken for the assessment.
- Mechanical *vibration* excavation impacts (Table 14.33) – No significant impact identified for Dartmouth Square West. Again, it is not clear where the assessment point is.
- Blasting vibration impacts (Table 14.34) - No significant impact identified for Dartmouth Square West. No specific assessment point is given.

There will be significant excavations works, including blasting and drilling associated with the start of the intervention tunnel in the area immediately to the rear of house nos. 1-17.

4.2.5 Mitigation

Given the deficiencies in the EIAR, it is difficult to judge whether the mitigation measures are adequate. There is little that can be done in terms of mitigation to render the impacts non-significant, particularly where these have not even been identified in the first instance. The impacts upon human health is considered below. In addition, the interaction of noise effects will be significant. Only 6 locations have been identified for pre-construction surveys in relation to noise and vibration arising from project. While the Charlemont station new oversite development is identified, the properties on Dartmouth Square West are not.

We have reviewed the conditions appended to schedule 14 of the original Metro North Railway Order. The Development Management Guidelines (DHLGH, 2009) indicate that planning conditions should be necessary; relevant to planning; relevant to the development to be permitted; enforceable; precise; reasonable. Condition 15 of the previous metro north railway order specified that the following airborne construction noise levels should be applied at the facade of any residence.

Table 3: Air borne noise condition limits (Condition 15 of Metro North Railway Order 2010)

Day	Period & Limit (dB)	Notes
Monday to Friday	75 LAeq 0700-1900 Hours 65 LAeq 1900-2200 Hours 45 LAeq 1Hr (2200-0700 Hours)*	*Non tonal, non impulsive
Saturdays	70 LAeq 0800-1630 Hours 55 LAeq 1630-2200 Hours 45 LAeq 1Hr (2200-0800 Hours)*	*Non tonal, non impulsive
Sundays, Bank and Public Holidays	60 LAeq 0800-1630 Hours 50 LAeq 1630-2200 Hours 45 LAeq 1Hr (2200-0800 Hours)*	*Non tonal, non impulsive

From the evidence submitted, it is apparent that it will not be possible to achieve these thresholds, particularly when the cumulative impacts of noise and vibration, both air borne and ground borne, are taken into account.

Condition 12 and 13 of the aforementioned Metro North relate to vibration impacts. They reference German Standard DIN 4150-3:2016 "Vibrations in buildings – Part 3: Effects on structures". The ability of the project to comply with any such standard needs to be fully explored by the Board and at any oral hearing held.

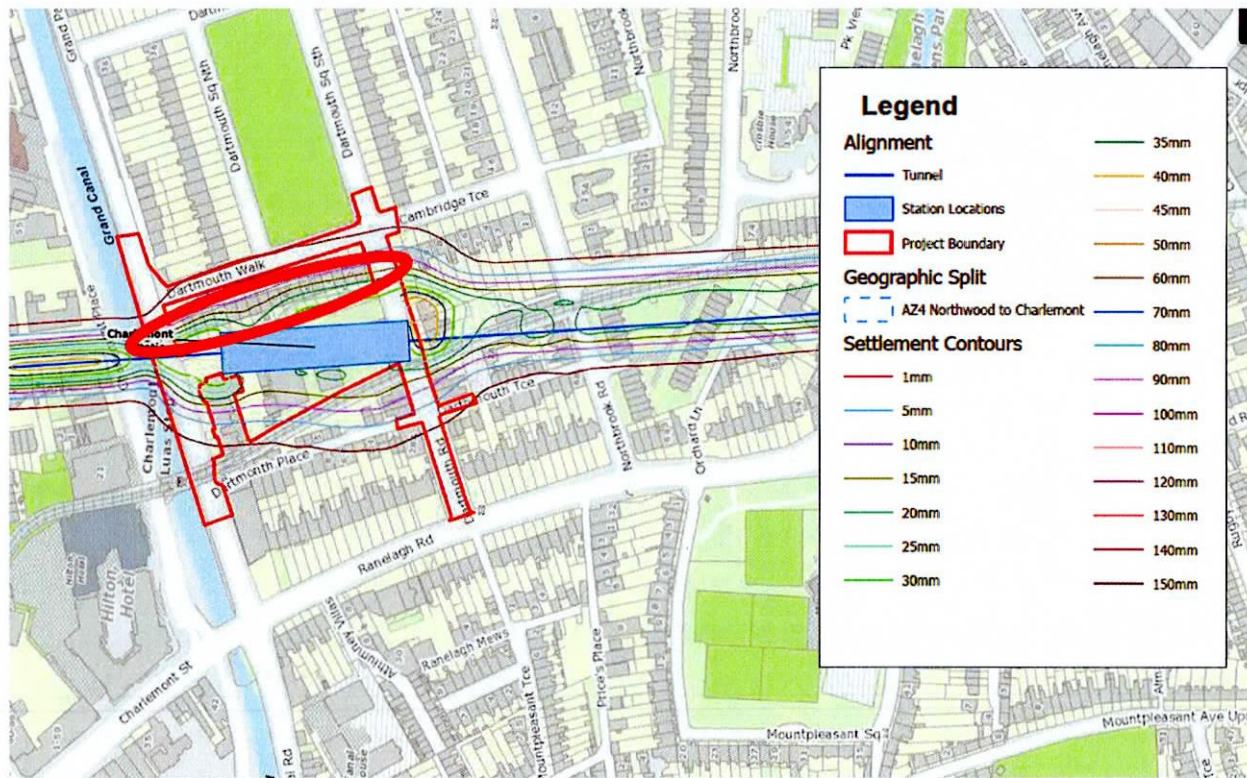
For this reason, we request that the Board appoints specialist noise and vibration consultancy advice in order to assist it in conducting this element of the assessment.

4.3 Settlement & Subsidence

4.3.1 Methodology

This matter is covered in Chapter 21 Soils and Geology and Appendix A5.17 (Building Damage Report).

Figure 13: Settlement Contours (Dartmouth Square highlighted with red oval)



From a review of the EIAR and associated appendices, it is evident that a very limited assessment of settlement and subsidence has been carried out. It can be seen from the above diagram that the houses on Dartmouth Square West fall within the 10mm to 30mm settlement zone. This is defined as "slight" risk category. However, given that all bar one of the buildings covered by this submission are protected structures, they should be classed as damage category risk 3 (moderate). A phased system of assessment is proposed.

- Phase 1 – the assessment of the greenfield settlement contours using generic ground parameters and the identification of buildings that are
 - a) enclosed by the 10mm contour or with a ground settlement slope > 1:500 and
 - b) those buildings enclosed by the 1mm contour subject to 'special' considerations.
- Phase 2 – all the buildings identified in Phase 1 are assessed using the greenfield ground movement profile making credible foundation assumptions and are classified into Damage Categories 0 – 5; those buildings placed in Damage Category 3 or above, and those subject to 'special' considerations (see below) are carried through to Phase 3.
- Phase 3 – each identified building is considered individually to determine its behaviour using detailed information and assessment methods; this may include a refined ground model, detailed structural surveys, refined construction methodology and use of sophisticated soil-structure interaction analysis such as finite element analysis.

Section 4.1 of Appendix A5.17 indicates "In the context of building damage assessment, 'special' considerations refer to buildings (hereafter referred as 'special' buildings) in proximity of the excavation, with deep basements, or those identified as designated Protected Structures...". However, the protected buildings on Dartmouth Square West are excluded.

Appendix A5.17 provides an assessment of 'representative' buildings. It is unclear why these buildings were selected. There is no map illustrating the location of reference numbers/properties. The presentation of the information is opaque and unclear and does not facilitate a full and proper examination of the true impacts upon the houses on Dartmouth Square West. Again, this is a significant inadequacy in the EIAR.

The assessment effectively defers most of the assessment of subsidence and settlement to a further assessment. Such an assessment if undertaken after the railway order is issued, removes property owners' rights to review the actual impact of the development on their properties.

4.3.2 Tunnel Driving and Secant Walls

An excavation of unprecedented size, for Victorian Dublin, is proposed in a very tightly restricted site. Stretching the whole length of the Charlemont site, the excavation will be up to 50m wide and approximately 30m deep. It is proposed to advance this excavation within a containing secant wall construction, following which will be constructed the station box for the proposed MetroLink Charlemont station.

Following the completion of the station box, it is proposed to drive a TBM through the north east end of the box, and, exiting through the south west corner, continue the tunnel boring activity for 350m further south, to behind Ranelagh Village.

Ground settlement following the construction of both secant walls and TBM tunnelling is inevitable. It is unavoidable, and it will occur, to varying degrees, across a settlement zone around the excavation of the tunnel centre line, and behind all the secant walls.

Compounding the alarming settlement projections of between 10mm and 30mm caused by the deep secant wall, and subsequent excavations, wall deformations, and disturber water table, the whole of the residential stock within the established slump zone will be subjected to further compounding settlement disruptions with the arrival, and departure, of the TBM tunnelling process, some two years later.

Engineering research experience has shown that projection of accurate expected settlement is usually unreliable, and results usually fall within certain ranges above or below the expected.

4.4 Hydrogeology

The impact upon hydrogeology can be significant, and given the depth of the works and proximity to older buildings they are likely to be impacted. No detailed specific localised groundwater modelling has been undertaken as part of the EIAR. Water depth reading from boreholes some 550m from the proposed station are used in the broad assessment (Table 19.15). The data on which the assessment is undertaken is not related to the site concerned.

4.5 Phasing & Programme

The construction programme is set out in figure 5.4 of the EIAR. See figure below, which is an extract. It can be seen that the construction period for Charlemont Station is **102 months, or 9 years**.

Figure 14: Construction Programme (Figure 5.4 of EIAR)

Description A24 Compounds / Logistics / Other Structures	Estimated Construction Programme (Months)	Y1				Y2				Y3				Y4				Y5				Y6				Y7				Y8				Y9				Y10				
		Quarter				Quarter				Quarter				Quarter				Quarter				Quarter				Quarter				Quarter				Quarter								
Northwood Portal	90																																									
Northwood Station Compound/Deep Station	84																																									
Ballymun Station Compound/Deep Station	99																																									
Collins Avenue Station Compound/Deep Station	99																																									
Albert College Park Shaft Compound/Deep Station	63																																									
Griffith Park Station Compound/Deep Station	105																																									
Glasnevin Station Compound/Deep Station	102																																									
Mater Station Compound/Deep Station	105																																									
O'Connell Street Station Compound/Deep Station	99																																									
Tara Station Compound/Deep Station	105																																									
St Stephens Green Station Compound/Deep Station	105																																									
Charlemont Station Compound/Deep Station	102																																									

Added to this will be the ongoing works after this four-year period to support the construction of the main tunnel to the south and then the intervention/evacuation tunnel.

The length of time that the residents of Dartmouth Square West have to endure is not temporary with reference to the EIAR Guidelines (EPA 2022). The EIA Directive requires a project to describe the likely significant effects, including the duration and frequency of effects. Table 3.4 of the EIAR Guidelines sets out definitions, which the introduction and project description suggests have been used. See table below.

It is clear that the duration of the impacts falls within a medium-term effect as they last between seven to fifteen years. This is length of time is intolerable for any resident on Dartmouth Square West.

We also contend that this is a significant inadequacy in the EIAR. The duration of the effects in accordance with the guidelines are not given in any of the relevant chapters in so far as they relate to Dartmouth Square West.

Table 4: Duration of Effects as defined in the EIAR Guidelines (EPA 2022)

Describing the Duration and Frequency of Effects 'Duration' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.	Momentary Effects Effects lasting from seconds to minutes.
	Brief Effects Effects lasting less than a day.
	Temporary Effects Effects lasting less than a year.
	Short-term Effects Effects lasting one to seven years.
	Medium-term Effects Effects lasting seven to fifteen years.
	Long-term Effects Effects lasting fifteen to sixty years.
	Permanent Effects Effects lasting over sixty years.
	Reversible Effects Effects that can be undone, for example through remediation or restoration.
	Frequency of Effects Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).

4.6 Hours of Operation

Charlemont is designated as a main construction compound. The hours of operation are summarised in Appendix 5.1 and illustrated in the figure below.

Construction Compound	Local Authority	Standard Working 5.5 days	7- days working (Dayshift only)	7- days working (24 hours)
Charlemont Station	Dublin City	√	<ul style="list-style-type: none"> • Station construction • Civils and architectural works • Clear site and reinstate 	<ul style="list-style-type: none"> • TBM traverse through station • SCL Evacuation & Ventilation Tunnels • MEP station works

It can be seen that there will be significant 24 hour working 7 days a week involving the TBM activities, construction of the evacuation tunnel and associated SCL lining and station works themselves. There will also be weekend working, which is all in addition to the standard 5.5 day working week. This standard working day is Monday to Friday 07:00 hrs to 19:00 hrs (12 hours) and on Saturdays 07:00 hrs to 13:00 hrs (6 hours). It is quite evident that the works undertaken outside of this standard work week are going to be extensive and ongoing given the extent of works required in relation to the station construction, site clearance, tunnel construction and MEP station works. This is effectively going to a 24/7 construction for a significant period of time over the 9 years of the project.

Given that the development is within a settled residential neighbourhood and very close to all the houses on Dartmouth Square West, this will be an intolerable level of interference in amenities with a loss of sleep, general disturbance and psychological impacts resulting in a detriment to human health.

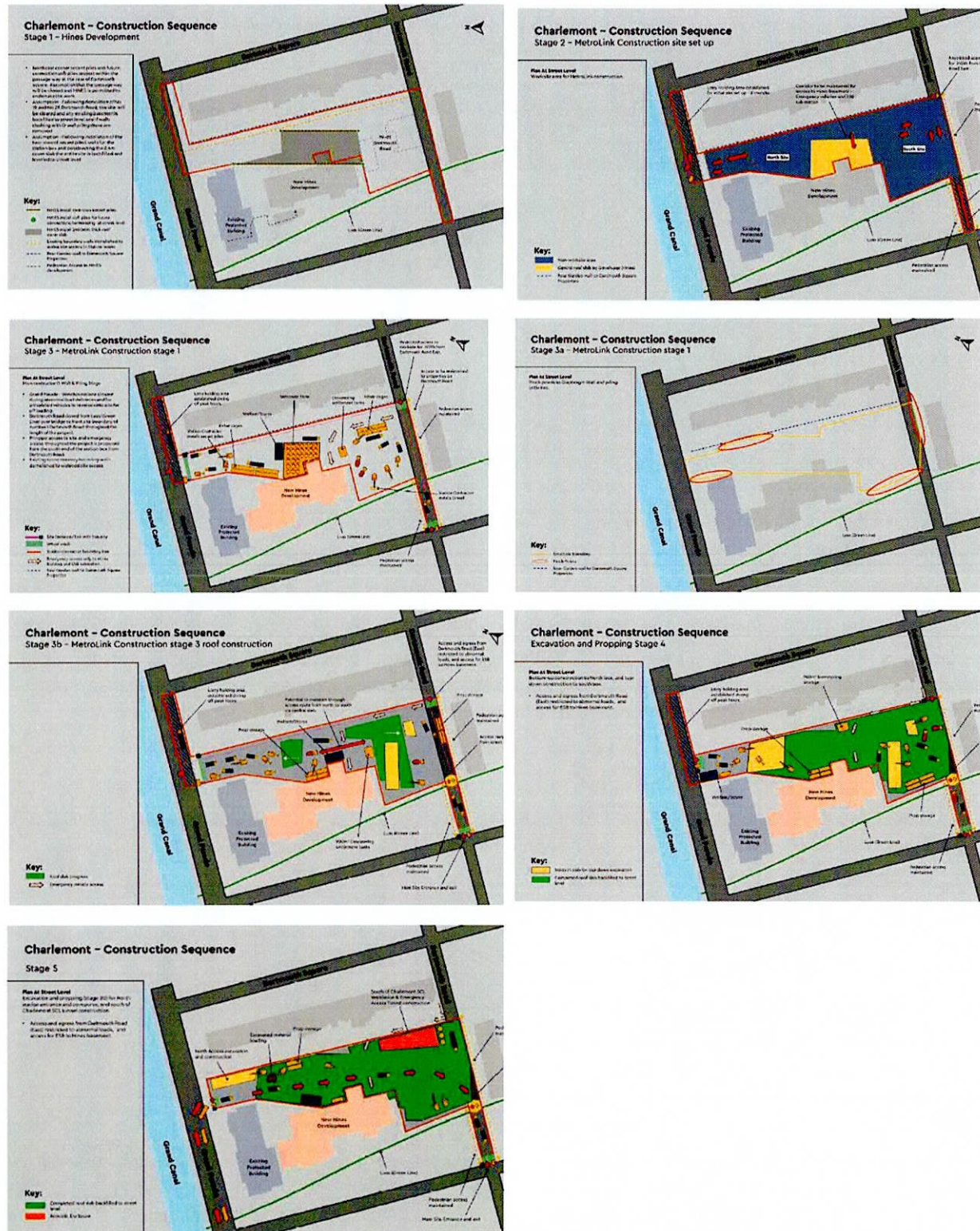
4.7 Construction Compound

A significant construction compound in this residential area is proposed at Charlemont. It totals 4,200 sqm. It would perform the following key functions over the 102 months construction period and would act as a strategic hub for core project management activities (i.e. engineering, planning and construction delivery) and for office-based construction personnel. They will include:

- Offices and welfare facilities;
- Workshops and stores;
- Storage and laydown areas for materials and equipment (e.g. aggregates, structural steel, steel reinforcement); and
- Limited parking for construction vehicles.

The construction sequencing is provided in Appendix A5.3. It is summarised in the figures below. The laneway to the rear of the houses on Dartmouth Square would be taken into the construction compound for a period of 9 years. This will bring all noise and construction activity right up the rear boundary walls of the residents' properties. This relationship alone will result in significant and profound impacts arising from the construction phase.

Figure 15: EIAR Construction Sequence



The above sequencing diagram illustrates how the project accepts that the station box constructed as part of the Two Grand Parade development (Hones Stage 1) is an integral and essential part of the project. Issues in relation to legality of this are considered in further detail in the General Submission prepared on behalf of Dartmouth and Charlemont Community Group.

4.8 Traffic and Transport

4.8.1 Modelling and Assumptions

Section 9.4.4.3 outlines the methodology in relation to impact assessment for the construction phase. It indicates that a strategic modelling exercise was undertaken using the NTA's Eastern Regional Model (ERM). It further indicates that local modelling of specific junctions was undertaken using LinSig and Junction 9. Appendix A9.5 sets out the construction period

- Overall construction – 102 months
- Access – 1 month
- Enabling Works – 13 months
- Civils – 71 months
- Fitout – 9 months

The figure below illustrates the traffic management arrangements around the site.

Figure 16: Charlemont Traffic Management (Figure 7-58 of Appendix A9.5)

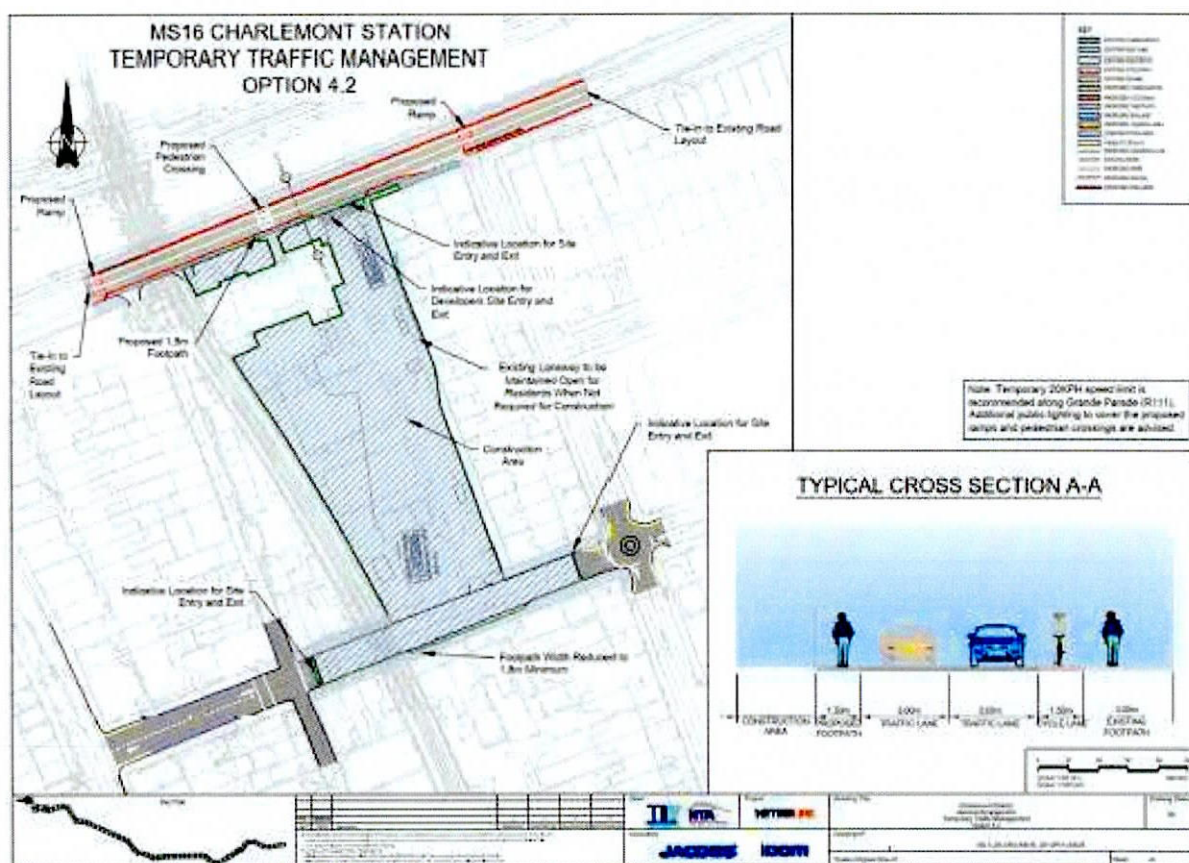


Figure 7-58: Proposed Traffic Management

It is stated that the site boundary for the main works will remain the same throughout all sub-phases. The main haulage route is via the South Circular and along the Grand Canal from the M50. HGV movement will be 20 to 50 per day, with a maximum of 210 per day. Dartmouth Road would be closed to through traffic and traffic would be routed via Northbrook Road and Ranelagh Road.

From a review of Appendix D of Appendix A9.5 it is apparent that local impact assessments of junctions around the stations using LinSing modelling was undertaken **with the exception of Charlemont Station**. Effectively, it appears as though the entire assessment was reliant on the strategic modelling exercise at this location. Notwithstanding this significant deficiency, certain conclusions can be drawn from the limited assessment which was undertaken.

4.8.2 HGV and General Traffic

The assessment indicates increased traffic on Grand Parade and Northbrook Road. On Grand Parade there is an 8% increase in traffic on the eastbound lane in the AM peak and 11% during the PM peak in the westbound lane. This is deemed severe in Table 7-129 of Appendix A9.5. The number of HGV vehicles accessing the site (up to 210 per day), will give rise to a significant loss of amenity.

4.8.3 Access, Loading and Parking

Appendix A9.5 suggests that the impact upon loading, parking and access is either slight or moderate. This in our opinion under-estimates the impact upon the residents of the properties listed in this submission. The construction sequence drawing illustrates that there would be a lorry holding area on Grand Parade during the stages 2-4 of the project. This has the potential to give rise to noise and disturbance, particularly for properties at the northern end of the Dartmouth Square West.

4.8.4 Pedestrian Movement

Pedestrian movement in and around the construction compound will be severely constrained. It appears as though the footpath on the southern side of Grand Parade will be lost, with the HGV lorry holding area. There does not appear to be any pedestrian management proposals to manage this interface. Pedestrian and HGV conflicts will be inevitable, particularly at the entrance and exit to the compound, which is immediately in front of the houses.

4.8.5 Summary of Assessment

The assessment provided in Appendix A9.5 suggests in section 7.11.7.2 highlights that in relation to the main works the impacts are as follows:

- Severe impact upon traffic volume redistribution
- Moderate impact from HGV volume increase
- Moderate impact upon cyclists caused by diversions.

This does not accurately consider the impact as detailed above in relation to access, loading and parking.

4.9 Impact on Utilities

It is evident that the diversion of utilities on Dartmouth Road and Dartmouth Square West will have a significant impact upon local access, including pedestrian, cycle and vehicular.

4.10 Human Health

Chapter 10 of the EIAR relates to the impacts upon human health. These arise from noise and vibration during the construction phase principally. It has an impact upon human psychology and human conditions relating to lack of sleep. Section 10.5.1.2 states in relation to Charlemont:

"There are a number of residences which are predicted to have significant adverse effects from construction noise during the day as outlined in Chapter 13 (Airborne Noise & Vibration), particularly in relation to the

upper floors. Significant mitigation including 4m high hoarding is proposed. While residual effects are possible, these would be during the day and will not apply to night-time and therefore will not affect the potential for sleep. Consequently no human adverse effects are expected and although limited noise impacts are predicted near this receptor no significant adverse effects to human health are predicted".

This is the only assessment of the impact upon human health. The houses on Dartmouth Square West are not even identified as very highly sensitive receptors. It appears as though this section to the EIAR has not fully reviewed or had regard to the construction phasing with night-time working, ground borne noise and vibrations and other matters raised above. This is considered to be a wholly inadequate assessment of the impact upon human health in so far as it relates to the properties on Dartmouth Square West.

4.11 Interactions of Effects

Chapter 29 of the EIAR considers the interaction of effects. Again, we consider it to be wholly inadequate as it fails to adequately address the interactions between air borne noise and vibrations, ground borne noise and vibrations, traffic impacts, visual impacts (e.g. of the hoardings) and human health. All of these effects come together in an interaction which significantly impacts upon the amenities of the residents listed as part to this submission.

5. OPERATIONAL IMPACTS

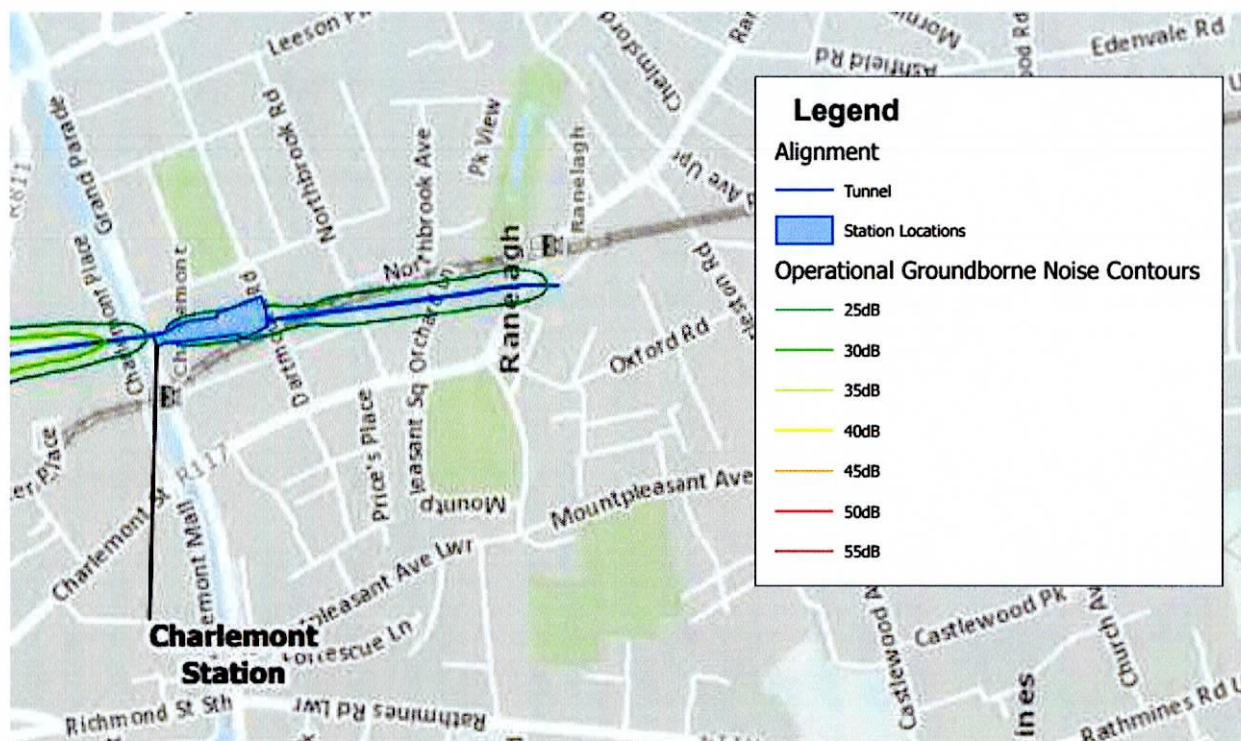
5.1 Introduction

This section considers the operational impacts and effects upon the residents of Dartmouth Square West. This is some considerable time away, as the operation is not due to commence until after year 10.

5.2 Noise and Vibration

This section reviews noise and vibration impacts at operational stage. Chapter 14 of the EIAR deals with Groundborne Noise and Vibration. In Chapter 13, Table 13.4 setting noise sources and assessment chapter identified potential sources of noise for the AZ4 sections. Ventilation systems serving the underground station and intervention shaft are noted as the principal noise source for noise in Chapter 13. Table 14.11 addresses potential sources of groundborne noise. The only potential source of noise is indicated as being train operation groundborne noise.

Figure 17: Ground Borne Noise during Operational Phase



5.2.1 Ventilation - Description

Chapter 4 of the EIAR described the proposed development and various components. Section 4.12.7 specifically looks at heating, ventilation and air conditioning. Tunnel ventilation has been designed 'to operate during normal conditions and in the event of a fire'. It comprises of ventilation shafts, over-track exhaust systems and tunnel jet fans. The shafts will be placed at each end of all underground stations. Each shaft includes three reversible axial fans, one of them on stand-by that inject air or extract air out of the tunnel. The fans are fitted with silencers to attenuate operational noise.

In relation to ventilation systems, section 13.5.3.2.3 – Ventilation Systems, the EIAR states:

'Tunnel ventilation shafts are located at both ends of each underground station: AZ2: Dublin Airport and AZ4: Northwood, Ballymun, Collins Avenue, Griffith Park, Glasnevin, Mater, O'Connell Street, Tara, St Stephens Green and Charlemont.'

It is understood that air will circulate between the tunnel and the shaft using jet fans which are located inside the tunnels. These fans drive the air horizontally toward the shaft before it exits vertically toward surface level.

The proposed overtrack ventilation system and smoke exhaust gives rise to impacts that have not been properly assessed in terms of noise and air emissions. These systems are highlighted in the extract from drawing no. ML1-JAI-SRD-ROUT_XX-DR-Z-02090.

Figure 18: Northern End Ventilation and Exhaust System (outline in red)

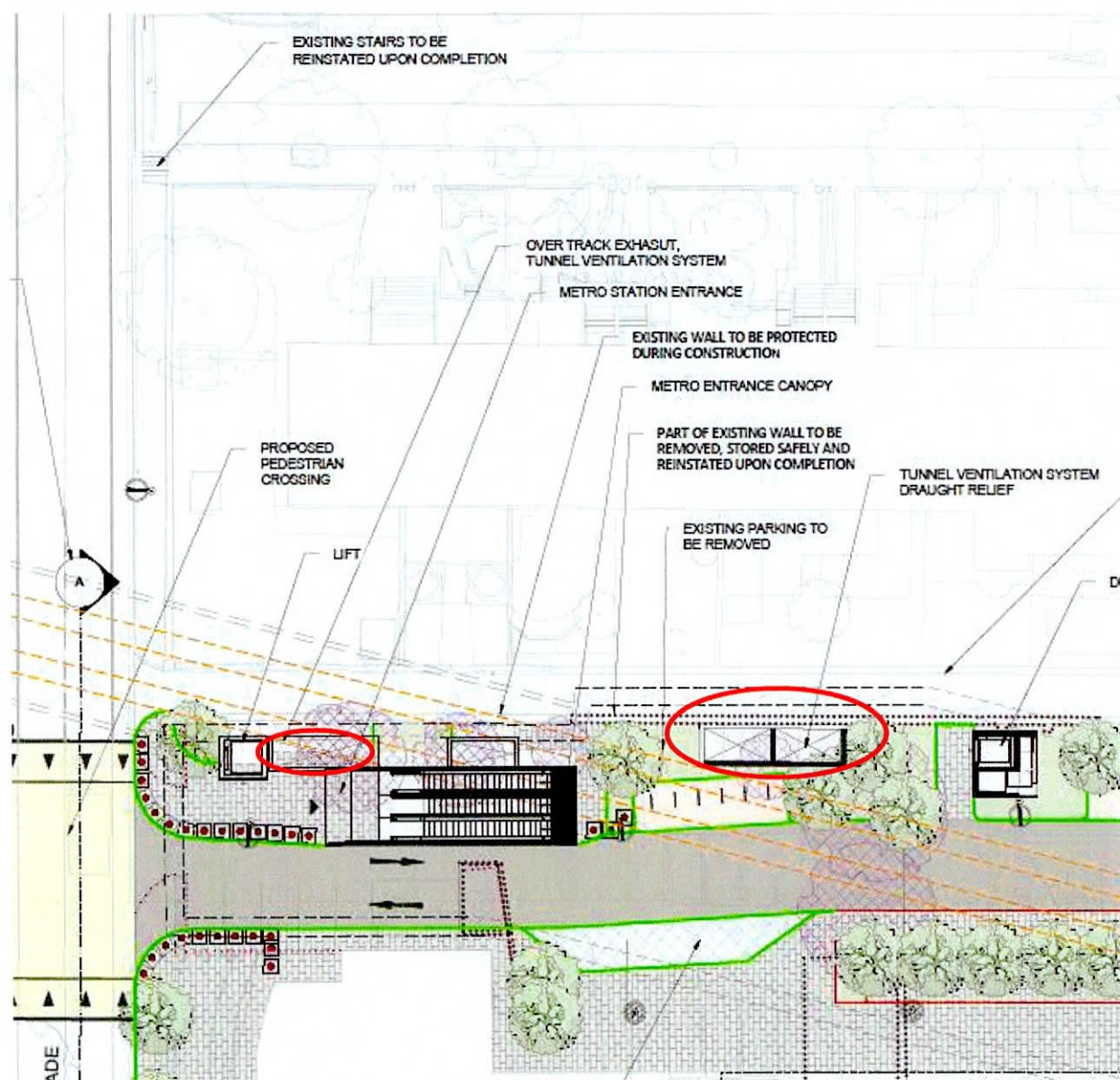
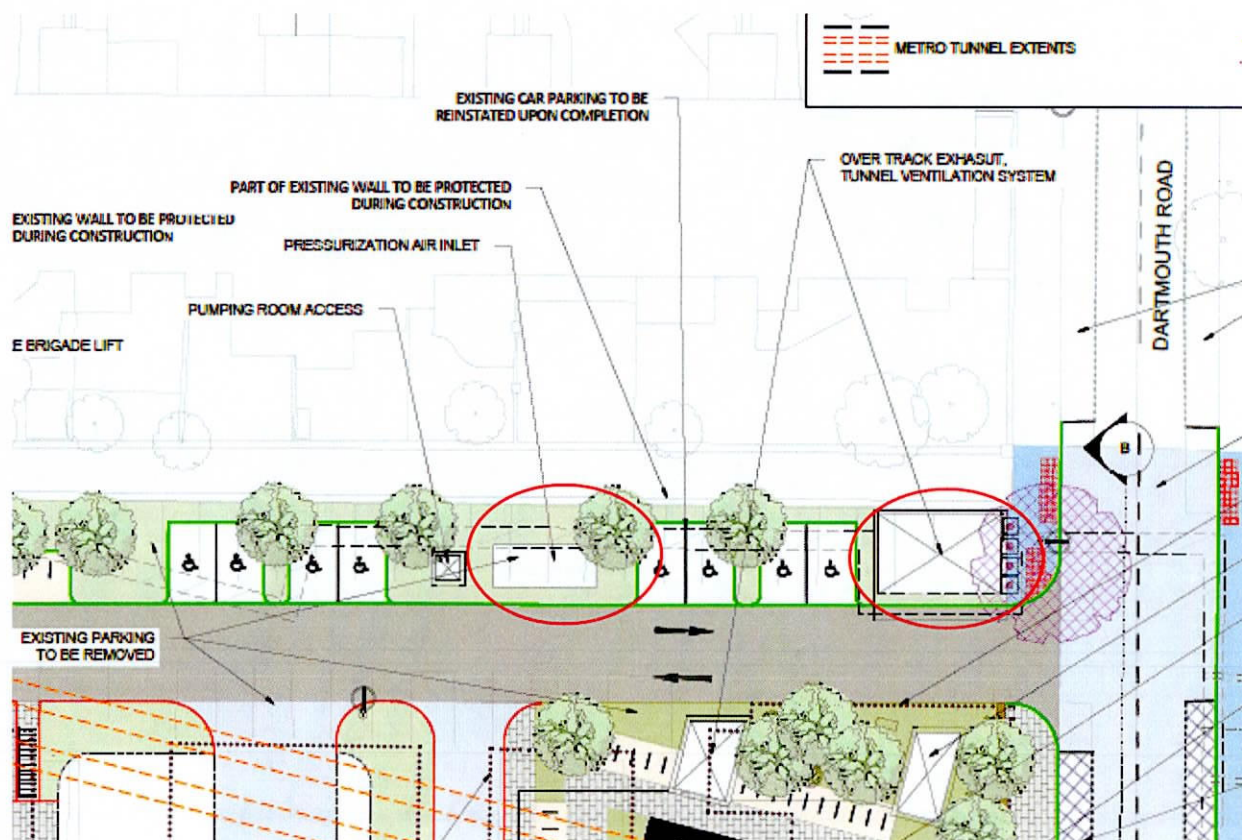


Figure 19: Southern End Ventilation and Exhaust System (outline in red)



5.2.2 Ventilation - Assessment

Ventilation is an important element of the design and workings of the tunnel, for instance in relation to maintaining adequate levels of moisture in the air and to air quality. Yet it does not appear that it was subject of a full assessment. In fact, it will be subject to '*further design development*'. Section 13.5.3.2.3 of the EIAR indicates that an acoustic study was undertaken to assess the proposed ventilation strategy. This important referenced study is not included as an appendix to the EIAR. It further states:

'This indicates at 10m from the external grille noise levels are below 55dB LAeq with this source in operation in combination with other ventilation sources. For emergency use, this value is acceptable. During day-to-day operations in the absence of the emergency fans this level would pose potential significant noise impacts particularly during night-time periods without specific attenuation.'

It then states:

*'The **specific noise level from ventilation systems will be calculated as part of the further design development**. Specifically, the operational noise level from each shaft and surface grill will be calculated to the nearest sensitive areas and specific attenuation designed for each system to not exceed the relevant design criteria for each location.'* (bold our emphasis)

The same statement is repeated in Section 13.5.3.7. It states:

'Once operational, the Metrolink will be in tunnel within this section of the proposed Project. The primary operational noise sources in this section relate to station and ventilation tunnel systems.

The specific noise level from ventilation systems will be calculated as part of the further design development. Specifically, the operational noise level from each shaft and surface grill will be calculated to the nearest sensitive areas to each and specific attenuation designed for each system to not exceed the relevant design criteria for each location.

As part of the design development of the station plant and ventilation systems, the background noise level at the nearest and most exposed NSLs to each fixed item of plant will be determined for day and night-time periods. This data will be used to establish the magnitude above which the operational plants items operate above in accordance with the methodology described in 13.2.5.2.4. All baseline noise values will be confirmed prior to the selection and design of the operational plant items through updated baseline noise surveys.'

We would emphasise here that specific noise levels from ventilation systems have not been assessed as part of this EIAR but rather would *'be calculated as part of the further design development.'* Effectively the impacts upon the houses on Dartmouth Square West of the ventilation systems illustrated on the figure above have not been assessed.

5.2.3 Ventilation - Observation

Annex IV of the EIA Directive is very clear in relation to the information to be included in the EIAR. Under the description of the project, it requires:

*'b) a description of the physical characteristics of the **whole project**, including, where relevant, requisite demolition works, and the land-use requirements during the construction and **operational phases**;*

...

*d) an estimate, by type and quantity, of **expected residues and emissions** (such as water, air, soil and subsoil pollution, **noise**, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases.'*

It also requires a description of the reasonable alternatives which may include *'project **design, technology, location**, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.'*

It should be noted that ventilation is also not an element considered under the alternatives chapter. There are different technologies that could be used for ventilation, the location of fans and vents could be different, yet no alternative was considered.

It is queried why noise that is continuous is not assessed as part of this EIAR and may be assessed as part of a future design iteration. There is no indication that this would be subject of a consultation with potentially affected parties unless this is clearly specified in a potential grant of the railway order.

5.2.4 Train Operations - Description

Under section 6.4.3 Service Pattern, two patterns are considered, these are:

- the Long Hoop, which includes all stations from Estuary to Charlemont; and
- the Short Hoop, which includes all stations from Dublin Airport to Charlemont.

The EIAR sets out there may be a single loop and a double loop, which is dependent on peak hours. In all variants considered, the Charlemont station is included. Frequency would vary. It notes

"in the case of the double loop, the stations between Dublin Airport Station and Charlemont Station will have twice the frequency as those between Estuary Station and Dublin Airport Station."

The frequency of train under the different patterns is detailed in tables 6.2, 6.3 and 6.4. These are shown below.

Table 5: Service Operational Headway to Meet Demand – Monday to Friday

Timetable	Single Loop Strategy	Double Loop Strategy	
	Operational Headway (seconds)	Operational Headway Dublin Airport – Charlemont (seconds)	Operational Headway Estuary – Dublin Airport (seconds)
05:30 - 07:00 (Opening)	-	200	400
07:00 - 10:00 (AM)	100	-	-
10:00 - 16:00 (Lunchtime and School Run)	-	130	260
16:00 - 20:00 (PM)	120	-	-
20:00 - 22:00 (PM)	-	225	450
22:00 - 00:30 (Closing)	-	300	600

Table 6: Service Operation Headway to Meet Demand – Saturday

Times of the Day	Operational Headway (minutes, seconds) Dublin Airport – Charlemont	Operational Headway (minutes) Estuary – Dublin Airport
05:30-09:30	7 mins 30 sec	15 mins
09:30-23:00	4 mins 30 sec	9 mins

Table 7: Service Operational Headway to Meet Demand – Sunday and Public Holidays

Times of the Day	Operational Headway (minutes, seconds) Dublin Airport – Charlemont	Operational Headway (minutes) Estuary – Dublin Airport
05:30-10:00	7 mins 30 sec	15 mins
10:00-22:00	5 mins	10 mins
22:00-00:30	7 mins 30 sec	15 mins

Section 6.6.3 of the EIAR discusses communication systems, particularly communications with passengers. PAVA is discussed as facilitating "...broadcast of operational, security or emergency messages to passengers at stations, staff in the depot, and people on board the trains. Under normal operating conditions, the pre-recorded messages are announced automatically. When required, messages can be made by an operator at the OCC, at the station incident room, or on a train by a member of staff. The PAVA system is interfaced with the Data Communication Network System and the Central Clock System."

5.2.5 Train Operations – Assessment

The EIAR states in section 14.4.2 that potential impacts during the operation phase could arise from rolling stock. It sets the threshold groundborne noise at 40 dB L_{Amax,s} at an approximate distance of 16m from the track

centre and at 35dB LA_{max,s} occurring at approximately 27m from the centre of the track. Table 14.43 sets out the predicted levels as shown below.

Table 8: Groundborne Noise Impacts

Receptor	Groundborne Noise LA _{max,s} dB		Magnitude	Impact	Description of Potential Impact
	Threshold Level	Predicted Level			
Albert College Court	40	29	Low	Not significant	No significant Impact
Dalcasian Downs	40	31	Low	Not significant	No significant Impact
Cross Gun Quay Apartments	40	33	Low	Not significant	No significant Impact
Berkeley Road	40	33	Low	Not significant	No significant Impact
12/13 O'Connell Street	40	36	Low	Not significant	No significant Impact
35 Pearse Street	40	35	Low	Not significant	No significant Impact
Trinity, Dixon Hall	40	35	Low	Not significant	No significant Impact
Dartmouth Square West	40	21	Low	Not significant	No significant Impact

The assessment indicates that there is no significant impact upon Dartmouth Square West. However, the precise point of assessment is not provided.

5.2.6 Train Operations – Observation

It is queried why only train rolling have been accounted for in the assessment of groundborne noise at operational stage. As demonstrated in the preceding section, there are other elements that should have been assessed, specifically ventilation. Ventilation, train rolling and the use of the PAVA system should be cumulatively assessed in accordance with the requirements of the EIA directive to provide a more accurate picture of operational noise levels.

By way of comparison, we refer to the noise impact assessment¹ prepared as part of the Crossrail Project in London which is now operating under the name of the Elizabeth Line opened in 2022. We note the following project elements were considered as part of the assessment of noise levels arising of the operational phase:

'Section 5.4 Potential Impacts during operation may arise from:

- *noise and vibration from new or altered sections of line (initial, additional or altered works) including power supply facilities;*
- *increases in noise and vibration levels along existing rail corridors where rail services have increased (intensification) or the mix of services has changed;*
- *noise from plant in ventilation shafts;*
- *noise from Public Address (PA) systems in stations and depots;*

¹ Crossrail Technical Report – Assessment of Noise and Vibration Impacts – Volume 1 of 8.

<https://www.crossrail.co.uk/about-us/crossrail-bill-supporting-documents/specialist-technical-reports/noise-vibration?folder=/10/365#1>

- noise from maintenance depots;
- groundborne noise and vibration from trains running in new tunnelled sections of line;
- noise from underground train passbys emitted to surface through vent shafts; and
- noise from changes in road traffic.'

We note that in this instance some elements are excluded from the Crossrail assessment because Crossrail forms part of an existing network of underground public transport, which is not the case with MetroLink. We also refer to previous assessments undertaken by TII. For instance, when reviewing the application documentation for the Luas Line A1², we note that cumulative assessment was undertaken to include traffic and tramway.

The inclusion of traffic noise was also undertaken as part of the EIAR for some sections of the new automatic metro network in Paris, which is known as 'Grand Paris Express'³, currently under construction. This assessment is similar to the Cross Rail assessment and considered a number of elements which are not assessed by MetroLink, specifically: public announcements, plant and machinery in stations, increased pedestrian activity and increased vehicle traffic.

In summary, there is a variety of potential sources of noise which could arise from the operational phase. Either these were overlooked by the applicants or scoped out. If the latter applies, an explanation should be provided. If the omission is due to lack of information, the EIAR should set out the difficulties encountered in accordance with section 3.7.2 of the Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022) which states:

"The assessment of effects needs to leave a clear documentary trail of the analysis used to arrive at conclusions. Such documentation would include a description of data and methods used, the reasons for their selection from a range of reasonable alternative means of assessment, together with descriptions of the reliability and certainty of the results as well as the limitations and difficulties encountered."

At a minimum, noise arising from ventilation and traffic should have been considered as these are measurable. Given that underground metro systems are common in Europe, where the EIA Directive also applies, it is hard to comprehend why the operational noise assessment is so scant and includes so little information.

The drawings indicate a drop-off point on Grand Parade. There is a further one indicated on the new internal link road. It is evident from drawing no. ML1-JAI-SRD-ROUT-XX-DR-Z-02090 – Proposed Street Level Design that cars will use this new link as a rat-run to avoid the Ranelagh Road / Grand Parade junction. It is queried why no traffic noise assessment was undertaken and was not considered in cumulation with other operational noise.

We query why the assessment of predicted noise levels at operational stage has been narrowed to include sole consideration for train rolling but no other sources of noise. The results presented by TII are not realistic and do not comply with the requirements of the EIA Directive which require that impacts be assessed cumulatively. We also contend that by excluding much of the potential sources of noise, the results presented are misleading and inaccurate.

5.2.7 Public Address (PA) Systems

Section 13.5.3.2.4 of the EIAR relates to PA systems. The majority of station structures for the proposed Project will be fully underground. Any breakout of noise from the station areas is likely to be via the access stairwells

² Luas Line A1 – Noise & Vibration <https://www.tii.ie/tii-library/railway-orders/luas-line-a1/environmental-impact-statement-eis/LUAS%20LINE%20A1%20EIS%20CHPT%2011%20NOISEandVIBRATION.pdf>

³³ Dossier d'Enquête Préalable à la Déclaration d'Utilité Publique – Grand Paris Express, Ligne 16, Ligne 17, Ligne 14 : http://www.enquetepublique.lignes14-16-17.fr/dossier-enquete-publique/Document_G-2/

and escalators to ground surface. This is a significant concern for the residents of Dartmouth Square West as they reside directly next to the main station entrance where PA announcements for 19 hours a day can have the potential to significantly impact their amenities. This is not assessed in the EIAR.

5.3 Hours of Operation

MetroLink is planned to operate 19 hours per day, 365 days a year. It is planned that there would 20 trains per hour at a frequency of three minutes between trains. Stations would be opened from 5.30 am to 00.30 every day of the year.

Further to comments on passing traffic, the operating hours mean that effectively, the new metro street running parallel to the station will become some form of thoroughfare at least 19 hours per day.

The drawing no. ML1-JAI-SRD-ROUT-XX-DR-Z-02090 – illustrates the proposed street level design. It is also not clear how the station concourse and area will be physically closed to the public outside of operating hours. Metallic rolling shutters are noisy. Both of these could affect the residential amenities of nearby neighbours.

We would also note that the Luas Green Line with which the Charlemont station interfaces closes at 11 pm on Sunday. Yet, it is proposed that Metro Link will operate until 00.30. There is no justification to operate the interchange for an extra hour when there is no Luas to interchange to.

5.4 Traffic and Transport

5.4.1 Modelling and Assessment

No local area modelling in undertaken of the impact upon the road network around the Charlemont Station. The assessment done as part of the EIAR (Appendix A9.2-B Traffic and Transport Assessment- Charlemont Station) fails to have regard to the most up-to-date Bus Connect plans. As with the construction phase, the assessment relies on a strategic assessment that does not take into account the local impacts. The figure below illustrates the road layout upon completion. The development creates a significant new link in the road network through the site linking Grand Parade with Dartmouth Road and Ranelagh Road. This creates a rat-run which will effectively bypass the Ranelagh Road/Grand Parade signalised traffic junction. This traffic movement has not been assessed. Indeed, the aforementioned appendix states at 4.1 that

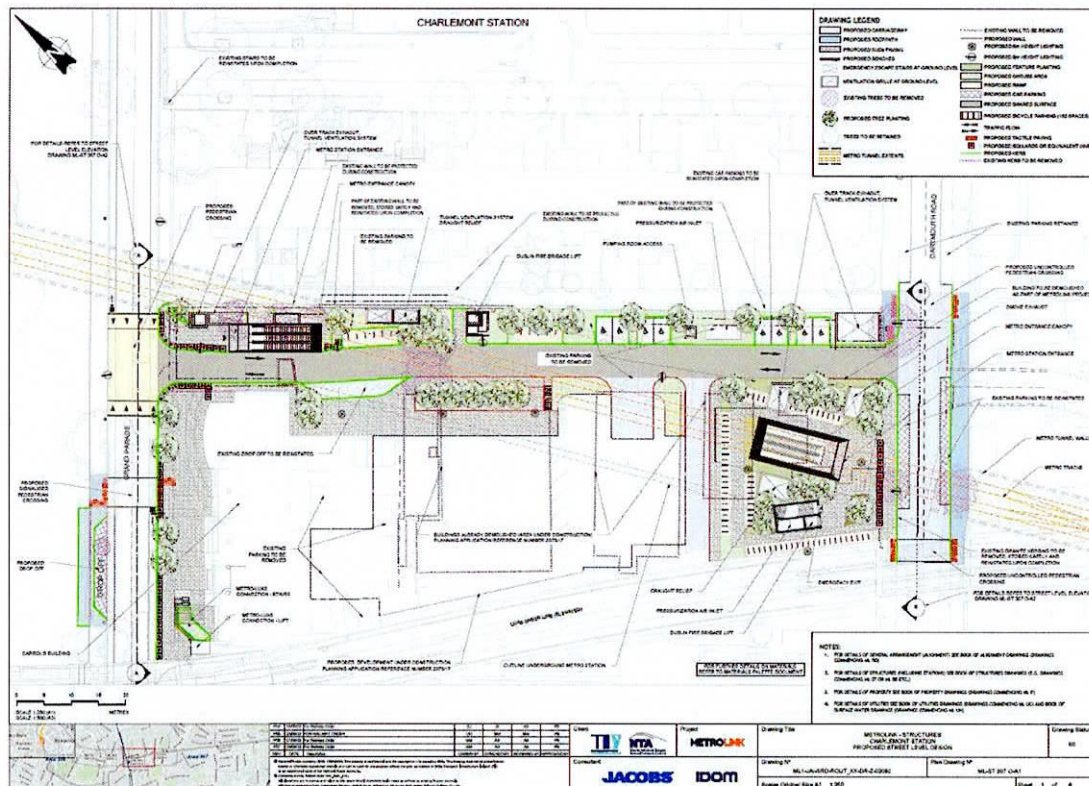
"There will be no vehicular access to the Charlemont Station during the Operational Phase, with the access road to the east of the station facilitating access to the office development parking areas. Charlemont Station proposal will not provide car parking facilities within the development area."

This is not however borne out by an examination of the submitted drawing no. ML1-JAI-SRD-ROUT_XX-DR-Z-02090.

5.4.2 Drop-Off, Pick Up and Interchange

The figure below illustrates the operational road and street layout around the station. General drop-off and pick up this major interchange have been further considered in the associated general submission. There is very limited drop-off or pick up facilities or proper interchange for taxi or future bus services. Given that the location of integration with bus services in this suburban location, it is likely that there will be a significant demand for such interchange facilities.

Figure 20: Surface and Traffic Layout



5.4.3 Pedestrian Movements

The figure below illustrates the level of pedestrian activity in and around the northern entrance to the station. This will give rise to a significant amount of activity in an around the detriment of residential amenities of those living in Dartmouth Square West.

Figure 21: Pedestrian Heat Map from Traffic and Transport Assessment

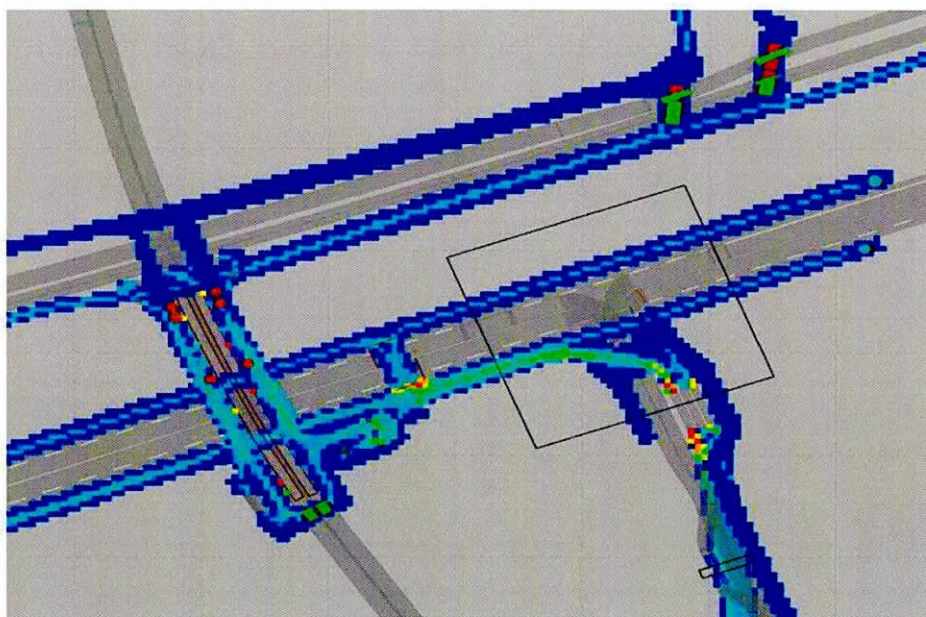


Figure 6.13: Level of Service heat map for Charlemont during 2050 AM peak

5.5 Impact upon Amenities

5.5.1 Anti-Social Behaviours

The residents have significant concerns that this major interchange station will attract anti-social behaviour for up to 19 hours a day. This is common with many European capital interchanges. This currently is a relatively quiet residential area that benefits from amenities, but the potential for late night arrivals, taxi pick-ups, drop-offs and anti-social behaviour would disturb these amenities and alter the nature of the area.

5.5.2 General Impacts

The overall impact of both the construction and operational phases of the project, in terms of noise, vibration, visual impacts, traffic, HGV movement, construction activity, operational emissions, anti-social behaviour and general activity around the station will be such as to severely and permanently **adversely affect the residential amenities of the residents listed in this submission**. The impacts will be so severe as to evidently be in material contravention of the Dublin City Development Plan zoning objective for the area, which is Z2: *"to protect and/or improve the amenities of residential conservation areas"*

6. PROPERTY ISSUES

6.1 Introduction

This section considers issues in relation to land take and property.

6.2 Compulsory Purchase Order

The subject railway order will give TII the right to initiate the compulsory purchase order (CPO) procedure. The parties to this submission who have been identified in the Book of Reference are detailed in Table 1 above. The properties are affected by permanent, temporary and sub-stratum compulsory purchase.

The assessment of compensation will generally fall under a number of headings of claim which can include the following:

- Value of land acquired
- Diminution in value of retained lands
- Costs resulting from acquisition
- Disturbance
- Loss of profits or goodwill
- Loss or depreciation of stock in trade
- Professional fees necessary for acquisition

The amount of the claim will follow the notice to treat. We accept that submissions in relation to compensation will not be considered by the Board as part of the RO application. We would point out that this submission highlights that there will be a significant loss of amenity of the properties which are the subject of the CPO and hence there will be a diminution in the value of retained land.

6.3 Rear Lane

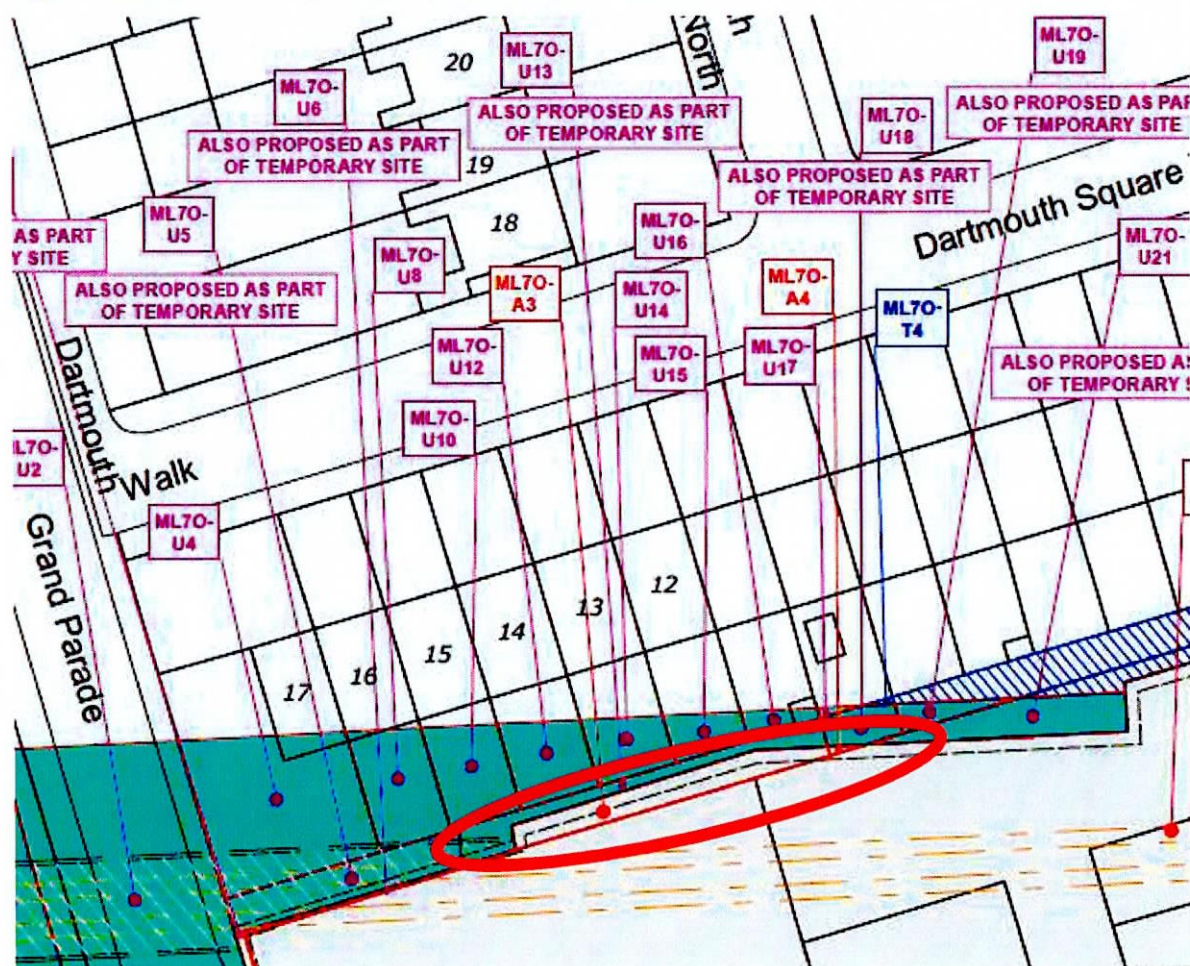
Under the proposed railway works of Dartmouth Square, the plans demarcate proposed permanent acquisition (ML 70-A3). The Metrolink proposal includes permanently acquiring a significant portion of the laneway from no. 11 to 15 inclusive with approximately 30% of the laneway width remaining at this location. This leaves c.800mm of space between the proposed permanent acquisition site area and the garden walls to properties no. 11-15 inclusive. In addition, the remainder of the laneway is due to be a temporary site.

On 29th October 2019, the National Transport Authority and the National Roads Authority Operating as Transport Infrastructure Ireland entered into an agreement with a number of residents of Dartmouth Square West. In entering this agreement, TII agreed to a position in advance of submitting this application.

The Application as proposed is in breach of the agreement. In the circumstances, it is submitted that TII ought to amend the application to ensure it complies with their obligations under this agreement.

The figure below highlights the area of permanent acquisition.

Figure 22: Permanent Acquisition of Lane (outlined in red)



6.4 Properties

The owner of no. 1 Dartmouth Square has not been named in the book of reference. However, the occupier has received the documentation issued by TII.

6.5 Devaluation of Properties

During the construction stage, there will be a severe impact upon property values. Section 21.3.5.1 of the EIAR states:

"The value of the properties may be impacted upon by various existing external forces which contribute to the degradation of that property. These can include high levels of noise, vibration, traffic or air pollution."

There is no assessment of the impact upon value of properties. Section 10.13.4 of the Non-Technical Summary merely states:

"Existing and planned future properties will benefit from being located in close proximity to a new permanent public transport system. Experience of the effects of the Luas Red and Green Lines on property prices along these lines would indicate that generally residential property values and land values in the study area will increase."

However, there is no evidence in the documentation to support this. The Planning and Development Act 2000 as amended specifically links the loss of amenity and the devaluation of property as a reason for refusal which excludes rights to compensation. It is only properties that are purchased as a result of the CPO associated with the Rail Order that can benefit from compensation. The State is not in a position to grant permission for development which will devalue property, as there is no mechanism for compensation in these circumstances. To grant permission where there is a loss of amenity, and an associated devaluation of property, would adversely affect the right to enjoy one's dwelling and property rights as protected under the Constitution and the European Convention on Human Rights. The intensity and duration of construction and the ongoing impacts during operation, including the proximity to the Terminus to a number of the dwellings, are all highly likely to impact negatively on the value of the affected properties. The potential loss of part of the rear laneway will also have a major detrimental effect on the amenities of the residents of Dartmouth Squares West and value of their properties. There has been no examination to the adverse impacts these proposals will have on the valuation of properties at Dartmouth Square West.

6.6 Temporary Relocation

Effectively some, or all of the residents listed in this submission may have to be temporarily relocated at TII's expense. Indeed, given the 9-year duration of the construction programme, this would effectively be a permanent relocation, which is wholly unacceptable to the residents of this submission.

6.7 Required Purchase at Market Value

The residents of this subject submission do not wish for their homes to be purchased at the market rate.

6.8 Costs

Representation and the costs of this submission by a land-owner affected by a CPO will be a legitimate cost incurred.

7. SUMMARY AND REQUESTED AMENDMENTS

7.1 Summary of Submission Points

The main points of this submission can be summarised as follows:

Policy and Procedure

- The submission is supportive of the CDCG general submission which seeks the removal of the Tara Street to Charlemont section of the rail order.
- Specifically the Charlemont station should not form part of the rail order as it will severely and demonstrably adversely affect the residential amenities of the Dartmouth Square residents both during the construction phase and the operational phase.
- The deep construction required immediately adjacent to residential houses is wholly inappropriate and will result in a very severe loss of amenity and devaluation of property.

Construction Phase

- The construction noise impact assessment is wholly inadequate as it fails to consider the internal noise impact over a 9-year period, defers assessments to the design and construction stage, fails to properly assess night-time impacts, and incorrectly categorises impacts as very significant as opposed profound.
- The EIAR fails to properly assess the settlement impacts of the tunnelling upon the houses on Dartmouth Square West and there may be settlement of between 10mm and 30 mm which would severely affect these protected buildings.
- The hydrogeological impact assessment is inadequate as it has not been based upon local bore hole logs and no local impact assessment has been undertaken around the Charlemont station.
- Construction of the intervention tunnel will give rise to significant noise and disturbance, 24/7 during the period of its construction.
- The construction phase will last over 9 years. This is a medium-term effect which has not been properly considered in the EIAR.
- The hours of construction proposed include 12 hour working days and significant element of 24 hour working during certain periods of the contract.
- The alternative construction compound has not been properly assessed and given the impacts of that proposed, it is incumbent upon TII to properly assess this and propose it as a mitigating measure.
- Additional traffic will be generated during construction and the rediverting of traffic will have an adverse effect upon the local road network. HGV traffic on quiet residential roads will have a severe impact upon amenities.
- No local traffic modelling has been undertaken as part of the assessment and the impact upon pedestrians has not been properly assessed.
- There will a severe impact upon human health which has not been properly assessed.

- Overall, the proposed mitigation measures do not mitigate the profound impact that the proposed scheme will have on residents of Dartmouth Square given the associated scale and time period of the proposed development.

Operational Phase

- The operation of the trains and associated ventilation systems has the potential to adversely affect the amenities of the residents and has not been properly assessed.
- The post completion permanent arrangement will result in significant rat-running between Ranelagh Road and Grand Parade to the detriment of the residents on Dartmouth Square West. No adequate drop-off, pick-up facilities, taxi ranks, or interchange with other services are proposed.
- The overall impact of the both the construction and operational phases of the project, in terms of noise, vibration, visual impacts, traffic, HGV movement, construction activity, operational emissions, anti-social behaviour and general activity around the station will be such as to severely and permanently adversely affect the residential amenities of the residents listed in this submission. The impacts will be so severe as to evidently be in material contravention of the Dublin City Development Plan zoning objective for the area, which is Z2: "to protect and/or improve the amenities of residential conservation areas."
- The mitigation measures proposed do not meaningfully mitigate the significant adverse impacts during operation for residents of Dartmouth Square West.

Property Issues

- The permanent acquisition of part of the rear laneway will legally impede rights of access to the rear of properties.
- The permanent loss of part of the laneway will inevitably impact upon the amenity and value of retained land/property.
- The development will inevitably impact upon the value of retained land/property.
- There will be a significant devaluation in property and the Board must refuse this element of the railway order.
- Owners' costs of engaging in the process should be borne by TII.

7.2 Requested Amendment and Conditions

The parties to this submission fully support the requested amendments in the General submission in relation to the omission of the section between Tara Street and Charlemont and the making of a separate railway order application for a section between Tara Street and St. Stephens Green. This element should effectively be refused for the reasons outlined above.

The EIAR is wholly inadequate and does not properly assess the impacts of the development in accordance with the requirements of the Directive.

Request for further amendments and conditions are made without prejudice to this fundamental point.

Requested amendments and conditions are as follows:

1. Properly designed drop-off and pick up on Grand Parade.

2. Apply appropriate and binding conditions in relation to noise and vibration limits and based upon impacts upon internal noise and not external facades.
3. Restrict construction hours to 07:30 hrs to 18:00 hrs Monday to Friday, 0:800 hrs to 13:00 hrs on Saturday with no working outside of these hours. No night-time working should be permitted.
4. The application should be consistent with the agreed terms between TII and the residents of Dartmouth Square West.

Appendix 1-List of Residents

House Number	Owner
1	Niall Parsons
3	John Ryan & Grace Maguire
5	Lorraine Mulligan & Conor Power
7A	Geraldine Ann Cusack
7	Geraldine O'Connell Cusack
8	Caroline O'Connor & Michael Lillis
9	Teresa Reid & Denis McLoughlin
10	Muiris O'Dwyer & Helena Kelly
11	Leo Crehan & Anne Crehan
12	Herbert Mulligan & Deirdre Mulligan
13	Mary Keating
14	Elizabeth Vandenberghe & Godfrey Gillett
15	John Conway and Orlaith McCarthy
16	Angela & Manuel Ryan



20 Fitzwilliam Place, Dublin 2, D02YV58,
Ireland



Phone. +353 1 6762594



planning@mdb.ie



www.mdb.ie

