Our Case Number: ABP-316119-23

Your Reference: Residents of Kilmainham Square Apartments

An Bord Pleanála

Downey Chartered Town Planners
29 Merrion Square North
Dublin 2
D02 RW64

Date: 12 March 2024

Re: DART+ South West Electrified Heavy Railway Order - Hazelhatch & Celbridge Station to Heuston Station, and Hesuton Station to Glasnevin
County Dublin and County Kildare

Dear Sir / Madam,

An Bord Pleanála has received your recent letter in relation to the above mentioned case. The contents of your letter have been noted.

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 relation to the matter please contact the undersigned officer of the Board at laps@pleanala.ie

Please quote the above mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

Lauren Griffin
Executive Officer
Direct Line: 01-8737244

RA03

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64 Sráid Maoilbhríde
Baile Átha Cliath 1
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64 Marlborough Street
Dublin 1
D01 V902

Lauren Griffin

From: Lauren Griffin
Sent: Monday 11 March 2024 15:09
To: Elahe Saki
Subject: RE: ABP-316119-23 DART+ South West Electrified Heavy Railway Order on behalf of Kilmainham Square Apartments

A Chara,

The Board acknowledges receipt of your email, official acknowledgement will issue in due course.

Kind regards,

Lauren

From: Elahe Saki <elahe.saki@downeyplanning.ie>
Sent: Monday 11 March 2024 15:01
To: Lauren Griffin <lauren.griffin@pleanala.ie>
Subject: FW: ABP-316119-23 DART+ South West Electrified Heavy Railway Order on behalf of Kilmainham Square Apartments

> **Caution:** This is an **External Email** and may have malicious content. Please take care when clicking links or opening attachments. When in doubt, contact the ICT Helpdesk.

Hi Lauren,

Please see below for your attention. I mistakenly used an incorrect email address on my first email. Apologies if any inconvenience.

From: Elahe Saki
Sent: Monday, March 11, 2024 1:24 PM
To: sids@pleanala.ie; l.griffin@pleanala.ie
Subject: ABP-316119-23 DART+ South West Electrified Heavy Railway Order on behalf of Kilmainham Square Apartments [Filed 11 Mar 2024 13:24]

Dear colleague,

Following the An Bord Pleanála's latest correspondence dated 6th February 2024, DOWNEY, Chartered Town Planners, 29 Merrion Square, D02 RW64, on behalf of our clients, residents of Kilmainham Square Apartments, hereby wish to lodge a further submission in relation to the CIÉ/IÉ response to submissions made to DART+ South West Electrified Heavy Railway Order. Noted a copy of the Board's correspondence is also attached for your consideration.

Every effort has been made to ensure that the submission is error-free and accurate. However, there may be instances within the submission where typographical errors or minor errors may occur. When minor in nature, any such cases are unlikely to have any material impact on the overall and final findings contained in the submission.

In light of the above, DOWNEY respectfully request that An Bord Pleanála take into consideration our clients' submission when assessing the DART+ South West Electrified Heavy Railway Order.

I trust the above is in order, however, if any doubts, please do not hesitate to contact me.

Kind Regards,
Elahe

Elahe Saki MIPI
Senior Planner

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29 Merrion Square, D02RW64

DOWNEY

Property: Kilmainham Square Mixed-Use Development of 231 Units (The Chocolate Factory Property Management Company Ltd. By Guarantee)

Location: Inchicore Road, Kilmainham, Dublin 8

Submission to the Draft Railway Order [DART+ South West Electrified Heavy Railway Order 2023]

March 2024

For consideration by
An Bord Pleanála

DOWNEY
29 Merrion Square, D02 RW64

DART+
South West

Planning Report

February 2023

2040 NTA Iarnród Éireann Irish Rail

EXECUTIVE SUMMARY

With reference to the submission made by Córas Iompair Éireann/Iarnród Éireann to An Bord Pleanála regarding the observations made to the Board over the course of public consultation of the Draft Railway Order (DART+ South West Electrified Heavy Railway Order 2023), our clients would like to express their sincere appreciation for the provided response. They also wish to emphasise their support for this vital project and acknowledge its importance in establishing a sustainable, safe, efficient, integrated, and accessible public transport service connecting Dublin City Centre with Drogheda, Maynooth, Dunboyne, Celbridge, and Greystones.

Considering the absence of an oral hearing for the proposed extension and upgrade of the DART+ South West railway, DOWNEY have prepared this submission on behalf of our clients, the 227 apartments and 4 commercial units at Kilmainham Square Mixed-Use Developments on Inchicore Road, Kilmainham, Dublin 8. The purpose of this submission is to underscore their primary concerns and respectfully request the Board's thorough consideration of these matters during the evaluation process.

With respect to this property, our clients are seeking:

(1) To provide clarity regarding site selection for carrying out noise assessment in relation to the Kilmainham Square Apartments, particularly the methodology employed to select floors 3 and 9, despite the significant impact of the railway on 87 units directly facing the railway line, particularly with balconies on ground floor apartments situated just 7 meters from the railway track.

(2) To provide clarity regarding the extent of noise assessment given the close proximity of the Kilmainham Square Apartments, and whether both internal and external noise impacts have been fully assessed and addressed during both construction and operational phases of the project.

(3) To provide clarity on whether the EIAR considered both average noise levels and lowest noise levels during the preparation of the noise baseline, and if not, how could a more conservative approach incorporating both metrics be adopted to better understand the range of noise exposure and to facilitate more effective mitigation measures.

(4) To provide clarity regarding negligible impact of resilient rail as stated in the response document prepared by CIÉ/IÉ.

(5) To address the recently permitted mixed-use development of 578 no. units at Emmet Road from a cumulative impact perspective within the EIAR, since this was a live application at the time of lodging the DART+ upgrade application.

(6) To ensure liaison of CIÉ/IÉ and the future contractor with the residents of the Kilmainham Square Apartments to ensure consideration of all concerns and issues and to facilitate successful delivery of the railway.

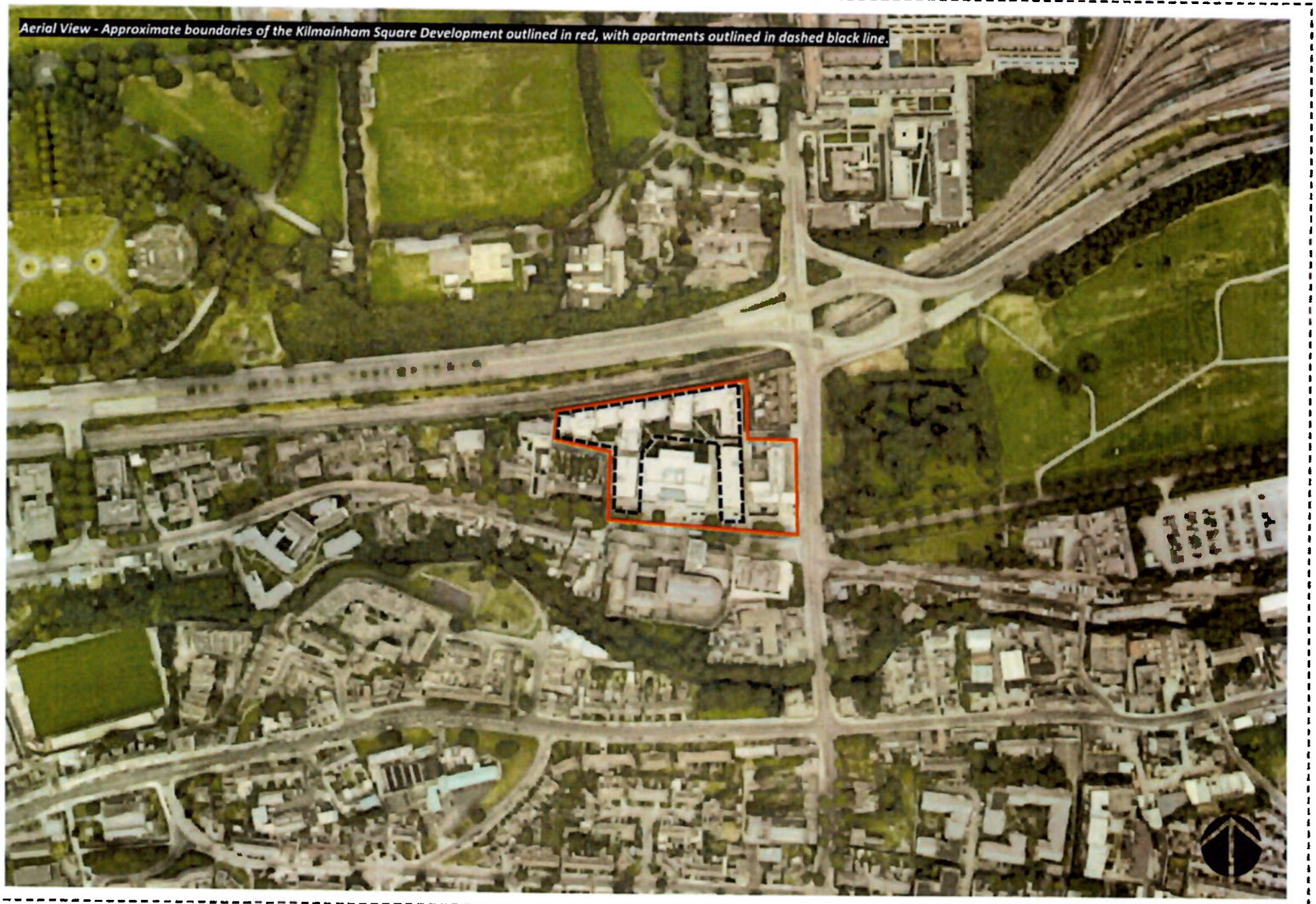

Aerial View - Approximate boundaries of the Kilmainham Square Development outlined in red, with apartments outlined in dashed black line.

TABLE OF CONTENTS

This submission is made on foot of the Córas Iompair Éireann/Iarnród Éireann response to observations made to An Bord Pleanála during the course of public consultation of Draft Railway Order (DART+ South West Electrified Heavy Railway Order 2023). We would respectfully request that An Bord Pleanála consider the content within this submission. DOWNEY would like to thank the Board for the opportunity to make this submission, on behalf of our clients at The Kilmainham Square [The Old Chocolate Factory] Development at Inchicore Road, Kilmainham, Dublin 8.

DOWNEY Planning Document Control			
	Name	**Date**	**Version**
Prepared by	Elahe Saki MIPI Senior Planner	07/03/2024	V_01_DRAFT
Approved by	Eva Bridgeman MIPI Director	07/03/2024	V_01_FINAL

1.0 INTRODUCTION

This submission has been prepared by DOWNEY, Chartered Town Planners, 29 Merrion Square, D02 RW64, on behalf of our clients, The Old Chocolate Factory 227 Residential Apartments and 4 Commercial Units at Inchicore Road, Kilmainham, Dublin 8, which relates to the submission made by Córas Iompair Éireann (CIÉ)/Iarnród Éireann (IÉ) to An Bord Pleanála in response to the observations made during the course of public consultation of Draft Railway Order (DART+ South West Electrified Heavy Railway Order 2023). Our clients wish to extend their sincere appreciation for the response provided. Enclosed with this submission, we refer to the receipt of their initial submission to the Board, requesting the Board's attention to the enclosed document.

With reference to the Draft Railway Order (DART+ South West Electrified Heavy Railway Order 2023), our clients welcome this strategic project and recognises the significance of its delivery to provide for a sustainable, safe, efficient, integrated, and accessible public transport service between Hazelhatch and Celbridge Station (County Kildare) to Heuston Station Dublin.

2.0 OVERVIEW OF THE DRAFT RAILWAY ORDER

On 22nd March 2023, governed by Section 37 of the Transport (Railway Infrastructure) Act 2001 (as amended and substituted) ("the 2001 Act" hereinafter) and proposed within the definition of Strategic Infrastructure Development (SID) under Section 2 of the Planning and Development Act 2000 (as amended) ("the 2000 Act" hereinafter), the Córas Iompair Éireann (CIÉ hereinafter) submitted the Draft Railway Order for the DART+ South West Electrified Heavy Railway Order 2023 ("the proposed Project" hereinafter) to An Bord Pleanála.

Figure 1. The Proposed Project Roadmap (dates sourced from the Planning Report enclosed with the application)

With an objective to *"support urban compact growth and contribute to reducing transport congestion and emissions in Dublin by enabling modernised high-quality commuter rail services between Dublin City Centre and the areas of Drogheda, Maynooth, Dunboyne, Celbridge and Greystones"* and aiming to *"provide a sustainable, safe, efficient, integrated and accessible public transport service along these corridors"*, the proposed Project seeks to deliver an electrified network, with increased passenger capacity and enhanced train service between Hazelhatch & Celbridge Station to Heuston Station on the Cork Mainline, and Heuston Station to Glasnevin Junction via the Phoenix Park Tunnel Branch Line (Great Southern and Western Rail Line - GSWR). The works extend across three administrative areas/

local authority areas, including Kildare, South Dublin, and Dublin City. The total length of the proposed development is approximately 20km, including c. 16km for the Cork Mainline and 4km for the Phoenix Park Tunnel Branch Line.

Figure 2. Extent of the DART+ South West Project

The proposed Project will complete four tracking between Park West & Cherry Orchard Station and Heuston Station and will also re-signal and electrify the route. The completion of the four tracking will remove a significant existing constraint on the line (i.e., where four tracks reduce to two), which is currently limiting the number of train services that can operate on this route. DART+ South West will also deliver track improvements along the Phoenix Park Tunnel Branch Line, which will allow a greater number of trains to access the city centre. Upon completion of DART+ South West electrification, new electric DART trains will be used on this railway corridor.

The Project will require modernisation and modifications to the existing railway line. A range of new elements, general linear works and ancillary works (drainage and utility diversions) are required along the entire length of the railway corridor to facilitate the electrification of the line and the upgrade of the existing network. Additionally, specific elements are required at specific locations along the route such as electrical substations to provide power to the network.

The DART+ South West Project requires alterations to the track as follows:

- Widening of the railway corridor and completion of four-tracking between Park West & Cherry Orchard Station and Heuston Station. In this regard, a continuous four track layout along the Cork Mainline from Hazelhatch to Heuston, comprising two Slow electrified lines (northern tracks) and two Fast non-electrified lines will be provided. There are currently no electrified lines in the area;
- Track lowering to achieve the required vertical clearance under bridges to accommodate the Overhead Line Equipment (OHLE);
- New / additional crossovers (when a train switches from one track to another across points) to accommodate the new operational model;
- Sidings modifications at Inchicore Works, to allow continuity of the operations;
- Track geometry improvements (within the current corridor's limits) to remove existing speed restrictions; and
- Suitable and safe access for the rail maintenance teams is required to be provided.

The project includes for a new station, located within CIÉ lands at Heuston Station (at the location of the existing Platform 10 of Heuston Station); The design of the DART+ South West Project makes passive provision for potential future stations at Kylemore and Cabra including track alignments and other infrastructure which would provide for the delivery of these stations in the future. Iarnród Éireann has committed to developing these stations in the future to provide improved public transport.

The Draft Railway Order application 2023 is a Draft Order, and should the application be approved by An Bord Pleanála, further detailed design will be submitted which will require further consideration and approval. Factors such as the internal uses of the properties, their construction methods, age and historical importance and the effect of construction on these sensitivities has not been assessed as part of the Project thus far. Additional consideration needs to be given to the potential effects on the built environment before a route and construction method can be confirmed.

The statutory consultation period commenced on the 22nd of March 2023, with a 6-week timeframe for submissions, i.e., the closing date for submissions was the 16th of May 2023 at 5.30pm.

In February 2024, CIÉ/IÉ response to observations were made available through the Board's website. As outlined in the response document, a total of 120 submissions were received and accepted by the Board during the course of public consultation, all divided into the 4 geographical zones, where our clients' property, Kilmainham Square Apartments, fall within Zone B. The initial submission made on behalf of Kilmainham Square Apartments is acknowledged under Ref. 105 within the CIE/IE response (pages 349-407). DOWNEY, on behalf of our clients, the Kilmainham Square Apartments, are taking the opportunity to make a further submission in response to the CIÉ/IÉ response for the consideration of the Board.

3.0 THE KILMAINHAM SQUARE RESIDENTIAL DEVELOPMENT

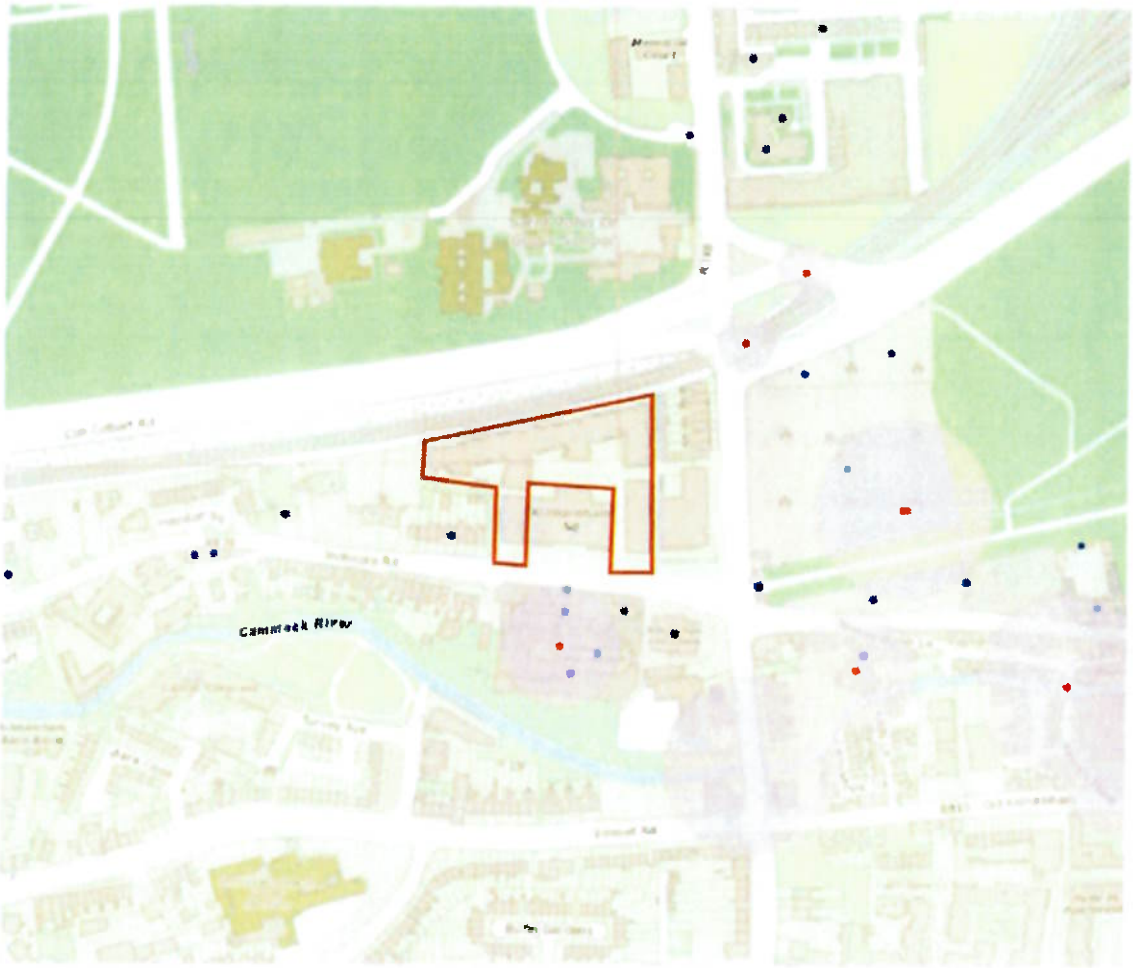


Figure 3. Site Location Map (approximate boundaries of the lands outlined in red with buildings and structures on the National Inventory of Architectural Heritage (NIAH) marked in blue - Map extract from archaeology.ie with Ordnance Survey Base-map)

3.1 Property Location & Description

The Kilmainham Square Residential Development on the 1.6ha site of the former Rowntree Chocolate Factory opposite Kilmainham Gaol, are strategically located on the western side of Dublin City Centre at Inchicore, Kilmainham, Dublin 8, with access to M50 motorway, N4 and N7 national primary roads, situated within 0.7km of the Red Luas line at Suir Road Luas stop which provides a frequent tram service to Dublin City Centre.

Kilmainham Square is a modern mixed-use development of approximately 36,000sqm comprising of 227 no. apartments in 3 blocks including a feature 11 storey main block, 8,000sqm high specification 5 storey office building block, retail units, and a four-star hotel which was developed by Lalco and constructed by John Sisk and Son in 2006.

The Kilmainham Square Development is bounded to the south by Inchicore Road, and to the north by the DART+ South West line. The development is anchored by the Hilton Hotel. Adjoining occupiers within the development include Heineken, Parexel and Klas Telecoms.

Figure 4. The Bird View of the Kilmainham Square Development

Figure 5. Street View of the Kilmainham Square Development from the Inchicore Road (photo taken on 9/5/2023)

Figure 6. The Kilmainham Square Apartments in relation to DART railway at current situation, whereby 87 no. units are directly facing onto the railway (photo taken on 9/5/2023)

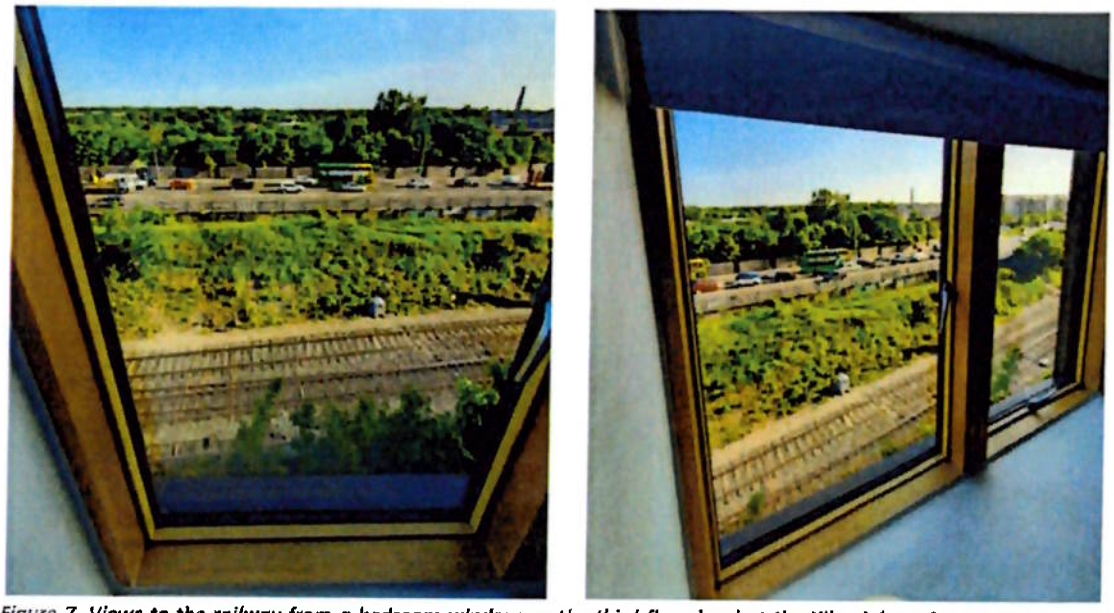


Figure 7. Views to the railway from a bedroom window on the third-floor level at the Kilmainham Square Apartments showcasing close proximity of the apartments to the railway track (photos taken on 15/5/2023)

As shown in the photo above, **87 no. units within the Kilmainham Square Development are directly facing onto the DART+ South West railway line, whereby the balconies of the ground floor apartments at this section are situated 7m from the railway track**.

3.2 Planning History Pertaining to the Property

In terms of planning history pertaining to the site, lodged under **DCC Reg. Ref. 0304/03 (ABP Ref. PL29S.202832)** and by Order dated 15th April 2003, **Dublin City Council granted permission** to Charmside Ltd. for a mixed-use development the site at Nos. 34-38 Inchicore Road, Kilmainham, Dublin 8 in five blocks comprising a total of 46,935sqm of accommodation approximately (Including lower basement level of 10,982sqm). The development will consist of the change of use of the site from industrial and ancillary uses to office, residential, 'live-work' units, apart-hotel, retail uses, archive and exhibition use (Including tourist information office) and childcare facility. Noted that the application was accompanied by an Environmental Impact Statement. Subsequently, 3 no. third-party appeals were lodged against the Council's decision, whereby **by the Order dated 15th September 2003, An Bord Pleanála granted permission** for this development with 25 no. conditions attached. This was followed by several planning applications since 2005 to amend the parent permission and facilitate development of the site according to the emerging requirements at the time.

In terms of recent planning history on the wider context of the site, it is understood that there is a permission for a mixed-use scheme (ABP-314791-22) on approximately 4.9ha lands at the Emmet Road, Inchicore. This is to provide 578 no. residential units, library/community hub, childcare facility, supermarket, 5 no. retail units, and 2 no. café/ restaurant units with open space and associated site works. This potential development site is located within 800m buffer zone off the Kilmainham Square Apartments, as illustrated below.

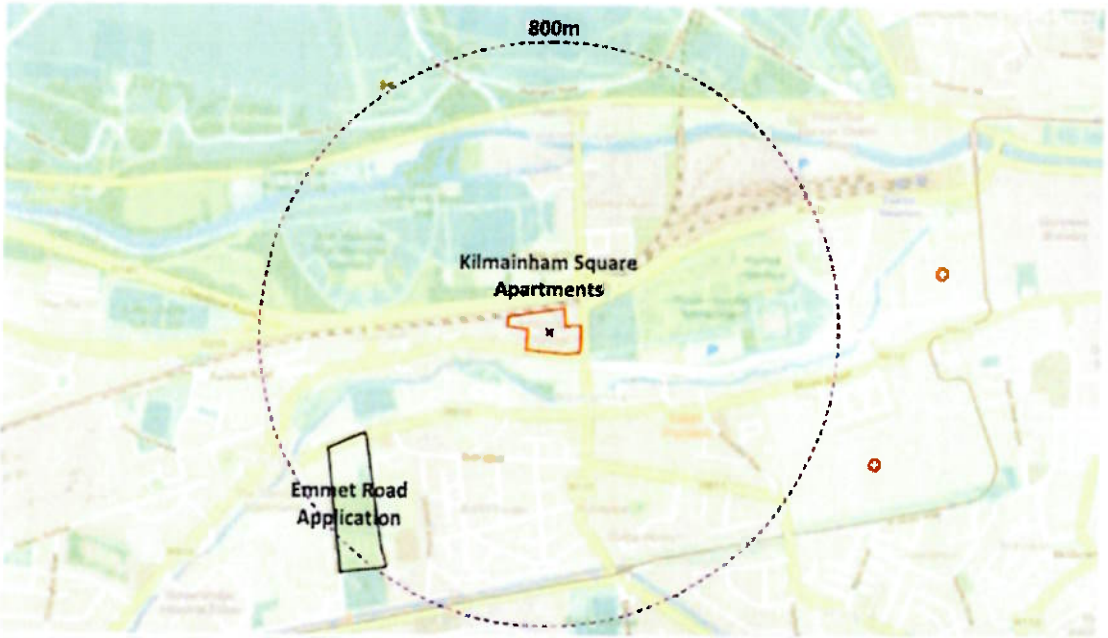


Figure 8. Location of Emmet Road Permitted Development in relation to the Kilmainham Square Development (source: ArcGIS online utilisation by DOWNEY)

This is suggested to have considerable implications for the Environmental Impact Assessment accompanying the application on the DART+ South West, whereby a cumulative environmental impact needs to be examined. We acknowledge that permission for this development was not granted at the time of lodging the DART+ South West application. However, considering the

significant scale of the Emmet Road residential development situated in proximity to the railway and Kilmainham Square Apartments, it is essential to incorporate it into the assessment process to comprehensively capture and evaluate the cumulative impact, particularly regarding traffic, noise, vibration and dust. This approach ensures a holistic understanding of the environmental implications associated with the proposed development and enables informed decision-making regarding its viability and potential effects on the surrounding area.

4.0 ENGINEERING CONSIDERATIONS

This Section covers the technical information from an engineering perspective relating to the property.

4.1 Railway Works Plan

The DART+ South West railway bounds the northern boundary of the Kilmainham Square Apartments, passing approximately 7m from the front of the apartment blocks. The works layout plan in relation to the site has been specified on the drawing Site Layout Plan No. 13, Book 1 of the Order drawings.

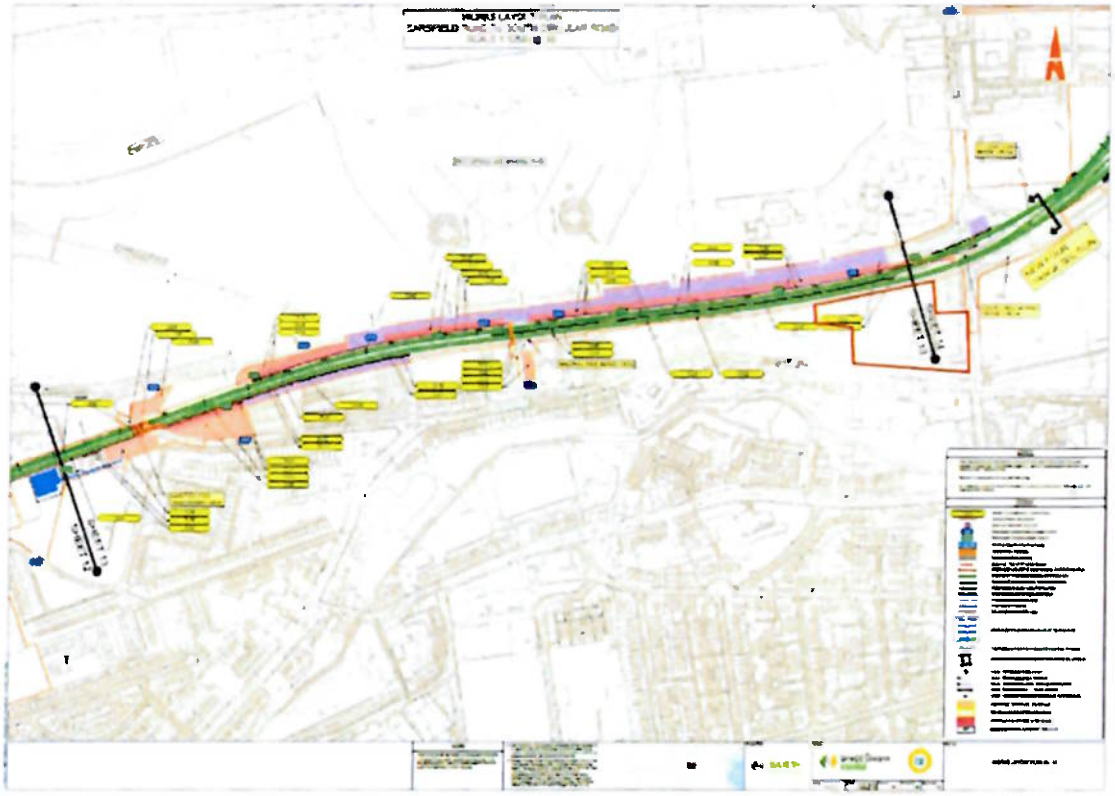


Figure 9. Railway Works Plan for the section of the railway adjacent to the subject property (Site Layout Plan No. 13)

As marked up on the drawing, work planned at this section of the road involves proposed track works for electrified and not electrified extension of the railway (green continuous and dashed line respectively), as well as a proposed retaining wall to the northern boundary of the railway casement.

There is also *"reconstruction of existing roads over the area of the new 'cut and cover' buried portal structure located at South Circular road Bridge (OBC1A). This will include median and junction approach islands. Works will include the reinstatement of the road drainage system and resurfacing of*

the junction with associated lane marking. The works will entail extensive temporary traffic management measures, including lane diversions and temporary lane closures and temporary and permanent utility diversions" (work detail no. 13.31 on the drawing).

Outlined in Chapter of the EIAR accompanying the Draft Order, *"The construction of (OBC1A) will require a minimum of 2 no. main phases of traffic management and associated construction works:*

- *Construct new western section of the structure (offline, but necessitates access using the first lane (Bus Lane) of the Con Colbert Road;*
- *Divert all utilities and traffic to the new western section;*
- *Construct remaining part of the box structure to the east of the new section; and*
- *Either leave utilities in place on the western section or divert back to road corridor.*

H4a Containment Parapets will be installed to a height of approximately 2.4m above the footpath to the eastern end (exit) of the structure to match the existing height of parapet wall."

Figure 10. South Circular Road Junction Works (extracted from Chapter 5 of the EIAR, page. 109)

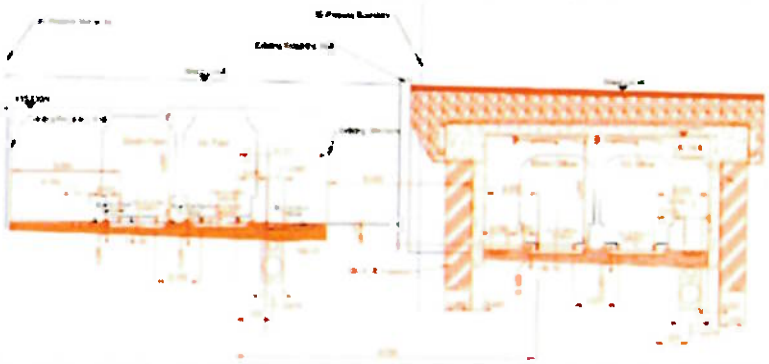


Figure 11. South Circular Road Bridge (OBC1) and New Cut and Cover Structure (OBC1A) – Cross section at CH 9+401, View Facing West (extracted from Chapter 5 of the EIAR, page. 109)

Moreover, there is *"installation of a new 'cut-and-cover' buried portal structure (OBC1A) to accommodate two new railway tracks and electrification of same. This will include piling of the portal abutments under the road section. Construction of the roof slab elements, waterproofing and backfilling over the structure. All parapets and corridor boundary walls affected will be reconstructed over the new structure. A pedestrian access point (for maintenance) will be created from a new maintenance parking platform on the structure"* (work detail no. 13.32 on the drawing).

In terms of the new retaining wall at this section of the railway, the existing cut slope will be widened toward Con Colbert Road and the top of the wall will be c. 4m from the road once complete. To build the retaining wall, in this area, requires the existing road/rail corridor boundary wall to be demolished. The following provides further details regarding the new retaining wall.

Chainage	Location	Proposed Retaining Wall	Height	New/Replaced
10+240 – 9+510	Con Colbert Road to South Circular Road Bridge	Secant Wall + Secant wall anchors	4.6m – 10.2m high	New
9+400	South Circular Road	Secant Wall + Secant wall anchors	8.2m – 10.2m high	New

Figure 12. New / Replacement Retaining Walls (Northern Perimeter) (extracted from Chapter 5 of EIAR, page 113)

All works will be facilitated via a temporary compound located to the northern boundary of the railway casement that is highlighted in red on the drawing.

4.2 Railway Property Plans

As shown below on the drawing Property Plan No. 13, Book 2 of the Order drawings, the Kilmainham Square Apartments will be exposed to the proposed temporary land acquisition highlighted in blue, along with the substratum land acquisition hashed in red, all stretching along the northern boundary of the railway casement.

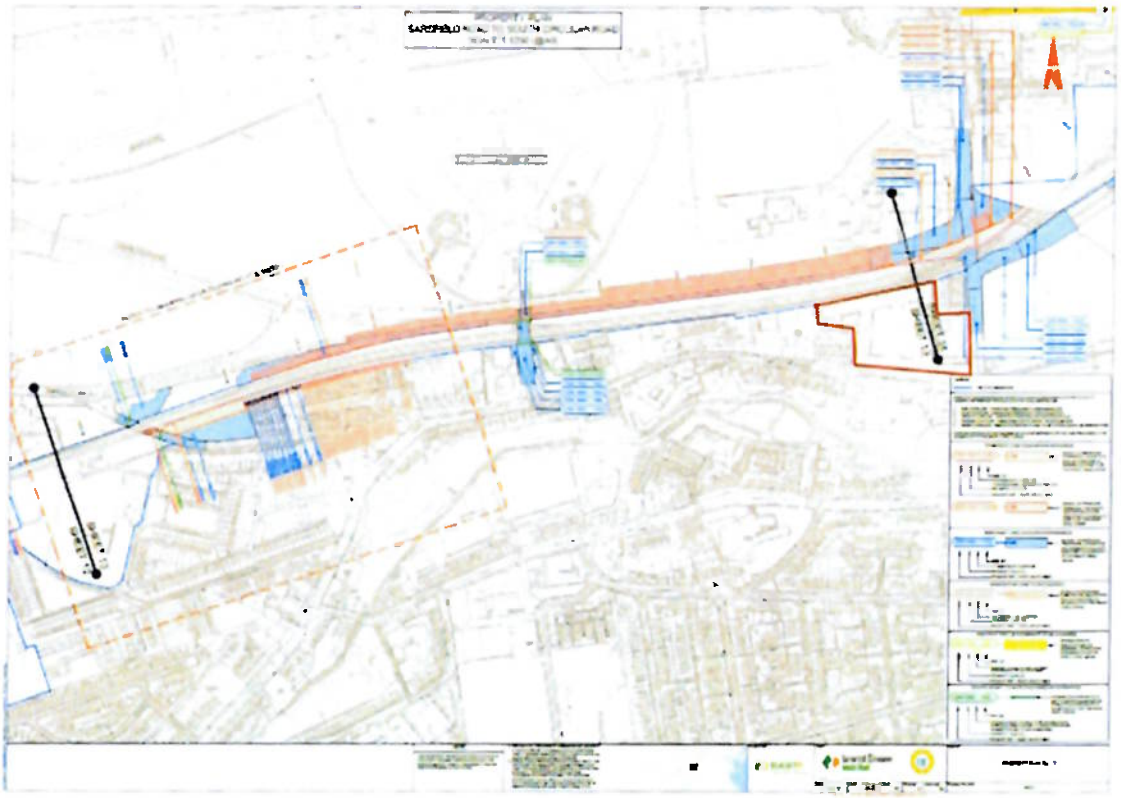


Figure 13. Property Plan for the section of the railway adjacent to the subject property (Property Plan No. 13)

4.3 Railway Structures Plans (Linear Works)

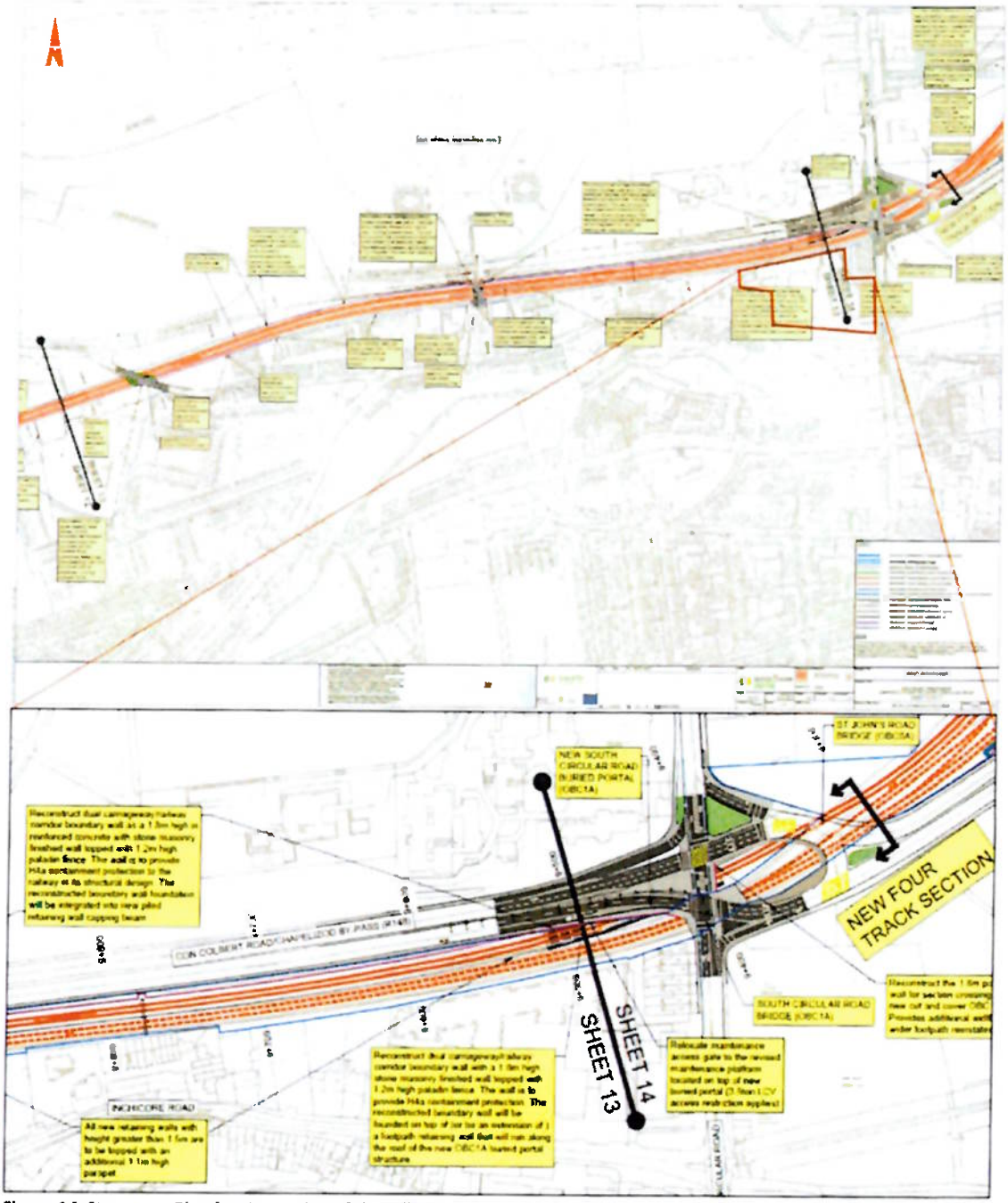


Figure 14. Structures Plan for the section of the railway adjacent to the subject property (drawing DP-04-23-DWG-RO-TTA-18898)

As shown on the above drawing Structures Plan – Boundary Treatment (Sheet 13 of 17), Book 3 of the Order drawings, to facilitate the extension and upgrade of DART+ South West in relation to the subject site at Kilmainham Square Apartments, it involves re-construction of: (1) dual carriageway/railway corridor boundary wall with a 1.8m high stone masonry finished wall topped with 1.2m high paladin fence. The wall is to provide H4a containment protection. The reconstructed boundary wall will be

founded on top of (or be an extension of) a footpath retaining wall that will run along the roof of the new OBC1A buried portal structure; (2) dual carriageway/railway corridor boundary wall as a 1.8m high in reinforced concrete with stone masonry finished wall topped with 1.2m high paladin fence. The wall is to provide H4a containment protection to the railway in its structural design. The reconstructed boundary wall foundation will be integrated into new piled retaining wall capping beam; and (3) relocation of the maintenance access gate to the revised maintenance platform located on top of new buried portal.

4.4 Construction Programme

Outlined in the Chapter 5 of the EIAR accompanying the Draft Order, the overall construction programme is expected to take 50 months and the current expectation is that construction will commence in mid-2025, subject to the necessary approvals. The indicative construction programme is provided below.

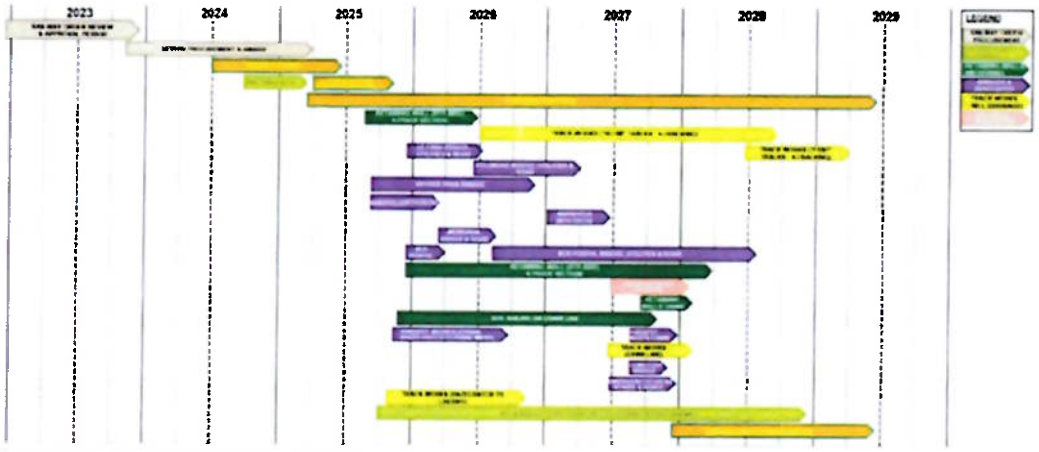


Figure 15. Indicative Construction Programme

The programme is based on a 10-hour working day, Monday to Friday. Specific construction activities will require variations from that, these include:

- Preparatory works that will require night-time working to create working platforms and safe zones of work;
- Piling: 8am to 6pm;
- Turnouts installation and removal: overnight hours;
- Heuston platforms 1 to 6:9 days shutdown;
- Heuston platforms 7 and 8:4 days shutdown;
- Wall between existing and new lines between South Circular Road junction and Memorial Road, undertaken over a series of night-time closures:
- Hazelhatch & Celbridge Station: 54/72-hour closure; and
- Tie in works: will require overnight work or blockades.

Outlined in the Draft Order, 12 stages have been identified for the construction phase to represent changes to track and signalling arrangements proposed to bring the construction to a final conclusion. The stages will be evolved during the development of the construction stage of the development.

5.0 POTENTIAL IMPACTS ON THE PROPERTY

DOWNEY have reviewed the response document prepared by CIÉ/IÉ and with regard to our clients' initial submission and their key concerns. While it is acknowledged that CIÉ/IÉ has effectively addressed certain issues, there remain outstanding matters that our clients wish to highlight to the Board during the assessment of the application. This is summarised in line with the numbering and format provided in the CIE response document.

5.1 ITEM 4. Noise Levels

Outlined in our clients' initial submission, the noise data has been represented in LAeq, 16hr, a parameter that is not representative of the road noise. WHO Guidelines and the European Noise Directive (END) recommend the parameter LDEN to represent the noise from railways and in the absence of national criteria is arguable a more appropriate criteria, enabling integration of this assessment to the nationally required strategic noise mapping for major rail, road, airports and industry.

In response to that, CIÉ/IÉ outlines that *"There is no statutory Irish guidance specifying airborne noise levels from rail operations. In the absence of specific noise limits, reference has been made to guidance documents on environmental noise and precedence from other urban rail projects.*

It is acknowledged that the World Health Organisation (WHO) published Environmental Noise Guidelines for the European Region in October 2018 and this is referenced in Chapter 14 of the EIAR. However, The WHO guideline values are recommended to serve as the basis for a policymaking process to allow evidence based public health orientated recommendations."

Our response:

While it is recognised that there is no specific statutory Irish guidance outlining airborne noise levels from rail operations, the proximity of the Apartments to the railway, coupled with the ongoing junction works, underscores the importance of conducting thorough internal and external noise assessments during both construction and operation phases of the Project. Currently, the scope of assessments is limited to external evaluations, which were conducted at 18 locations along the railway, with only two locations at Kilmainham Square (including floors 3 and 9).

This situation is concerning, especially given that 87 units within the Kilmainham Square Apartments directly face the railway line. Notably, the balconies of the ground floor apartments in this section are a mere 7 meters from the railway track. It is imperative that a comprehensive assessment be undertaken to adequately address potential noise impacts on both internal living spaces and external areas, ensuring the well-being and comfort of residents are prioritised throughout the project lifecycle.

5.2 ITEM 5. Baseline Assessment

Outlined in our clients' initial submission, baseline measurements in the Malone O'Regan Noise Report (MOR), which was enclosed with the submission, are lower than the ones presented in the EIAR and a query should be raised in relation to the robustness of the CIÉ/IÉ baseline survey at this location.

In response to that, CIÉ/IÉ outlines that *"Section 14.4.1 of the EIAR provides details on the baseline noise survey. All measurements were undertaken in accordance with ISO 1996 Acoustics – Description and Measurement of Environmental Noise, Part 1 (ISO 1996-1:2016) and Part 2 (ISO 1996- 2:2017). The sound level meters were calibrated before and after the survey using a B&K 4132 Class 1 Acoustic Calibrator and the drift in calibration was within acceptable range (as per criterion in BS 4142:2014+A1:2019).*

Results are presented in Chapter 14 and Appendix 14.1 of the EIAR. The EIAR outlines the methodology including details on pre and post measurement calibration and analysis. We are satisfised that the procedure followed is robust.

The MOR report states the noise measurements were carried out using a Type 1 sound level meter but no details on the meter and calibrator were presented in the MOR report. It is noted that the baseline surveys as part of the EIAR were measured over a 24-hour period whilst the MOR accompanying the submission measured over a two-hour period during the daytime period.

It is noted in the submission that the CIÉ/IÉ measured noise levels presented in the EIAR are higher than the rail only noise levels predicted. This observation is correct. The reason for the difference between the predicted noise level and measured noise levels is due other noise sources including the constant road traffic noise from the R148 - Chapelizod Bypass."

Our response:

In relation to the noise survey carried out by MOR, please refer to the enclosed noise survey carried out over a 24-hour period in November 2023. Noise measurements were carried out using a Type 1 sound level meter, equipped with Frequency Analysis Software. The monitoring equipment was calibrated prior to and post the measurement period using a Type 1 sound level field calibrator. Broadband noise levels were measured using the A-weighted network, and a fast-sampling interval, unless otherwise stated.

it is noted that 2 no. surveys were conducted as follows:

Noise Survey 1 - Measurements conducted on 3rd May 2023

The sound level meter (SLM) used for the attended monitoring points was the NTi XL2 Audio Acoustic Hand-held Analyser SLM. The monitoring equipment was calibrated by MOR Environmental, prior to and following the measurement period using the B&K 4231 sound level calibrator (Serial No. 2217952). Please refer to the following attached calibration certificates:

- 'Asset No. 72 NTI SLM Cal Cert Due October 2023 (Dublin); and
- 'Asset No. 2 B&K Sound Level Calibrator due June 2023'

The sound level meter used at the noise sensitive location NSL09 on the balcony was the Cirrus Optimus sound level meter (SLM). The monitoring equipment was calibrated by MOR Environmental, prior to and following the measurement period using the B&K 4231 sound level calibrator (Serial No. 2217952):

- 'Asset No. 89 Certificate of Calibration Cirus SLM due February 2025'; and

- 'Asset No. 2 B&K Sound Level Calibrator due June 2023'

Noise Survey 2 - Measurements conducted from 4th to 6th September 2023

The sound level meter (SLM) used for the measurements conducted from 4th September to 6th September 2023 was the Cirrus Optimus SLM. The monitoring equipment was calibrated by MOR Environmental, prior to and following the measurement period using the Larson Davis CAL200 sound level calibrator (Serial No. 20830). Please refer to the following attached calibration certificates:

- 'Asset No. 89 Certificate of Calibration Cirus SLM due February 2025'; and
- 'Asset No. 168 Larson Davis Calibrator'.

As outlined in MOR report, enclosed with this submission, comparing baseline monitoring at different heights, it is noticeable the values are lower at 9th floor than on 1st floor, this is due to the increasing proximity to the rail lines at lower floors. Also, accounting for façade correction at 9th floor, are up to 12.8dB lower than the average value presented in the Irish Rail acoustic report.

Accordingly, the predicted values submitted on behalf of CIÉ/IÉ shows that daytime and night-time values as measured by MOR on first floor in September 2023 are 2dB higher at night, and 5dB higher at day, than the predicted third floor values by CIÉ/IÉ.

The report submitted on behalf of CIÉ/IÉ shows a reduction in rail noise at lower floors. However, measurements by MOR indicate an increase in noise at lower floors. A portion of this is attributable to non-rail sources, such as road traffic, however, subjectively the passing of trains was identified as been more acoustically prominent at lower floors. For more details in this regard, we respectfully invite the Board to refer to Appendix 2 of this submission.

Furthermore, when conducting a noise survey for the purpose of noise assessment, whether for a railway project or any other type of development, it is essential to consider various metrics and approaches to ensure a comprehensive understanding of the noise environment. This includes both average noise levels and the lowest noise levels, whereby each serves a different purpose:

1. Average Noise Levels:

- Average noise levels provide a measure of the typical noise exposure over a given period, such as a day or a year.

- They can help in understanding the overall noise climate in an area and are often used to assess compliance with noise regulations or guidelines.

- Average noise levels are useful for assessing the general impact of noise on human health, well-being, and environmental quality.

2. Lowest Noise Levels:

- Lowest noise levels, including minimum noise levels or background noise levels, represent the quietest periods in the environment.

- They are essential for identifying the baseline noise conditions and understanding the potential for noise intrusion during quiet times.

- Lowest noise levels help in assessing the potential for noise impacts during nighttime or other periods when ambient noise levels are typically lower.

- In some cases, the lowest noise levels can be used as a conservative measure to ensure that noise impacts are adequately assessed, especially in sensitive environments or where noise intrusion is a concern.

When examining Chapter 14 of the EIAR, it is currently not feasible to determine whether both average noise levels and lowest noise levels were taken into account during the preparation of the noise baseline. As mentioned above, adopting a conservative approach to allow for a better understanding of the range of noise exposure experienced by receptors would enable more effective mitigation measures, both average noise levels and lowest noise levels should be considered.

5.3. ITEM 6. Mitigation Measures

Outlined in our clients' initial submission, sufficient detail was not provided regarding noise, vibration, and air pollution mitigation measures. It is considered that possible mitigation measures could include an overhead canopy/tunnel, sound/vibration proof barriers on the retaining wall, anti-vibration mats and blankets, silent track tuned rail dampers, a tree barrier, and electrified lines should not be on the side closest to residential properties.

In response to that, CIÉ/IÉ outlines that *"A range of alternative mitigation measures including resilient rail and noise barriers were considered in the noise assessment. The use of resilient rail resulted in a negligible reduction in noise levels. The section of track adjacent to Kilmainham square is in deep cut and the inclusion of a noise barrier was also considered, however there was limited benefit especially for the higher floors of adjacent apartment blocks as there was direct line of sight.*

A tree barrier was not considered as it provides a small amount of attenuation. The small amount of attenuation occurs if the foliage is sufficiently dense to completely block the view along the propagation path, however the effectiveness would be limited. In addition, there is insufficient space available due to technical and safety considerations to have an effective lineside tree/foliage barrier at Kilmainham Square."

Our response:

The Application documents lack evidence to support the claim that the impact of resilient rail is negligible, a concern our clients are eager to address. Furthermore, there appears to be potential for exploring alternative noise mitigation measures beyond resilient rail. These could include the implementation of continuously welded rails, resilient rail fastenings, and low-vibration track systems. Additionally, the use of (partial) noise barriers or canopies constructed from various materials such as transparent panels, absorptive materials, or natural elements like earth berms could be considered. Other options include wheel dampers or the use of grinding railway tracks to achieve smoother surfaces. Moreover, integrating innovative noise-reducing technologies and adopting combined approaches may further enhance noise mitigation efforts. Our clients wish to draw the Board's attention to the significance of thoroughly exploring these potential strategies to ensure the minimisation of noise impacts associated with the railway project.

5.4 Other

In relation to the noise impact assessment and as outlined in page 358 of the response document, CIÉ/IÉ outlines that *"a number of residents from The Old Chocolate Factory Apartments, Kilmainham Square confirmed they were agreeable for a baseline noise measurement to be undertaken at their property. This information was reviewed and properties that were confirmed to have a balcony and direct line of sight of the railway line were selected for further consideration. The selection of baseline measurement locations considered all noise sources not just rail noise. The noise environment at the Old Chocolate Factory Apartments is comprised of road traffic noise and rail noise and the selection of monitoring locations considered wider noise environment amongst other factors."*

Our response:

Our clients confirm that they have been contacted several times by the Applicant and have expressed their willingness to facilitate the noise assessment in their apartments, indicating no issues with arranging for it. However, our clients raise a specific concern regarding the methodology employed in selecting the sites for noise assessment. They find it puzzling why floors 3 and 9 were singled out while lower floors, which are anticipated to bear the brunt of noise impact, were not included in the assessment process. It is submitted that a more comprehensive assessment inclusive of lower floors would enable the identification of the most affected areas and facilitate the implementation of proper mitigation measures, which currently seem to be missing from the Application.

6.0 CONCLUSION

This submission has been prepared by DOWNEY, Chartered Town Planners, 29 Merrion Square, D02 RW64, on behalf of our clients, The Old Chocolate Factory 227 Residential Apartments and 4 Commercial Units at Inchicore Road, Kilmainham, Dublin 8, which relates to the submission made by Córas Iompair Éireann (CIÉ)/Iarnród Éireann (IÉ) to An Bord Pleanála in response to the observations made during the course of public consultation of Draft Railway Order (DART+ South West Electrified Heavy Railway Order 2023). Our clients wish to extend their sincere appreciation for the response provided. Enclosed with this submission, we refer to the receipt of their initial submission to the Board, requesting the Board's attention to the enclosed document.

With reference to the Draft Railway Order (DART+ South West Electrified Heavy Railway Order 2023), our clients welcome this strategic project and recognises the significance of its delivery to provide for a sustainable, safe, efficient, integrated, and accessible public transport service between Hazelhatch and Celbridge Station (County Kildare) to Heuston Station Dublin.

With respect to this property, our clients are seeking:

1) To provide clarity regarding site selection for carrying out noise assessment in relation to the Kilmainham Square Apartments, particularly the methodology employed to select floors 3 and 9, despite the significant impact of the railway on 87 units directly facing the railway line, particularly with balconies on ground floor apartments situated just 7 meters from the railway track.

2) To provide clarity regarding the extent of noise assessment given the close proximity of the Kilmainham Square Apartments, and whether both internal and external noise impacts have been fully assessed and addressed during both construction and operational phases of the project.

3) To provide clarity on whether the EIAR considered both average noise levels and lowest noise levels during the preparation of the noise baseline, and if not, how could a more conservative approach incorporating both metrics be adopted to better understand the range of noise exposure and to facilitate more effective mitigation measures.

4) To provide clarity regarding negligible impact of resilient rail as stated in the response document prepared by CIÉ/IÉ.

5) To address the recently permitted mixed-use development of 578 no. units at Emmet Road from a cumulative impact perspective within the EIAR, since this was a live application at the time of lodging the DART+ upgrade application.

6) To ensure liaison of CIÉ/IÉ and the future contractor with the residents of the Kilmainham Square Apartments to ensure consideration of all concerns and issues and to facilitate successful delivery of the railway.

In light of the above, DOWNEY respectfully request that An Bord Pleanála take into consideration the issues raised when assessing the Draft Railway Order (DART+ South West Electrified Heavy Railway Order 2023).

APPENDIX 1. MOR CALIBRATION CERTIFICATES

Lauren Griffin

From: Lauren Griffin
Sent: Monday 11 March 2024 15:41
To: [redacted]
Subject: RE: Leonard Hayes - CASE 316119

A Chara,

The Board acknowledges receipt of your email, official acknowledgement will issue in due course.

Kind regards,

Lauren
-----Original Message-----
From: LAPS <laps@pleanala.ie>
Sent: Monday 11 March 2024 15:36
To: Lauren Griffin <lauren.griffin@pleanala.ie>
Subject: FW: Leonard Hayes - CASE 316119

-----Original Message-----
From: Leonard Hayes [redacted]>
Sent: Monday 11 March 2024 15:35
To: LAPS <laps@pleanala.ie>
Subject: Leonard Hayes - CASE 316119

Leonard Hayes & Alain Julien Joly, 110 The Old Chocolate Factory, Kilmainham Square, Dublin 8. D08E9P5.

CASE Number - 316119.

Hello there,

I have read the response from Irish Rail to my submission under case number 316119 and I believe Irish Rail have ignored all of my concerns, input and suggestions. This is wholly disappointing .

I submitted many examples and suggestions and a response such as, " noise will be managed" and a liaison officer will be available is frankly shocking. We have had a liaison officer to contact from Irish Rail for 15 years and apart from platitudes, we receive little else.

Isn't it extraordinary that our European neighbours public rail companies (as in my original submission and which Irish Rail ignored in their response) can find noise and vibration solutions to protect properties along their tracks but not Irish Rail.

At the very least a sound proofing canopy or retaining wall must be considered to mitigate against noise and vibration levels in our homes at The Old Chocolate Factory, Kilmainham Square.

I respectfully hope An Bord Pleanála will be rigorous in holding Irish Rail to account and make sure they take responsibility and do the right thing.

Yours sincerely,

Leonard Hayes &
Alain Julien Joly.

NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to

Malone O'Regan Environmental Services
Ground Floor Unit 3
Bracken Business Park
Bracken Road
Sandyford
Dublin 18

Attention of Martin Kearns

Certificate Number	**213952**
Item Calibrated	NTi Audio XL2-TA Sound Level Meter with NTi Audio MC230A Microphone
Serial Number	A2A-18871-E0 (SLM) and A21517 (Microphone)
ID Number	None
Order Number	00051
Date Received	27 Sep 2021
NML Procedure Number	AP-NM-09
Method	The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters*. This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003)
Calibration Standards	Norsonic 1504A Calibration System incorporating SR DS360 Signal Generator, No 0735 [Cal Due Date 10 Jun 2022] Agilent 34401A Digital Multimeter, No 0736 [Cal Due Date 10 Jun 2022] B&K 4134 Measuring Microphone, No 0744 [Cal Due Date 03 Jun 2023] B&K 4228 Pistonphone, No 0740 [Cal Due Date 04 Jun 2023] B&K 4226 Acoustical Calibrator, No 0150 [Cal Due Date 07 Oct 2022]

Calibrated by David Fleming

Approved by pp Paul Hetherington

Date of Calibration 11 Oct 2021

Date of Issue 11 Oct 2021

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMCs) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org).

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1 Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee

2 No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI

3 NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law including the Freedom of Information Act 1997, or as specified by the client

4 This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full

5 This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8 09/2019 published by the International Laboratory Accreditation Co-operation Further information on the decision rule is available on the NSAI website.

(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty, the instrument meets its accuracy specification
Conditional PASS Symbol: £	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol· &	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol. $	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty, the instrument fails to meet its accuracy specification
Unc. > Spec Symbol: #	The expanded measurement uncertainty is greater than the instrument's accuracy specification It is not possible to determine compliance or otherwise with the specification The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol ¢	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance

Ambient laboratory conditions

Barometric Pressure	102.9 kPa ± 0.5 kPa
Temperature	21.1 °C ± 1 °C
Relative Humidity	44 %RH ± 5 %RH

Summary of Results.

The following table summarises the results of the verification tests. The detailed results are given in the subsequent tables

IEC 61672 Test	Test Title	Status
10	Self generated Noise (Electrical)	PASS
11	Acoustical Signal	PASS
12	Frequency Weighting	PASS
13	Frequency and Time Weighting @ 1 kHz	PASS
14	Level Linearity Test on Reference Level Range	PASS
15	Level Linearity including Range Control	PASS
16	Toneburst Response	PASS
17	Peak C	PASS
18	Overload Indication	PASS

Detailed Results.

Prior to carrying out the verification tests the sound level meter adjusted to read correctly for pressure response through application of a reference acoustical calibrator

Self-generated Noise Test (Electrical Input) (Test #10) [1]

Range	100 dB
Time Weighting Resp Stg	L_{eq} (30s)

SLM Configuration	Freq Weighting Network	SLM Reading
Microphone installed	A	20.8 dB
Microphone replaced by electrical signal device and Fitted with a short-circuit	A	18.9 dB
	C	20.4
	Z (Linear)	22.9

Acoustical signal test of a frequency weighting (Test #11) [1]

Range	140 dB
Frequency Weighting setting	C
Time Weighting response	Slow

Input Level[3]	Input Freq	SLM Error of Indication[4]	Tolerance[5] (±)	Uncertainty of Measurement (±)
114.0 dB	1000 Hz	0.0 dB (Ref)	1.1 dB	0.3 dB
	125	+0.1	1.5	0.3
	4000[6]	-0.2	1.6	0.5
	8000[6]	-0.3	2.1, -3.1 dB	0.9

Electrical signal tests of frequency weightings (Test #12)[1]

Range 140 dB

Freq (nominal)	Input Level[2]	SLM Reading	SLM Error of Indication[3]	Tolerance[4] (±)	Uncertainty of Measurement (±)
		A Weighting			
63 Hz	95 dB	94.8 dB	-0.2 dB	1.5 dB	0.20 dB
125		94.9	-0.1	1.4	0.20
250		94.9	-0.1	1.4	0.20
500		94.9	-0.1	1.4	0.20
1000		95.0	0.0	1.1	0.20
2000		95.0	0.0	1.6	0.20
4000		95.0	0.0	1.6	0.20
8000		95.0	0.0	2.1 -3.1	0.20
16000		94.9	-0.1	3.5 -17	0.20
		C Weighting			
63 Hz	95 dB	94.9 dB	-0.1 dB	1.5 dB	0.20 dB
125		95.0	0.0	1.4	0.20
250		95.0	0.0	1.4	0.20
500		95.0	0.0	1.4	0.20
1000		95.0	0.0	1.1	0.20
2000		95.0	0.0	1.6	0.20
4000		94.9	-0.1	1.6	0.20
8000		94.9	-0.1	2.1 -3.1	0.20
16000		94.8	-0.2	3.5 -17	0.20
		Flat Weighting			
63 Hz	95 dB	95.0 dB	0.0 dB	1.5 dB	0.20 dB
125		95.0	0.0	1.4	0.20
250		95.0	0.0	1.4	0.20
500		95.0	0.0	1.4	0.20
1000		95.0	0.0	1.1	0.20
2000		95.0	0.0	1.6	0.20
4000		95.0	0.0	1.6	0.20
8000		95.0	0.0	2.1 -3.1	0.20
16000		95.0	0.0	3.5 -17	0.20

Frequency and time weightings at 1 kHz (Test #13)[1]

Range 140 dB

Time Weighting Setting	Frequency Weighting Setting	Input Level[2]	Deviation from Reference	Tolerance[4] (±)	Uncertainty of Measurement (±)
Fast	A	94.0 dB	0.0 dB	0.4 dB	0.20 dB
	C	94.1	+0.1	0.4	0.20
Slow	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
Leq	A	114.0 dB	0.0 dB	0.3 dB	0.20 dB
Leq	A	114.0 dB	0.0 dB	0.3 dB	0.20 dB

Linearity level on the reference range (Test #14)[1]

Input Frequency 8 kHz
SLM Measuring Mode SPL

Range	Input Level [4]	SLM Reading	SLM Error of Indication[4]	Tolerance [5] (±)	Uncertainty of Measurement (±)
140 dB	94 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	99	99.0	0.0	1.1	0.20
	104	104.0	0.0	1.1	0.20
	109	109.0	0.0	1.1	0.20
	114	114.0	0.0	1.1	0.20
	119	119.0	0.0	1.1	0.20
	124	124.0	0.0	1.1	0.20
	129	129.0	0.0	1.1	0.20
	134	134.0	0.0	1.1	0.20
	94	94.0	0.0	1.1	0.20
	89	89.0	0.0	1.1	0.20
	84	84.0	0.0	1.1	0.21
	79	79.0	0.0	1.1	0.21
	74	74.0	0.0	1.1	0.21
	69	69.0	0.0	1.1	0.21
	64	64.0	0.0	1.1	0.21
	59	59.1	+0.1	1.1	0.21
	54	54.1	+0.1	1.1	0.21
	49	49.0	0.0	1.1	0.21
	44	44.0	0.0	1.1	0.21

Level linearity including level range control (Test #15)[1]

Input Frequency 1 kHz
SLM Measuring Mode SPL

Range	Input Level [4]	SLM Reading	SLM Error of Indication[4]	Tolerance [5] (±)	Uncertainty of Measurement (±)
140 dB	114 dB	114.0 dB	0.0 dB	1.1 dB	0.20 dB
	135	135.0	0.0	1.1	0.20
120 dB	114 dB	114.0 dB	0.0 dB	1.1	0.20
	115	115.0	0.0	1.1	0.20

Toneburst response (Test #16)[1]

Range 140 dB

Burst Type	SLM Mode	Input Level[3]	SLM Error of Indication[4]	Tolerance[5] (±)	Uncertainty of Measurement (±)
200 ms	LAF	136.0 dB	0.0 dB	0.8 dB	0.3 dB
2.0 ms	LAF	119.0	-0.1	1.3	0.3
0.25 msec	LAF	110.0	-0.2	1.3, -3.3	0.3
200 ms	LAS	129.6 dB	-0.1 dB	0.8 dB	0.3 dB
2.0 ms	LAS	110.0	-0.1	1.3, -1.8	0.3
200 ms	SEL	130.0 dB	0.0 dB	0.8 dB	0.3 dB
2.0 ms	SEL	110.0	-0.1	1.3	0.3
0.25 ms	SEL	101.0	-0.2	1.3, -3.3	0.3

Peak C sound level (Test #17)[1]

Range 140 dB

Pulse Type	Pulse Frequency	Input Level [3] (peak value)	SLM Error of Indication[4]	Tolerance [5] (±)	Uncertainty of Measurement (±)
4 cycle	8 kHz	135.4 dB	0.0 dB	2.4 dB	0.35 dB
Pos ½ cycle	500 Hz	137.4 dB	-0.2 dB	1.4 dB	0.35 dB
Neg ½ cycle	500 Hz	137.4 dB	-0.2 dB	1.4 dB	0.35 dB

Overload indication (Test #18)[1]

Range 140 dB
SLM Measuring Mode. LAEq

Test description	Overload occurred at (±)	Meas Diff (Pos – Neg)	Tolerance[5] (±)	Uncertainty of Measurement (±)
Positive ½ cycle at 4 kHz	141.4 dB	-	-	-
Negative ½ cycle at 4 kHz	141.2 dB	-	-	-
Level difference of positive & negative pulses	-	0.2 dB	1.8 dB	0.30 dB

Notes:

(1) The test number, given in parentheses after the section heading, refers to the relevant clause in IEC 61672-3 (2006)

(2) SLM denotes Sound Level Meter

(3) All input levels are given in dB relative to a 20 µPa reference level

(4) The SLM Error of Indication is defined as follows
SLM Error of Indication = (SLM Reading - Input Level)

(5) The figures in the column labelled 'Tolerance' are the acceptance limits given in IEC 61672-1 (2003). These tolerance limits include an allowance for the maximum expanded uncertainty of the test laboratory. The criteria for compliance with the tolerance is that the measurement result, extended by its associated uncertainty, lies within the specified limits.

(6) Microphone response was measured at 4 kHz and 8 kHz using an electrostatic actuator. Free field corrections of +1.0 dB and +3.3 dB respectively were applied to the measured actuator response.
This measurement is not included in NML's tables of Calibration and Measurement Capabilities, approved under the CIPM MRA. For information, the measured sensitivity and frequency response of the microphone is given in an addendum to this certificate.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to meet the requirements of IEC 61672-1 (2003) in accordance with the verification procedures set out in IEC 61672-3 (2006) at the time of calibration.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

NSAI

Addendum to Certificate 213952

NTi
Type: NTiMC230

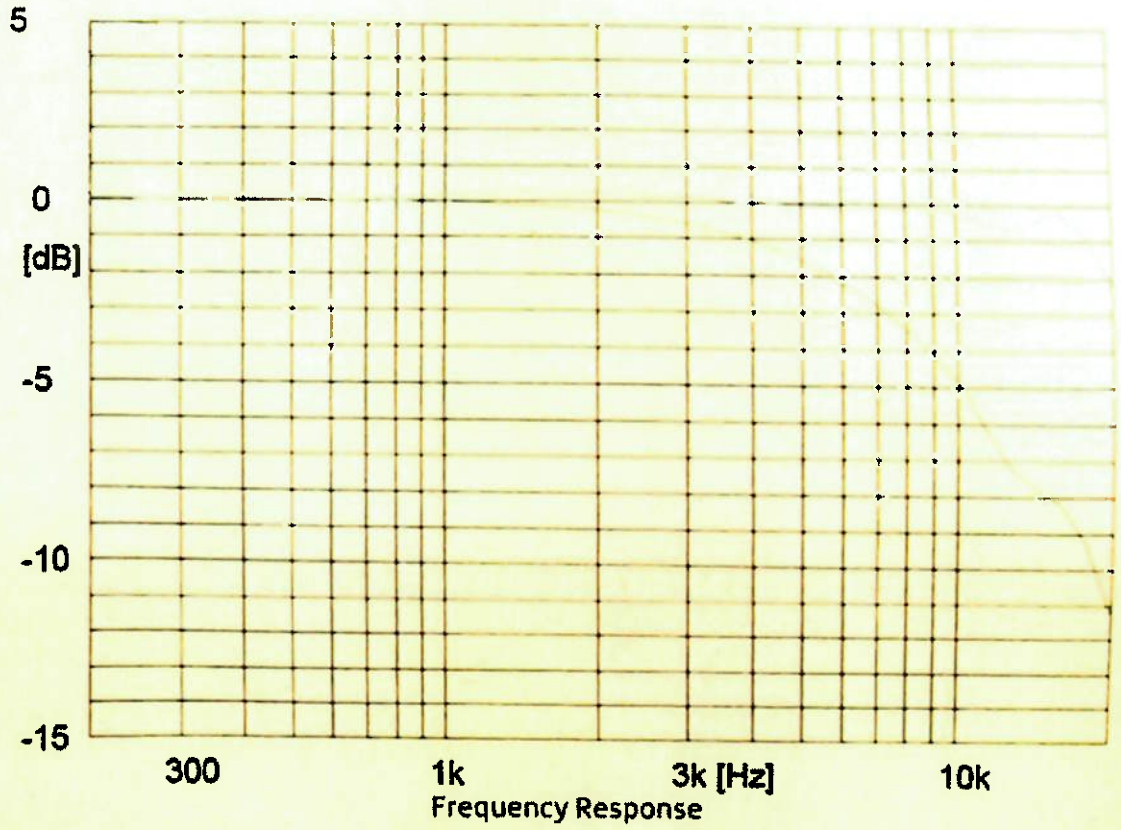
Serial no A21517

Sensitivity 47 7 mV/Pa
-26 4 ±0 02 dB re 1 V/Pa

Date 11/10/2021

Measurement conditions	
Polarisation voltage	0 0 V
Pressure	102 94 ±0 01 kPa
Temperature	21 0 ±1 1 °C
Relative humidity	42 1 ±2 1 %RH
Results are normalized to the reference conditions	

Free field response
Pressure (Actuator) response



CERTIFICATE OF CALIBRATION

ISSUED BY **Cirrus Research plc**

DATE OF ISSUE **07 February 2023** CERTIFICATE NUMBER **187176**

Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Approved signatory
M.Berry
Electronically signed:

M.BERRY

Sound Level Meter : IEC 61672-3:2013

Instrument Information

Manufacturer:	Cirrus Research plc	Notes:
Model:	CR:171C	
Serial number:	G302676	
Class:	1	
Firmware version:	5.8.3251	

Test summary

Date of calibration: 07 February 2023

The calibration was performed respecting the requirements of ISO/IEC 17025:2017.
Periodic tests were performed in accordance with procedures from IEC 61672-3:2013.

The sound level meter submitted for testing successfully completed the class 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to determine that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Notes

CERTIFICATE OF CALIBRATION

Environmental conditions

The following conditions were recorded at the time of the test:

Before	Pressure:	102.97 kPa	Temperature:	22.5 °C	Humidity:	39.4 %
After	Pressure:	102.94 kPa	Temperature:	22.5 °C	Humidity:	39.5 %

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	TTi	TG4001	395851
Attenuator	Cirrus Research	ZE:952	52200
Environmental Monitor	Comet	T7510	16966334

Additional instrument information

Instruction manual:

Reference level range: Single range

Pattern approval: No

Source of pattern approval: -

Preamplifier

Model: MV:200F

Serial number: 11430F

Microphone

Model: MK:224

Serial number: 216615D

Test results summary

Test	Result
Toneburst response	Complies
Electrical noise-floor	Complies
Linearity	Complies
Electrical Frequency weightings	Complies
Frequency and time weightings at 1 kHz	Complies
C-weighted peak	Complies
Overload indication	Complies
High level stability	Complies
Long-term stability	Complies
Acoustic Frequency weightings	Complies

Service Report

Instrument Manufacturer: Cirrus Research Plc
Job Reference Number: 81489
Instrument Type: CR:171C
Serial Number: G302676

Customer Name: Malone O'Regan Environmental
Customer Address: Ground Floor - Unit 3
Bracken Business Park
Ireland
D18 V32Y

Issue	Action	Result	Engineer
System is flat lining, with no variation, at ca. 64dB. there is damage to the microphone membrane Additionally a number of wires inside the preamp have come out of the shell.	MK224 #213946A replaced with MK:224 #216615D Preamp rewired & new socket fitted to main PCB	Autotested Passed	Mark Berry

Engineer: M.BERRY

Date: 07 February 2023

We hope that you are satisfied with the service you have received from Cirrus Research plc.
If you have any concerns, would like further information or have any feedback do not hesitate to contact us.

Cirrus Research plc, Acoustic House, Bridlington Road, Hunmanby, North Yorkshire, YO14 0PH
Telephone: +44 (0) 1723 891655 Fax: +44 (0) 1723 891742
Email: support@cirrusresearch.com

CERTIFICATE OF CALIBRATION

ISSUED BY **Cirrus Research plc**

DATE OF ISSUE **07 February 2023** CERTIFICATE NUMBER **187175**

Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

Test engineer:
D.Swalwell
Electronically signed:

Microphone

Microphone capsule

Manufacturer: Cirrus Research plc

Model: MK:224

Serial Number: 216615D

Calibration procedure

Date of calibration: 07 February 2023

Open circuit: 50.0 mV/Pa

Sensitivity at 1 kHz: -26.0 dB rel 1 V/Pa

The microphone capsule detailed above has been calibrated to the published data as described in the operating manual of the associated sound level meter (where applicable).

The frequency response was measured using an electrostatic actuator in accordance with BS EN 61094-6:2005 with the free-field response derived via standard correction data traceable to a National Measurement Institute.

The absolute sensitivity at 1 kHz was measured using an acoustic calibrator conforming to IEC 60942:2003 Class 1.

Environmental conditions

Pressure: 102.90 kPa

Temperature: 20.0 °C

Humidity: 27.0 %

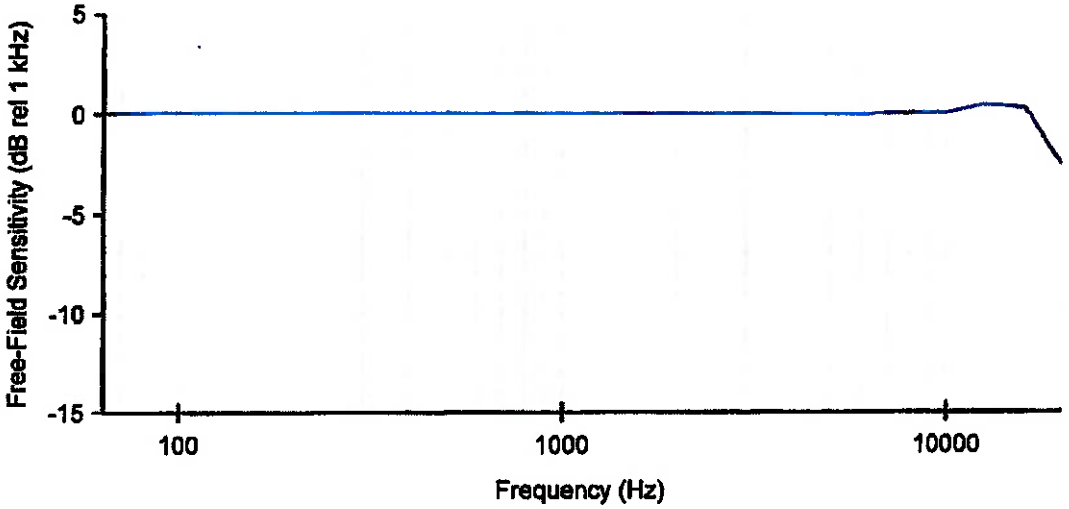
CERTIFICATE OF CALIBRATION

Certificate Number: **187175**

Free-Field Frequency Response : Tabular

Frequency (Hz)	Free-Field Sensitivity (dB rel 1 kHz)	Actuator Response (dB)
63	**0.04**	**-0.13**
80	0.05	-0.01
100	0.05	0.04
125	**0.03**	**0.05**
160	0.04	0.08
200	0.02	0.08
250	**0.02**	**0.09**
315	0.05	0.08
400	0.03	0.08
500	**0.03**	**0.07**
630	0.01	0.05
800	0.01	0.04
1 000	**0.00**	**0.02**
1 250	-0.01	-0.02
1 600	-0.01	-0.09
2 000	**-0.01**	**-0.19**
2 500	-0.03	-0.33
3 150	-0.02	-0.55
4 000	**-0.08**	**-0.93**
5 000	-0.10	-1.42
6 300	-0.08	-2.11
8 000	**-0.01**	**-3.12**
10 000	-0.01	-4.60
12 500	0.37	-6.10
16 000	**0.23**	**-7.69**
20 000	-2.56	-11.64

Free-Field Frequency Response : Graphical



NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to

Malone O'Regan Environmental Services
Ground Floor Unit 3
Bracken Business Park
Bracken Road
Sandyford
Dublin 18

Certificate Number	**222741**
Item Calibrated	Bruel & Kjaer Type 4231 Sound Level Calibrator
Serial Number	2217952
ID Number	None
Order Number	00094
Date Received	23 Jun 2022
NML Procedure Number	AP-NM-13
Method	The above calibrator was allowed to stabilize for a suitable period in laboratory conditions. It was then calibrated by measuring the sound pressure level generated in its measuring cavity (half-inch configuration). The calibrator's operating frequency was also measured.
Calibration Standards	Norsonic 1504A Calibration System incorporating: Agilent 34401A Digital Multimeter, File No. 0736 [Cal due: 08 Jul 2022] B & K 4134 Measuring Microphone, File No. 0744 [Cal due: 03 Jun 2023] B & K 4228 Pistonphone, File No. 0740 [Cal due: 04 Jun 2023]

Calibrated by	David Fleming	**Approved by**	Paul Hetherington
Date of Calibration	25 Jun 2022	**Date of Issue**	27 Jun 2022

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:

(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: £	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: &	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: $	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: #	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: ¢	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Measuring Conditions:

Ambient Pressure:	(99.4 ± 0.5) kPa
Ambient Temperature:	(21.3 ± 1.0) °C
Ambient Rel. Humidity:	(42 ± 5) %RH

Results:

The measured sound pressure level reported below refers to the reference conditions specified by the manufacturer. Corrections were applied using sensitivity coefficients provided by the manufacturer, where available. These reference conditions and sensitivity coefficients are listed below.

Parameter	Reference Value	Sensitivity Coefficient
Ambient Pressure	101.325 kPa	0.000 8 dB/kPa
Ambient Temperature	20 °C	0.000 dB/°C (1)
Ambient Relative Humidity	65 %RH	0.000 dB/%RH (1)

Calibrator Setting	Measured Parameter	Measured Value (2)		Tol. (3)	Meas. Uncertainty
		Before Adj.	After Adj.	(±)	(±)
94 dB	Sound Pressure Level	93.94 dB	*	0.40 dB	0.15 dB
	Frequency	1000.0 Hz	*	10 Hz	0.25 Hz

Notes: (1) No sensitivity coefficient information was available for this influence parameter.
(2) * indicates that no calibration adjustment was made.
(3) Tolerances given in IEC 60942 (2003), Sound Level Calibrators, Class 1.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to comply with the requirements of IEC 60942 (2003), Class 1, for the 94 dB sound pressure level and 94 dB frequency output measured at the time of calibration.

The ½" adapter was found to be split when received in the laboratory. The rubber O-ring was also missing.

With replacement batteries, the instrument would not remain powered on at the 114 dB sound pressure level, so no measurements could be recorded at this level.

Note that for acoustic calibrators which meet IEC 60942 (2003), the instrument is considered out of tolerance if the measured deviation from the set level, extended by it associated uncertainty, exceeds the specified tolerance limits.

When using the calibrator with a sound level meter any manufacturer's guidelines regarding free-field corrections should be observed.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

Manufacturer Calibration Certificate

The following instrument has been tested and calibrated to the manufacturer specifications.
The calibration is traceable in accordance with ISO/IEC 17025 covering all instrument functions

- Device Type: Class 1 Sound Calibrator CAL200
- Serial Number: 20830

- Certificate Issued: 02 November 2023
- Certificate Number: 45232-20830-CAL200
- Results: PASSED

Tested by: M. Frick

Signature:

Stamp:

NTi Audio AG
Im alten Riet 102
LI-9494 Schaan
www.nti-audio.com

Calibration of:	Class 1 Sound Calibrator CAL200
Serial Number:	20830
Date:	22 March 2023

- Detailed Calibration Test Results:

	actual	actual error	max. tolerance	calibration uncertainty[1]
Measured Level @ 94 dBSPL	93.84 dBSPL	-0.2%	+0.2 dB	0.25 dB
Measured Level @ 114 dBSPL	113.85 dBSPL	-0.1%	±0.2 dB	0.25 dB
Measured Frequency	1000 Hz	≤0.1%	±1 %	0.1 Hz

- Test Conditions

Temperature:	27 °C
Relative Humidity:	28 %

- Calibration Equipment Used:

- Norsonic Sound Calibrator, Type 1251, S/No. 30930
  Last Calibration: 10.12.2022. Next Calibration: 10.12.2024
  Calibrated by Metas, Switzerland

- NTi Audio FX100, S/No. 11201
  Last Calibration: 06.10.2022. Next Calibration: 06.10.2023
  Manufacturer calibration based on Agilent 34410, Serial No. MY47014254.
  Last Calibration: 31.05.2022. Next Calibration: 31.05.2023
  which is calibrated by ELCAL to national standards maintained
  at Swiss Federal Office of Metrology: SCS 0002

[1] The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with the regulations of the GUM.

APPENDIX 2. MOR TECHNICAL NOTE

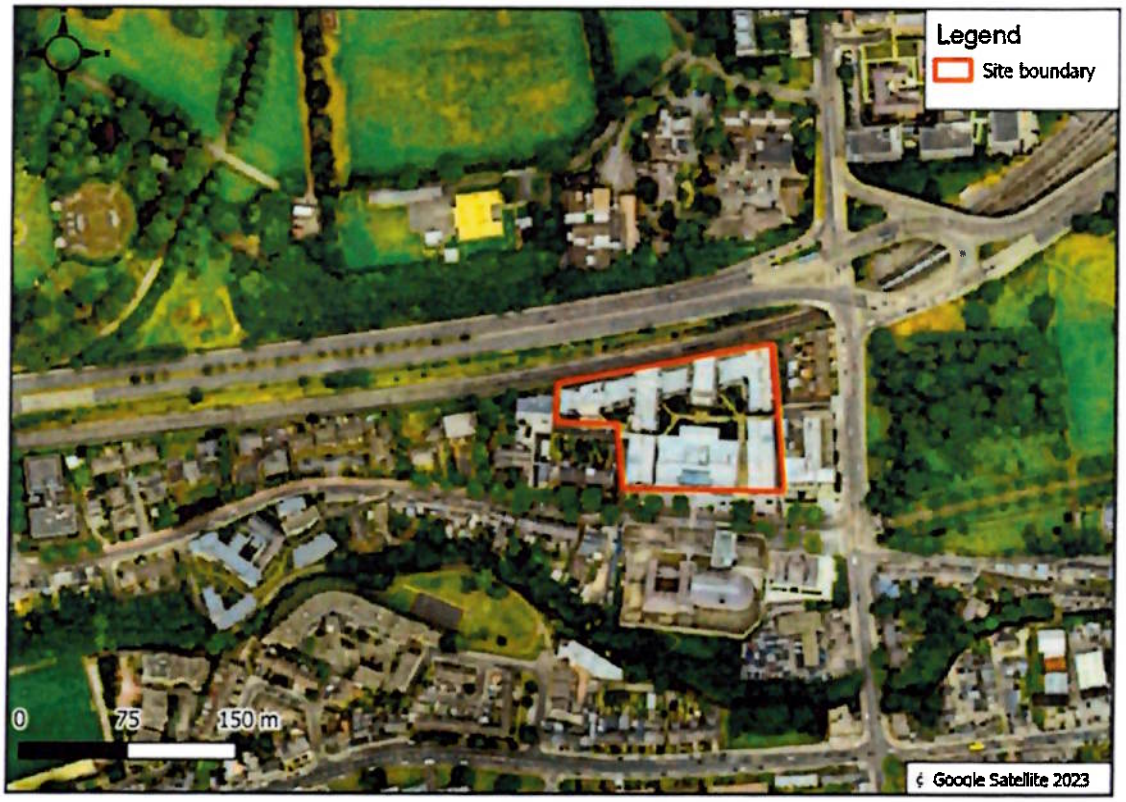
E2120 – Greendoor Technical Note

Site: Kilmainham Square Apartments, Co Dublin		**Report Date:**	11 March 2024
Set up:	4th September 2023	**Collection:**	6th September 2023
Monitoring Period	4th September - 06th September (2 days)		
Author:	Patricia Redondo	**Reviewer:**	Kenneth Goodwin

1 INTRODUCTION

Malone O'Regan Environmental (MOR) was commissioned by Greendoor (hereafter referred to as 'the Client') to conduct ambient noise measurements outside an apartment unit at the Kilmainham Square Apartments, located at Kilmainham Square, Co. Dublin (hereafter referred to as 'the Site'). The location of the Site (ITM X: 712580, ITM Y:733834) is shown in Figure 1-1 below.

Figure 1-1:Site Location



2 AMBIENT MONITORING

2.1 Ambient Measurements

Ambient monitoring was conducted on 4th September to 6th of September 2023. The set up is presented in Figure 2-1 below.

Figure 2-1: Set up of the noise measurement.

Figure 2-2: North façade red mark showing monitoring position.

2.1.1 Equipment

Noise measurements were carried out using a Type 1 sound level meter, equipped with Frequency Analysis Software. The monitoring equipment was calibrated prior to and post the measurement period using a Type 1 sound level field calibrator. Broadband noise levels were measured using the A-weighted network, and a fast-sampling interval, unless otherwise stated.

Laboratory calibration certificates for the SLM and the field calibrator are available on request.

2.1.2 Parameters

The following noise parameters were recorded during the monitoring period:

- L_{Aeq} The continuous equivalent A-weighted sound pressure level. This is an 'average' of the sound pressure level;
- L_{A90} This is the A-weighted sound level that is exceeded for 90% of the sample period,

The 'A' suffix for the noise parameters denotes the fact that the sound levels have been 'A-weighted' to account for the non-linear nature of human hearing. All sound levels in this report are expressed in terms of decibels (dB) relative to 20 microPascals.

The data is presented by the following parameters:

- L_{day} – daytime period from 7am to 7pm, 12-hour period;
- $L_{evening}$ – evening period from 7pm to 11pm, 4-hour period;
- L_{night} – night period from 11pm to 7am, 8-hour period
- L_{den} – 24hour period with penalties for evening and night-time of 5dB and 10dB respectively.

2.2 Weather

During the monitoring from Monday 4th September to Wednesday 6th September 2022 was suitable for noise monitoring. Conditions from the closest Met Eireann synoptic station, Casement located 9.8km to the southwest of the Site, is presented below in Table 2-1.

Table 2-1: Met Éireann Summary for Synoptic Weather Station

Date	Rainfall (mm)	Max Temp °C	Min Temp °C	Mean Wind Speed (knots)	Maximum Gusts (if >34 knots)
04/09/2023	tr	24.3	10.6	6.4	--
05/09/2023	tr	21.1	14.6	6.5	--
06/09/2023	tr	25.5	12.8	5.5	--

3 MONITORING

Noise monitoring was carried out on the balcony of Apartment 220 on the first floor. The results are presented in Table 3-1 below.

A façade correction of -3dB have been applied to the result in Table 3-1 below to account for the proximity of the sound level meter to the building wall.

Table 3-1: Noise Monitoring Results

Start time	Parameter	Duration	Result
04/09/2023 10:30	L_{day}	08:30:00	53
04/09/2023 19:00	$L_{evening}$	04:00:00	55
04/09/2023 23:00	L_{night}	08:00:00	47
	$L_{den\ (partial)}$	24:00:00	56
05/09/2023 07:00	L_{day}	12:00:00	53
05/09/2023 19:00	$L_{evening}$	04:00:00	54
05/09/2023 23:00	L_{night}	08:00:00	49
	$L_{den\ (24\ hour)}$	24:00:00	57
06/09/2023 07:00	$L_{day\ (partial)}$	11:00:00	52

The ambient noise assessment provides quantification and an understanding of the acoustic environment currently. The analysis undertaken determined the L_{Aeq} and L_{A90} noise levels outside the apartment during the survey event. Figures 3-1, 3-2 and 3-3 below present the number of occurrences of L_{A90} and L_{Aeq} at the location for daytime, evening and night-time measurements respectively.

Figure 3-1: Number of occurrences for daytime measurements.

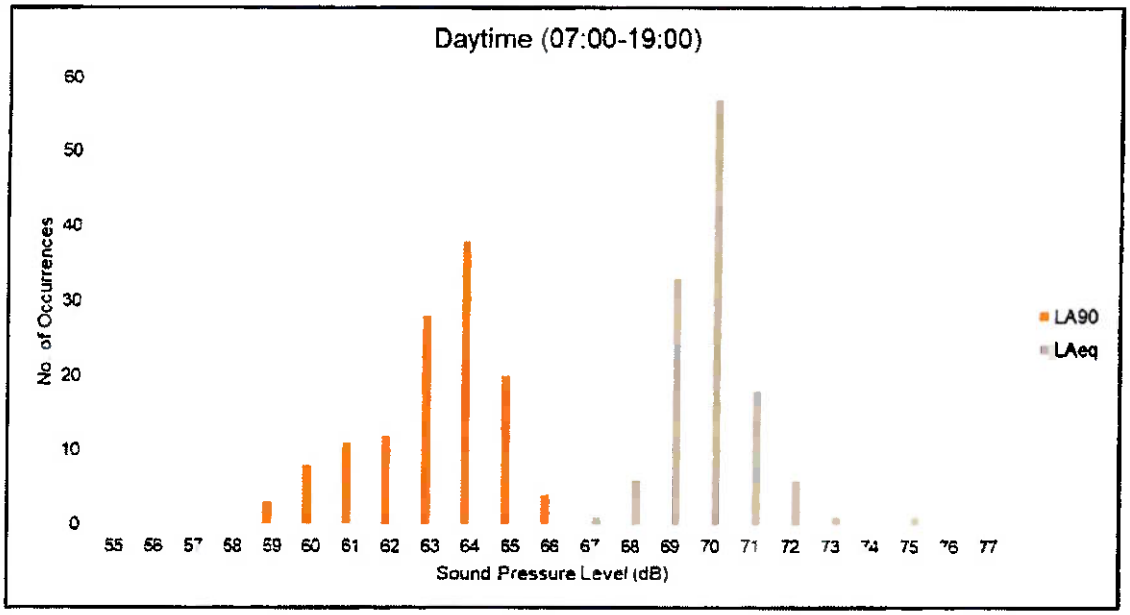


Figure 3-2: Number of occurrences for evening measurements.

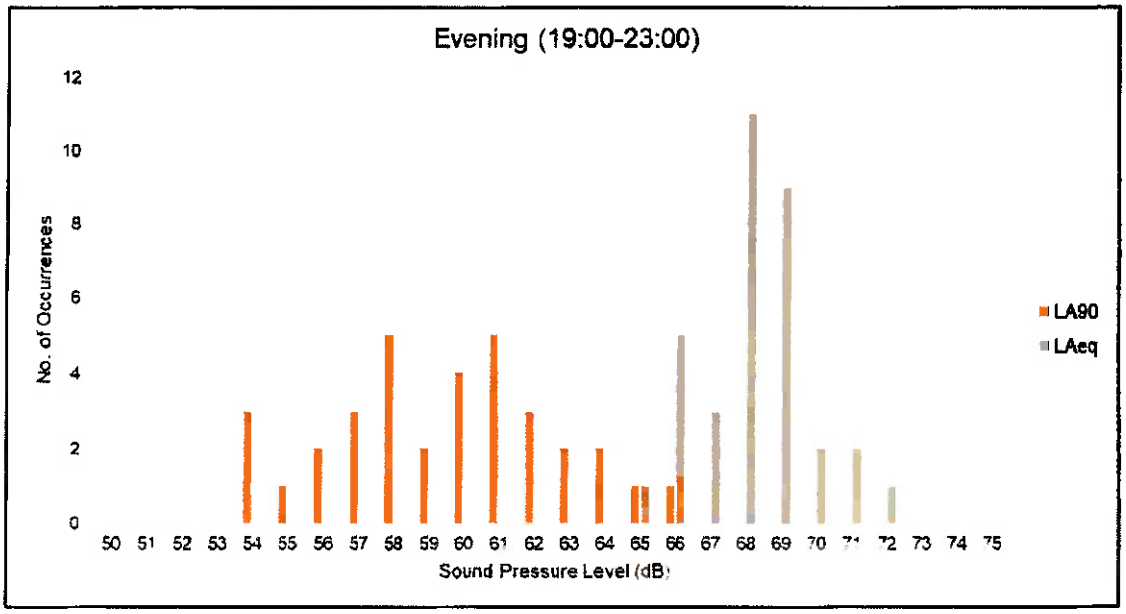


Figure 3-3: Number of occurrences for night-time measurements.

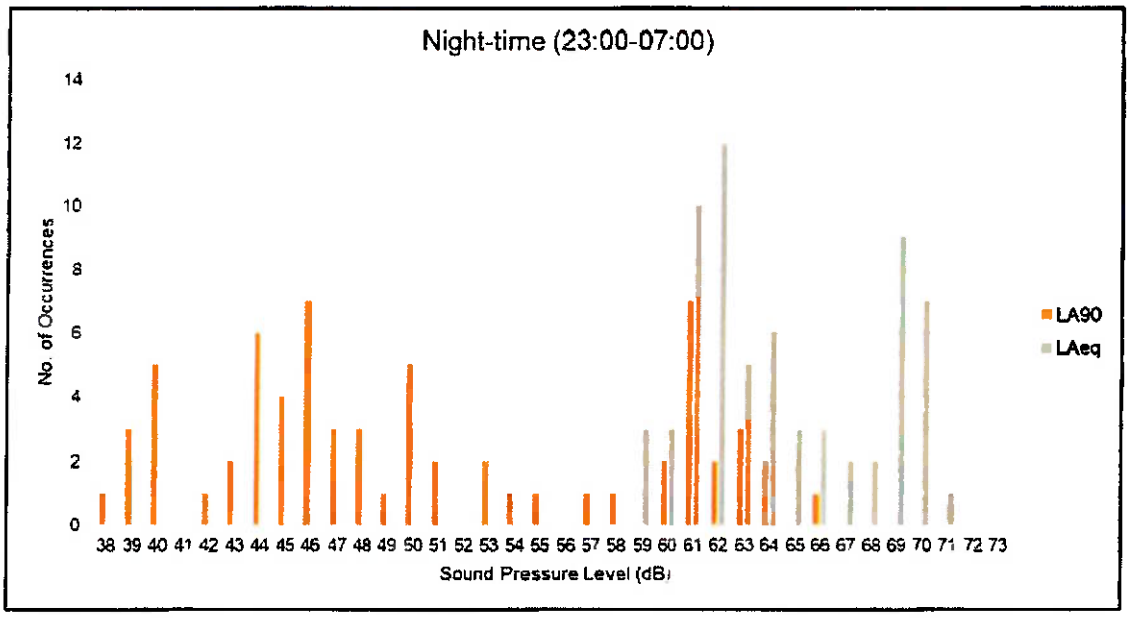


Table 3-2: Summary of Background noise.

Period	L_{Aeq} (dB)	L_{A90} (dB)
Daytime	70	64
Evening	68	58
Night-time	62	46

4 COMPARISON

In Table 4-1 below, the measured values are compared to those presented in Table 3-1 of the submitted MOR Noise Impact assessment, Irish Rail Chapter 14 Noise and Vibration and the current Technical Note below.

Table 4-1: Summary of Baseline Results

Location and Floor	Period	Elapsed Time	Range L_{Aeq} (dB)	Range L_{A90} (dB)	Source
9th floor – Inside (Door open)	Daytime	30 min	45-47	39-40	MOR Noise Impact Assessment
9th floor – Inside (Door closed)			32-42	25-28	
9th floor – Outside*			55-57	50-52	
Ground floor – Inside			44	35	
R17 (3rd floor)	Daytime	16 hours	64	–	Irish Rail Chapter 14 Noise and Vibration
R17a (9th floor)			69.8	–	
R17 (3rd floor)	Night-time	8 hours	59.1	–	
R17a (9th floor)			65.4	–	
1st floor - Outside	Daytime	12 hours	70	64	Current Tech Note
	Evening	4 hours	68	58	
	Night-time	8 hours	62	46	

*A façade correction of -3dB have been applied to the results of the balcony outside conducted by MOR.

The predicted values from Irish Rail report are shown in Table 4-2 below, which is an extract from Table 14-63 of Chapter 14 Noise and Vibration as submitted on behalf of Irish Rail.

Table 4-2: Predicted Do Something Scenario Results

Location ID	Description	DS - Daytime - $L_{Aeq,16hr}$	DS - Night-time $L_{Aeq,8hr}$
R17 *	Kilmainham Square (3rd floor)	65.4	60.3
R17a	Kilmainham Square (9th floor)	62.3	57.2

*These values have been predicted once the model have been validated with three locations as presented in Table 14-61 from Chapter 14 Noise and Vibration.

Comparing baseline monitoring at different heights, it's noticeable the values are lower at 9th floor than on 1st floor, this is due to the increasing proximity to the rail lines at lower floors.

As presented in the MOR report the measurements taken by MOR, accounting for façade correction at 9th floor, are up to 12.8dB lower than the average value presented in the Irish Rail acoustic report.

The predicted values submitted on behalf of Irish Rail, presented in Table 4-2 above, shows that daytime and night-time values as measured by MOR on first floor in September 2023 are 2dB higher at night, and 5dB higher at day, than the predicted third floor values as shown in Table 4-2 above.

The report submitted on behalf of Irish Rail shows a reduction in rail noise at lower floors. However, measurements by MOR indicate an increase in noise at lower floors. A portion of this is attributable to non -rail sources, such as road traffic, however, subjectively the passing of trains were identified as been more acoustically prominent at lower floors.

5 CONCLUSION

Based on the noise monitoring data recorded by MOR in September 2023 the following can be concluded:

- L_{day} ranged 52-53dB.
- $L_{evening}$ ranged 54-55dB.
- L_{night} ranged 47-49dB.
- L_{den} ranged 56-57dB.
- The most typical L_{Aeq} during the daytime, evening and night-time is 70dB, 68dB and 62dB respectively.
- The most typical L_{A90} for daytime, evening and night-time is 64dB, 58dB and 46dB respectively.
- Subjectively, during equipment set up and collection, the main noise source was the road traffic, however when a train passed by, they were the dominant noise source for a few seconds.

Our Case Number: ABP-316119-23

Your Reference: Residents of Kilmainham Square Apartments

An Bord Pleanála

Downey Chartered Town Planners
29 Merrion Square North
Dublin 2
D02 RW64

Date: 06 February 2024

Re: DART+ South West Electrified Heavy Railway Order - Hazelhatch & Celbridge Station to Heuston Station, and Hesuton Station to Glasnevin
County Dublin and County Kildare

Dear Sir / Madam,

I have been asked by An Bord Pleanála to refer to the above mentioned application under section 37 of the Transport (Railway Infrastructure) Act 2001, as amended.

The Board has considered the case and hereby notifies you that it has decided to determine the application without an oral hearing. In this regard, please be advised that the Board has absolute discretion to hold an oral hearing and has concluded that this case can be dealt with adequately through written procedure.

Accordingly, the Board hereby considers it appropriate to invite you to make a submission in accordance with section 217A of the Planning and Development Act 2000, as amended in relation to the response from the Applicant to your submission.

A copy of the submission can be found on the Board's website at www.pleanala.ie/en-ie/case/316119 under the heading "Responses".

This response together with the application documentation is also available for public inspection at the following locations: An Bord Pleanála, 64 Marlborough Street, Dublin.

Any submission in relation to the above must be received by the Board within 5 weeks from the date of this letter not later than 5:30pm on the 11th March 2024.

There is no fee required for making a submission.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

Please quote the above mentioned reference number in any correspondence or telephone contact with the Board.

Teil (01) 858 8100
Glao Áitiúil LoCall 1800 275 175
Facs (01) 872 2684
Láithreán Gréasáin Website www.pleanala.ie
Ríomhphost Email bord@pleanala.ie

64 Sráid Maoilbhride
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

Yours faithfully,

Lauren Griffin
Executive Officer
Direct Line: 01 8737 244

EL19

Teil	Tel	(01) 858 8100
Glao Áitiúil	LoCall	1800 275 175
Facs	Fax	(01) 872 2684
Láithreán Gréasáin	Website	www.pleanala.ie
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64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

Our Case Number: ABP-316119-23

Your Reference: Residents of Kilmainham Square Apartments

An Bord Pleanála

Downey Chartered Town Planners
29 Merrion Square North
Dublin 2
D02 RW64

RECEIVED
07 FEB 2024

Date: 06 February 2024

Re: DART+ South West Electrified Heavy Railway Order - Hazelhatch & Celbridge Station to Heuston Station, and Hesuton Station to Glasnevin
County Dublin and County Kildare

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Ríomhphost	**Email**	bord@pleanala.ie

64 Sráid Maoilbhride
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

Yours faithfully,

Lauren Griffin
Executive Officer
Direct Line: 01 8737 244

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