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iSM INDEPENDENT SITE MANAGEMENT

Telecommunications Report

LARGE-SCALE RESIDENTIAL DEVELOPMENT
Belgard Square East,
Blessington Road
Belgard Road
Tallaght
Dublin 24

28 October 2025

Prepared by
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DEFINITIONS

Author:	Independent Site Management Limited (hereinafter referred to as "ISM")
Mitigation Measures:	means the allowances made for the retention of important Telecommunication Channels (hereinafter referred to as "Mitigation Measures")
Planning Authority:	means South Dublin County Council (hereinafter referred to as the "Planning Authority")
Radio Frequency:	means a frequency or band of frequencies in the range 104 to 1011 or 1012 Hz, of the electromagnetic spectrum suitable for use in telecommunications.
Microwave Links:	means the transmission of information by electromagnetic waves with wavelengths in the microwave range (1 m - 1 mm) of the electromagnetic spectrum suitable for use in telecommunications.
Telecommunication Channels:	means Radio Frequency links & Microwave Transmission links (hereinafter referred to as "Telecommunication Channels")
Report Date:	means the date which the assessment was carried out (hereinafter referred to as "Report Date")
The Applicant:	means Midsal Homes Limited (hereinafter referred to as the "Applicant")
The Development:	means the proposed development situated at Belgard Square East, Belgard Road and Blessington Road, Tallaght, Dublin 24. (hereinafter referred to as the "Development")

EXECUTIVE SUMMARY

Independent Site Management ('ISM') has been engaged to provide a specific assessment that the proposal being made by Midsal Homes Limited (the "Applicant") within its submission to South Dublin County Council (the 'Planning Authority'), allows for the retention of important Telecommunication Channels ("Telecommunication Channels") such as microwave links, to satisfy the criteria of Section 3.2 of the Building Height Guidelines (2018) and Section 2.4, Appendix 10 of the South Dublin County Council Development Plan 2022-2028 - Building Height and Density Guide.

To provide this assessment, ISM reviewed the Applicant's proposed development (the "Development"), together with their proposed allowances to retain relevant Telecommunication Channels in the context of the immediate surrounding registered and documented telecommunication sites.

Pursuant to our review, ISM can conclude based on the findings outlined herein that the proposal being made by the Applicant within its submission to the Planning Authority allows for the retention of important Telecommunication Channels, such as Microwave links, and therefore satisfies the criteria of Section 3.2 of the Building Height Guidelines (2018) and Section 2.4, Appendix 10 of the South Dublin County Council Development Plan 2022-2028 - Building Height and Density Guide.

ABOUT THE AUTHOR

ISM is a consultancy firm and asset management company that provides telecommunication consultancy and telecommunication services to developers and property owners.

ISM works closely with all providers of wireless and fixed line telecommunication services to bridge their infrastructure requirements with that of private and public development. ISM has successfully been providing this service in Ireland for over 20 years.

ISM is a multidiscipline firm proficient in the 6 main areas in the delivery of telecommunication services:

(1) Telecommunication Asset Management Cellular and Fixed Line Fibre Optic.
(2) Telecommunication Contract and Licensing.
(3) Radio Frequency technology.
(4) Microwave Transmission technology.
(5) In-building distributed antenna systems.
(6) Fixed Line fibre optic & copper technologies.

ISM has had an integral part in procuring, designing, building and subsequently managing over 300 mobile base stations and/or fixed wireless sites, the vast majority of which originated in densely populated, urban environments.

ISM has designed, built and operates 10 in-building distributed antenna systems, and 2 large managed fibre optic networks.

DEVELOPMENT DESCRIPTION

Midsal Homes Limited intends to apply for permission for a Large-Scale Residential Development (LRD) at a site of approximately 1.19 Ha at Belgard Square East, Belgard Road and Old Blessington Road, Tallaght, Dublin 24. The main development site (approximately 0.91 Ha) is generally bound: to the north by Old Blessington Road; to the east by Belgard Road (R113); to the south by McDonald's Restaurant property (D24 HW74); and to the west by Belgard Square East. The site also includes parts of the carriageways and verges of Belgard Square East, Belgard Road and Old Blessington Road (approximately 0.28 Ha) for the provision of landscaping, 2 No. pedestrian crossings, accesses/junctions, minor road and footpath works, cycle infrastructure and water services infrastructure.

The proposed development principally comprises: the demolition and removal of existing boundary walls and railings on the main development site's eastern, western and northern sides; and the construction of a mixed-use development in 2 No. blocks (Block A to the south and Block B to the north) with a gross floor area of 23,540 sq m (excluding basement of 275 sq m) and ranging in height from 1 No. to 7 No. storeys (with mezzanine level) over basement.

The development includes a total of 199 No. residential dwellings (6 No. studios, 47 No. 1-bed, 98 No. 2-bed and 48 No. 3-bed) in the 2 No. blocks, with Block A comprising 49 No. 'senior living' apartment units and Block B comprising 150 No. 'standard' apartment units. The development also includes 2,123 sq m of non-residential floor space, with the following uses proposed: 4 No. retail units (totalling 331 sq m); 4 No. class 1 / class 2 commercial units (totalling 387 sq m); a bicycle sales and repair shop (81 sq m); an off-licence (64 sq m); a bar (151 sq m); a café (87 sq m); a medical centre (210 sq m); a dental practice (72 sq m); a pharmacy (195 sq m); a beauty/health salon (195 sq m); and a crèche (350 sq m) with external play area.

The development also comprises: an undercroft car park accessed via a new entrance/exit at Belgard Square East which provides 58 No. car parking spaces; a gated service lane to the south of Block A, with entrances/exits off Belgard Square East and Belgard Road; 2 No. pedestrian/cycle crossings, at Belgard Square East and Belgard Road; continuation of the northbound cycle lane from Belgard Road onto Old Blessington Road; alteration to the median and northbound right turn at Belgard Road onto Abberley Square; cycle parking; internal

communal amenity spaces for the senior living units; hard and soft landscaping, including public open space, communal amenity space and incidental spaces; private amenity spaces (as balconies and terraces facing all directions); boundary treatments; 2 No. sub-stations; plant/operational rooms; bin stores; public lighting; blue roofs; rooftop PV arrays; lift overruns and rooftop opening vents atop both blocks; 4 No. 0.3 m diameter microwave link dishes mounted on 2 No. steel support poles affixed to the Block B lift overrun, all enclosed in radio-friendly GRP shrouds; and all associated works above and below ground.

SITE LOCATION/LAYOUT MAP

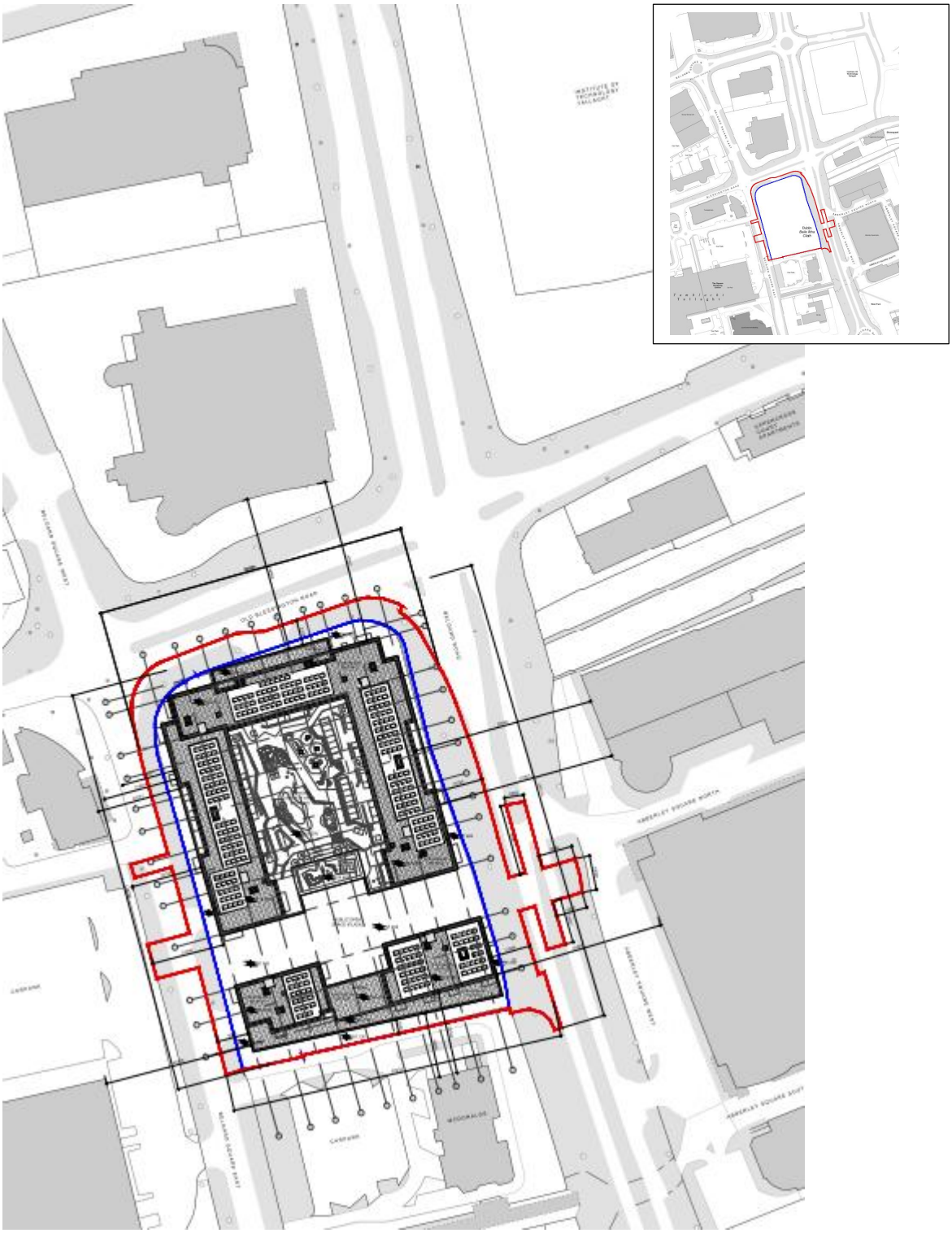


Figure 1

TELECOMMUNICATION CHANNELS

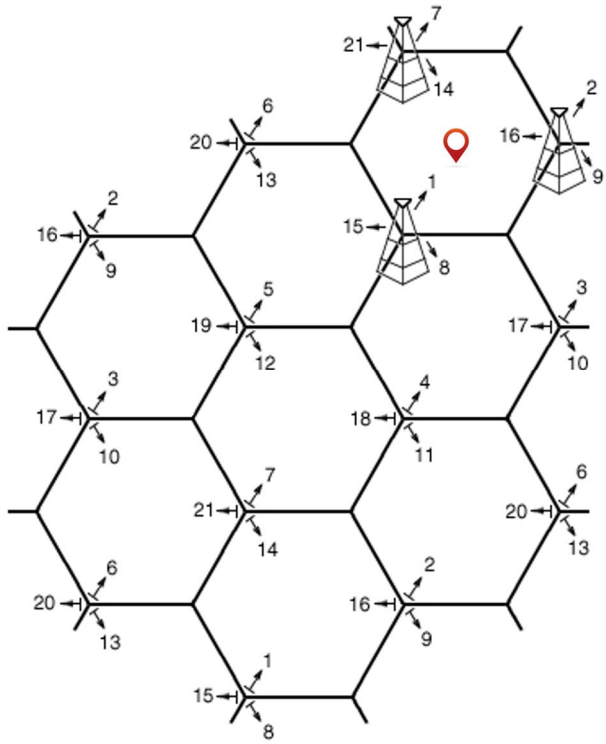
This report assesses the two wireless Telecommunication Channels or networks of Telecommunication Channels that may be affected by the height and scale of a new development, Radio Frequency links & Microwave Transmission links

Radio Frequency links & Microwave Transmission Links are used in Ireland's mobile phone and fixed wireless networks and disseminate at an average above ground level height of 20m, making them the most relevant Telecommunication Channels to be assessed in relation to the height and scale of a new development and to that end what allowance the Applicant needs to make for their retention.

Mobile phones send and receive signals via links from nearby antenna sites or cellular towers, technically known as base stations, using Radio Frequency waves. Microwave Transmission links use microwave dishes to "transmit" from these base stations to other base stations forming a network. Radio Frequency waves operate at a lower power within lower frequencies of the radio spectrum, whereas Microwave Transmission operates at higher power within higher frequencies of the radio spectrum.

Radio Frequency waves are distributed over land areas in "cells", each served by at least one fixed-location transceiver (base station), but more normally by three cell sites or base stations. These base stations provide the cell with the network coverage, which can then be used for voice, data, and other types of content. A cell typically uses a different set of frequencies from neighbouring cells to avoid interference and provide guaranteed service quality within each cell.

When joined together, these cells provide Radio Frequency coverage over a wide geographic area (Cellular network). This enables numerous portable transceivers (e.g., mobile phones, tablets and laptops equipped with mobile broadband modems, pagers, etc.) to communicate with each other and with fixed transceivers and telephones anywhere in the network, via base stations, even if some of the transceivers are moving through more than one cell during transmission.



As demonstrated on this cell map illustrating Radio Frequency coverage, each Radio Frequency "cell" is supported by at least 3No. base stations sites. This means that should an obstacle occur between an area and a base station site, such as a new development, the affected area will be covered by other base stations from other locations.

= a given location

= base station site

Figure 2

Cellular networks offer a number of desirable features, but most notably, additional cell towers can be added indefinitely and are not limited by the horizon, therefore it can be considered **indeterminable** as to whether a new development affects the Radio Frequency coverage of a geographical area which is being served by multiple base stations, not necessarily the closest.

Conversely, Microwave Transmission links are point-to-point links, which are easily determined to be affected, or not, by the height and scale of a new development. In point-to-point wireless communications, it is important for the line of sight between two base stations to be free from any obstruction (terrain, vegetation, buildings, wind farms and a host of other obstructions). As any interference or obstruction in the line of sight can result in a loss of signal.

While installing Microwave links, it is important to keep an elliptical region between the transmitting Microwave link and the receiving Microwave link free from any obstruction for the proper functioning of the system. This 3D elliptical region between the transmit antenna and the receive antenna is called the **Fresnel Zone**. The size of the ellipse is determined by the frequency of operation and the distance between the two sites.

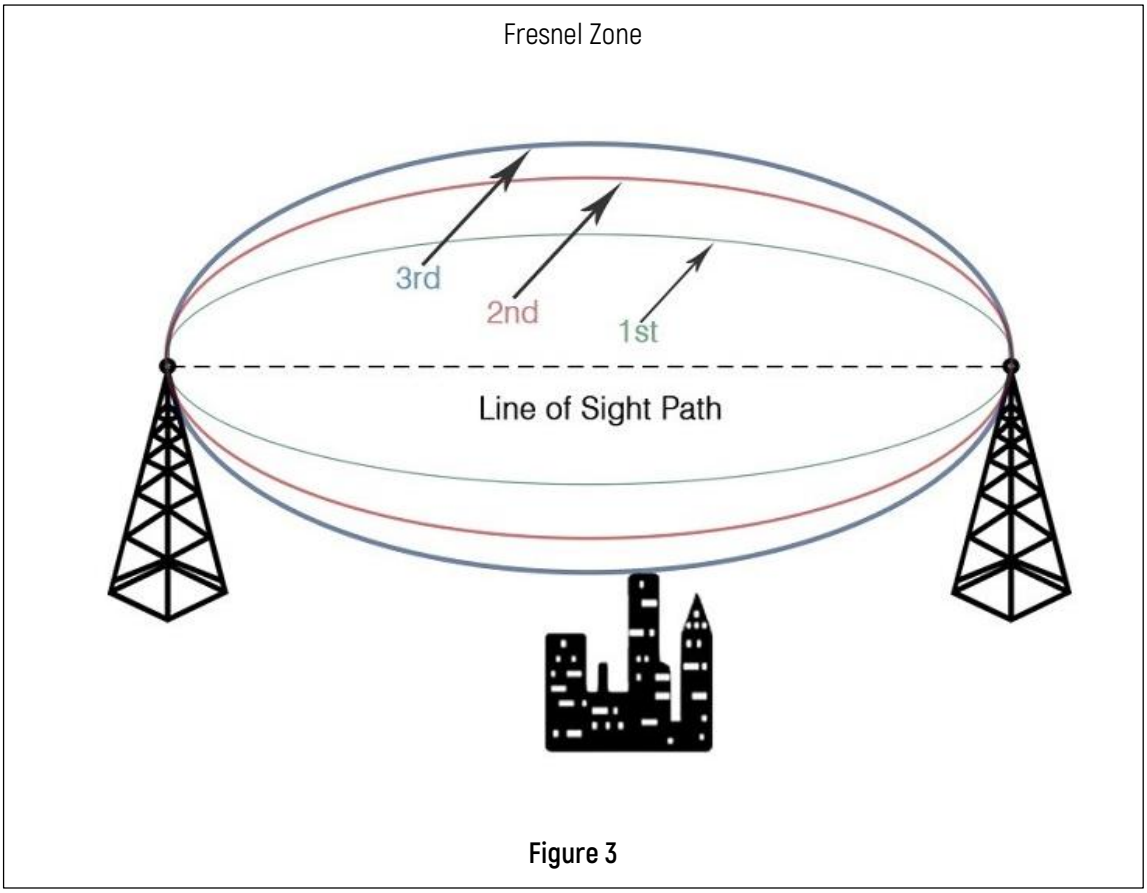


Figure 3

receiving microwave dish. The thickness or radius of the Fresnel zone depends on the frequency of the signal – the higher the frequency, the smaller the Fresnel zone. Microwave links are high frequency radio links used for point-to-point transmission.

FINDINGS

ISM's assessment did not identify any Microwave Links that will require the Applicant to make specific allowances for their retention ("Mitigation Measures").

Our assessment has not identified any Radio Frequency links that will require the Applicant to make specific allowances for their retention.

ISM carried out a full assessment of neighbouring registered and documented telecommunication sites to assess what Microwave links would be impacted by the height and scale of the Development. Refer to Figure 5 & 6 of the appendices for full analysis. The assessment of Microwave Transmission links entailed both a visual survey of each identified neighbouring telecommunication site within a reasonable geographic proximity to the Development and a request for information from telecommunication providers where the visual survey was inconclusive.

ISM carried out a full assessment of neighbouring registered and documented telecommunication sites to assess what Radio Frequency links might be impacted by the height and scale of the Development. To assess this, we carried out a walk test throughout the surrounding areas to ascertain what cells were serving the street areas to the north, south, east & west of the Development site. Refer to Figure 7 of the appendices for full analysis

Our assessment identified Radio Frequency coverage for the local geographic area is served by several cells at strategic distances away from the development site on a 360° basis which is typical cell pattern for urban Radio Frequency coverage. The walk test data determined that the business, residential and public road areas to the north, south, east & west of the Development are adequately covered by the cell sites identified in figure 7 and are not reliant on Radio Frequency coverage from any one cell that would be obstructed by the Development.

Notwithstanding the fact that ISM did not identify any direct impact to either Telecommunication Channels such as Microwave Links or Radio Frequency links, ISM did identify a significantly high concentration of telecommunication sites with in a very close proximity to the Development.

Most notably, approximately 300m to the northeast of the Development is an Eir telecom exchange building which hosts 2 large high-capacity telecommunication masts being utilised by all 3No. Irish mobile operators. There is a sizable number of antennae (Radio Frequency links) and transmission dishes (Microwave Links) on both structures, and a strong likelihood that, as telecommunication networks expand, so will the proliferation of equipment on those structures.

Telecommunication Masts sited on the Eir Exchange Belgard Road

Figure 4

ISM is therefore recommending that the Applicant make a minor provision for telecommunication infrastructure within its submission, should the height and scale of the development impact future Microwave links needing to reach the telecommunication masts identified herein.

MITIGATION MEASURES

To provide an adequate allowance for the retention of and future telecommunication channels that may be impacted by the height and scale of the Development, the Applicant is seeking planning permission to install 4No, 300mm microwave link dishes mounted on 2No. steel support poles affixed to the lift shaft overrun on Block B.

These support poles are sufficient to accommodate 2No. Ø.3m Microwave links each, which provides an adequate solution for the Applicant to mitigate the impact the Development may have on any Microwave links emanating to and from the neighbouring telecommunication masts to the northeast of the Development.

To adequately screen the infrastructure, the steel support poles and the associated equipment thereon, will be installed within Radio friendly GRP shrouds.

Refer to Figures 8 of the appendices for full analysis.

ISM can therefore conclude that the proposal being made by the Applicant within its submission to South Dublin County Council allows for the retention of important Telecommunication Channels, such as Microwave links, to satisfy the criteria of Section 3.2 of the Building Height Guidelines (2018) and Section 2.4, Appendix 10 of the South Dublin County Council Development Plan 2022-2028 - Building Height and Density Guide.

DISCLAIMER

Due to the confidential nature of planning applications/submissions, ISM does not, as standard practice, contact or involve Ireland's licenced Mobile Network Operators, namely: Vodafone Ireland; Three Ireland; or Eircom Limited t/a Eir Mobile, when preparing this report. If contact is made with a Mobile Network Operator, we duly note the source information.

ISM has wholly relied upon the publicly available information provided by Commission for Communications Regulation, "ComReg", its own extensive record of wireless infrastructure, and the results of a comprehensive visual survey carried out on the Report Date notated herein. Therefore, the specific Mobile Network Operator transmitting the identified telecommunication channel is carried out on a best endeavour basis.

Lastly, please note that telecommunication networks are always evolving, and as such, these findings remain subject to change.

APPENDICES

Figure 5: Identification of neighbouring registered and documented telecommunication sites (Area Telecommunication Analysis)

Figure 6: Identification of Microwave links disseminating from neighbouring registered and documented telecommunication sites (Microwave Link Analysis)

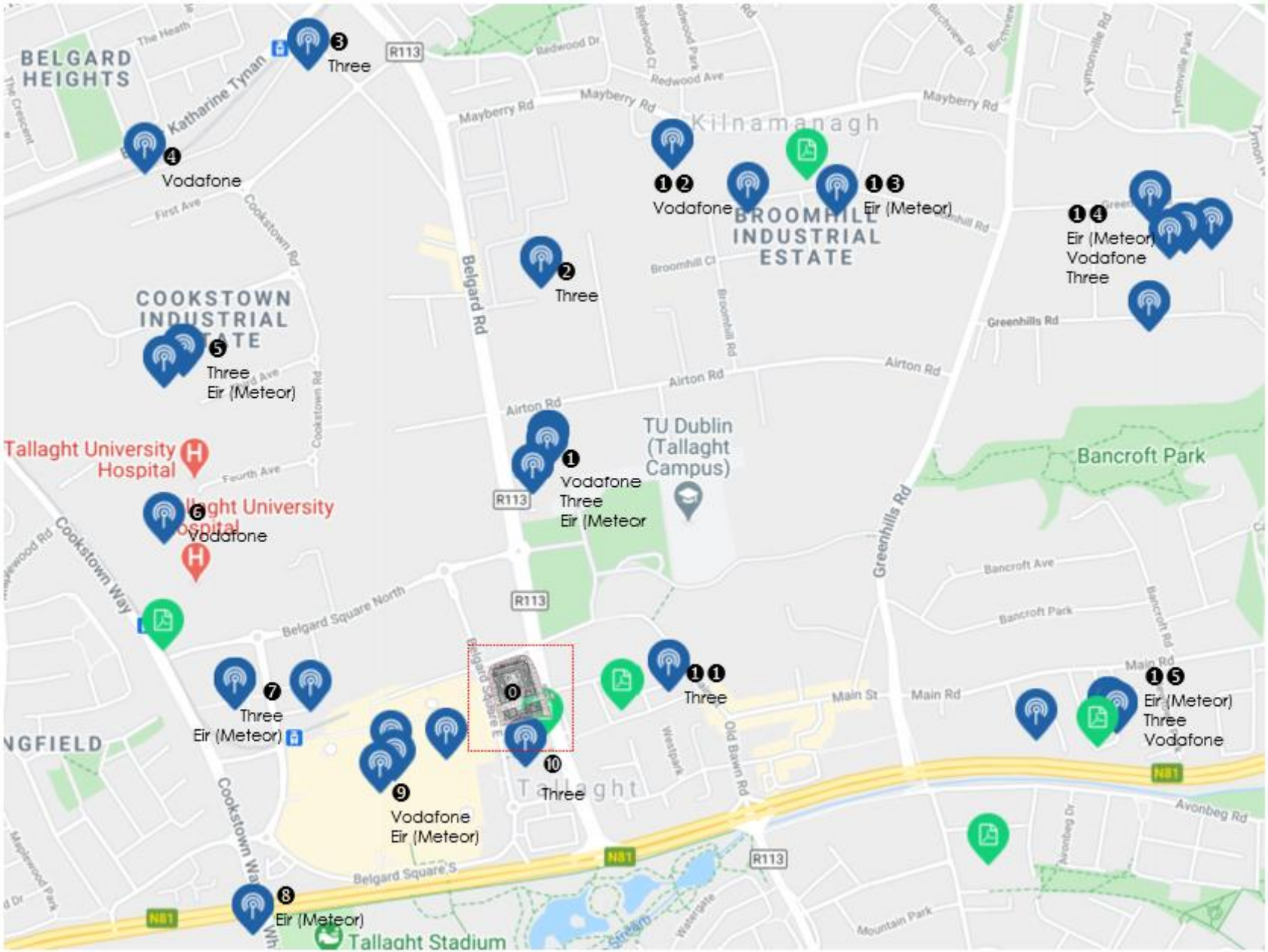
Figure 7: Identification of local area Cells by Cell ID (Cell Identification Analysis)

Figure 8: Mitigation Measures (if required in future)

Figure 5

Area Telecommunication Analysis

Source: Comreg



Note
All Dimensions to be checked on site
No Dimensions to be scaled from this Drawing
This drawing to be read with relevant Consultant Drawings

- ⓪ Proposed Development
- ❶ Eir Belgard Road
- ❷ Amazon
- ❸ European Stoves
- ❹ Goltfood Tallaght
- ❺ ESB Tallaght
- ❻ Tallaght Hospital
- ❼ Cross West
- ❽ Maldron Hotel
- ❾ The Square
- ❿ Tallaght Garda Station
- ❶❶ St John's House
- ❶❷ RSA Tallaght
- ❶❸ Bardahl Distributors
- ❶❹ Greenhills
- ❶❺ Lidl HQ

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Client
Midsal Homes Limited

Project
Belgard Square East

Option	1
Report Date	24/02/25
File Name	Belgard Square East

Drawing:
Area Site Analysis

Building	Drawing No.	Zone	Rev
SPN	B 2425		1

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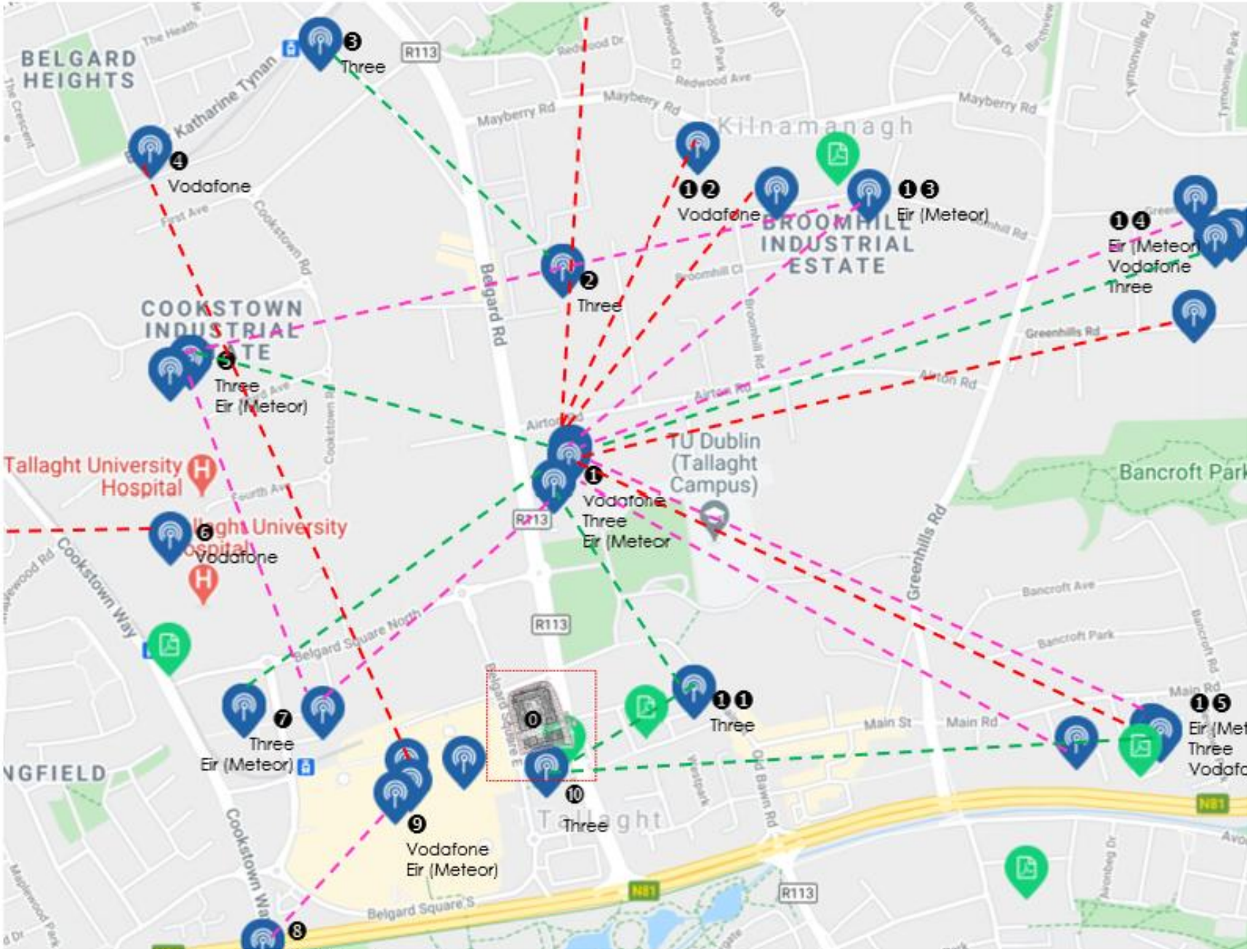
Figure 6

Microwave Link Analysis

Source: Comreg ISM Vodafone Three & Eir Mobile



Note
All Dimensions to be checked on site
No Dimensions to be scaled from this Drawing
This drawing to be read with relevant Consultant Drawings

---- Three Transmission Link
---- Vodafone Transmission Link
---- Eir Transmission Link

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Project
Belgard Square East

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File Name	Belgard Square East

Drawing:

Link Analysis

Building	Drawing No.	Zone	Rev
SPN	C 2425		1

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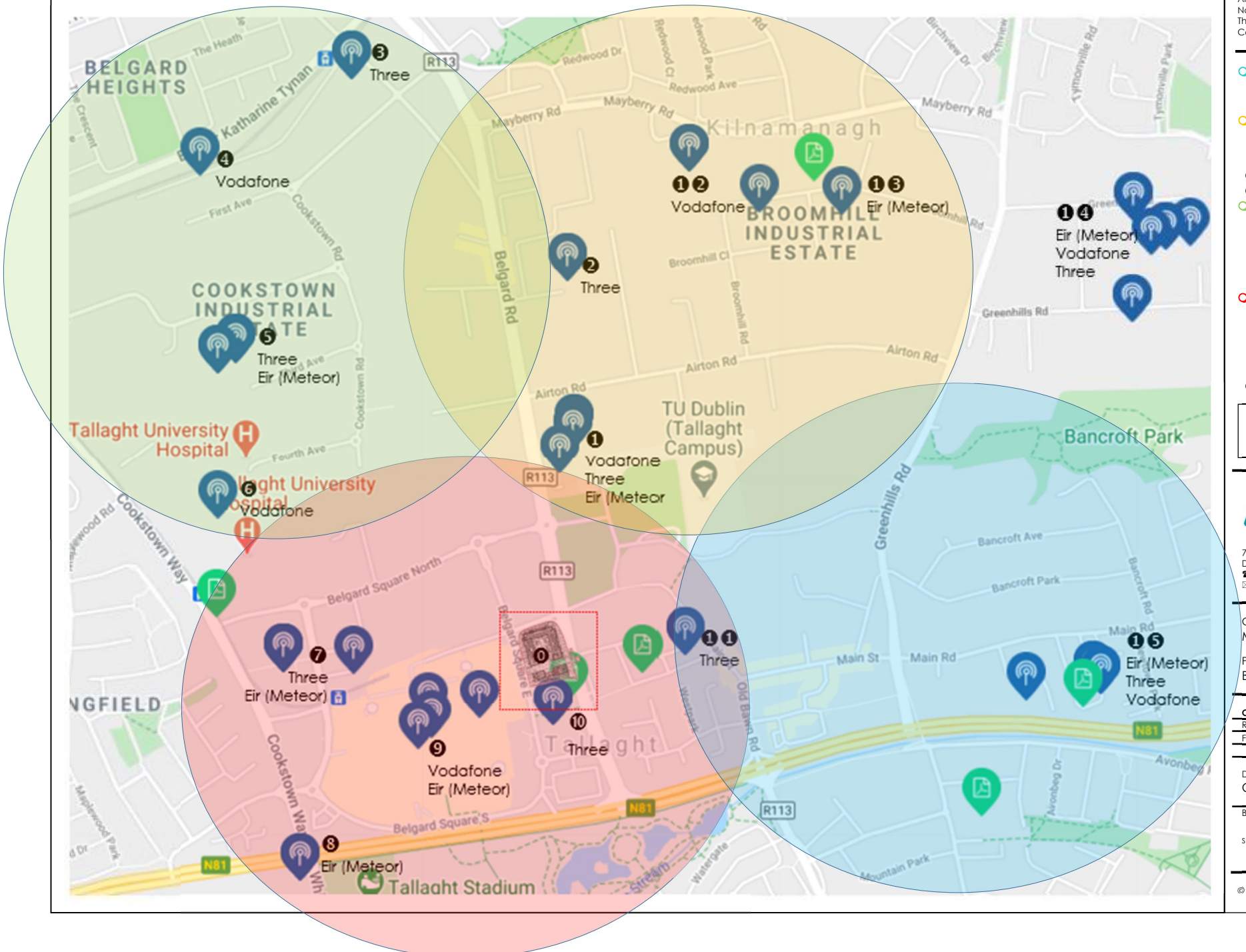
Figure 7

Drive Test Data

Source: Comreg, ISM



Note
All Dimensions to be checked on site
No Dimensions to be scaled from this Drawing
This drawing to be read with relevant Consultant Drawings

- Multiple Cell IDs
  - 1 1 St John's House
  - 1 5 Lidl HQ
- Multiple Cell IDs
  - 1 Eir Belgard Road
  - 2 Amazon
  - 1 2 RSA Tallaght
  - 1 3 Bardahl Distributors
- Multiple Cell IDs
  - 3 European Stoves
  - 4 Goltfood Tallaght
  - 5 ESB Tallaght
  - 6 Tallaght Hospital
- Multiple Cell IDs
  - 7 Cross West
  - 8 Maldron Hotel
  - 9 The Square
  - 10 Tallaght Garda Station
  - 1 1 St John's House

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Drawing:
Cell Identification Analysis

Building	Drawing No.	Zone	Rev
SPN	B 2425		1

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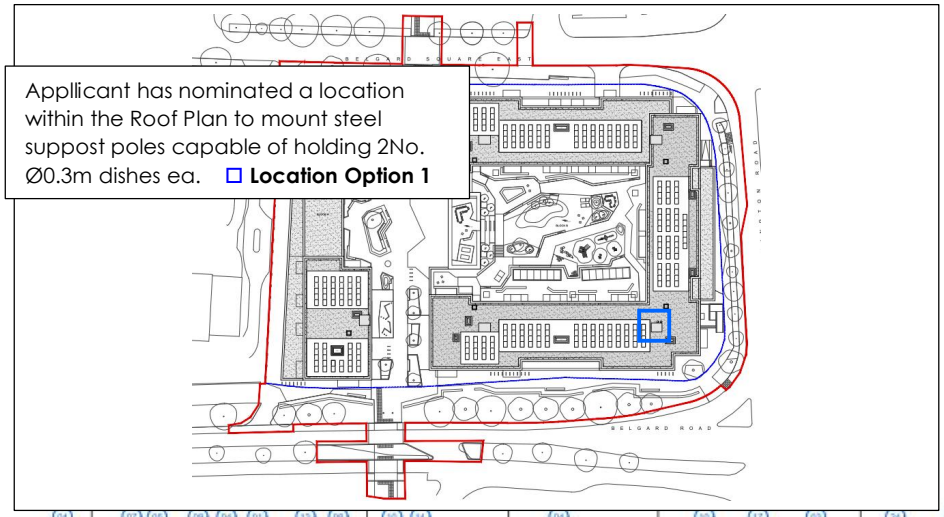
Figure 8

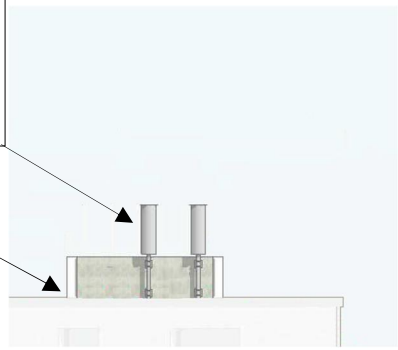
Mitigation Measure Design



4No. Ø 0.3m Microwave link dishes mounted on 2No, steel support poles affixed to the lift shaft over run and concealed with in radio friendly GRP shrouds

Lift Shaft Overrun

EXAMPLE



15. '4NO. Ø 0.3M MICROWAVE LINK DISHES MOUNTED ON 2 STEEL SUPPORT POLES AFFIXED TO THE LIFT SHAFT OVERRUN AND CONCEALED WITH IN RADIO FRIENDLY GRP SHROUDS'

Note
All Dimensions to be checked on site
No Dimensions to be scaled from this Drawing
This drawing to be read with relevant Consultant Drawings

---- Transmission Link

Location of Steel support Poles

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