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iSM INDEPENDENT SITE MANAGEMENT

Telecommunications Impact Assessment Report

DEVELOPMENT
KILGOBBIN LRD
STEPASIDE, CO. DUBLIN

25 August 2025

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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 Dun Laoghaire Rathdown 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 Kilgobbin Apartment Limited (hereinafter referred to as the "Applicant")
The Development:	means the proposed development situated at lands at Kilgobbin, Stepaside, Co. Dublin (hereinafter referred to as the "Development")

EXECUTIVE SUMMARY

Independent Site Management ('ISM') has been engaged to provide a telecommunication impact assessment, to assess whether or not the proposal being made by Kilgobbin Apartment Limited (the "Applicant") within its submission to Dun Laoghaire Rathdown County Council (the 'Planning Authority') impacts any Telecommunication Channels ("Telecommunication Channels")

To provide this assessment, ISM reviewed the Applicant's proposed development (the "Development") 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 does not impact any existing Telecommunication Channels at the time of the assessment.

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

The proposed Large-Scale Residential Development (LRD) will provide 120 no. apartment units within 2 no. blocks ranging in height from 4- to 6-storeys. The development will consist of; Block A, consisting of 44 no. units (27 no. 1 bed (2-person), 13 no. 2 bed (3-persons), 1 no. 2 bed (4-persons) and 3 no. 3 bed (5-persons) of 4- to 5-storeys height and of Block B, consisting of 76 no. units (40 no. 1 bed (2-persons), 12 no. 2 bed (3-persons), 16 no. 2 bed (4-persons) and 8 no. 3 bed (4-persons) of 5- to 6-storeys height.

The proposed development will provide all associated public open space and play area, 54 no. car parking spaces including accessible parking and Electric Vehicle parking, 273 no. bicycle parking spaces, 3 no. motorcycle parking spaces, bin/waste store and a plant room at ground floor level, 1 no. detached ESB substation and 1 no. detached bicycle store for Block A residents. The proposed development will also provide for all associated site development and infrastructural works including foul and surface water drainage, roads, footpaths, landscaping, boundary treatment and a pedestrian and cycling pathway connecting Belarmine Vale and Kilgobbin Road. Vehicular access to the development will be via Belarmine Vale.

SITE LOCATION/LAYOUT MAP

Figure 1

TELECOMMUNICATION CHANNELS

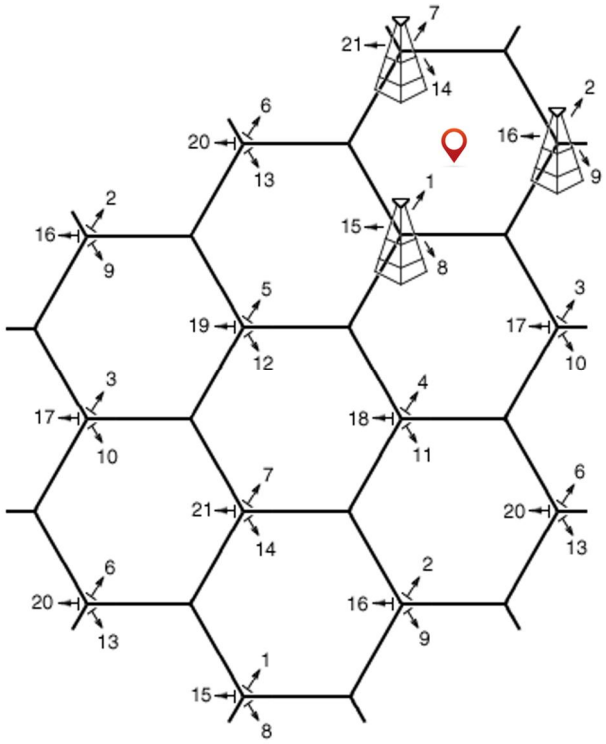
This report assesses the two wireless Telecommunication Channels or networks of Telecommunication Channels that may be affected by the height and scale of a new development, Radio Frequency links & Microwave Transmission links.

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.

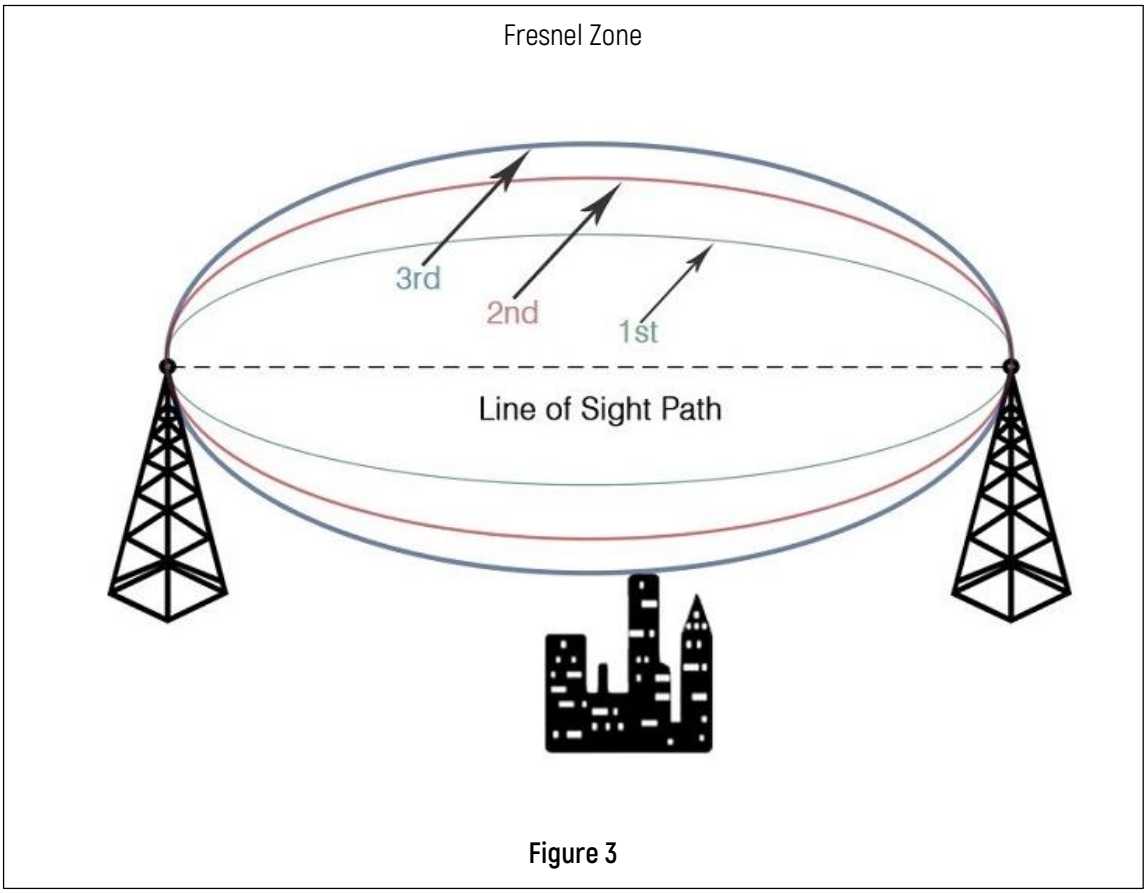


Figure 3

Essentially, if there is an obstacle in the Fresnel zone, part of the radio signal will be diffracted or bent away from the straight-line path. The practical effect is that on a point-to-point Microwave link, referred to herein, the refraction will reduce the amount of energy reaching the 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 Transmission links that will be impacted by the height and scale of the Development.

Our assessment has not identified any Radio Frequency links that will be impacted by the height and scale of the Development.

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. Please refer to Figures 4 & 5 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 drive test throughout the surrounding areas to ascertain what cells were serving the street areas to the north, south, east & west of the Development site. Please refer to Figure 6 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 semi-urban/semi-rural Radio Frequency coverage. The drive test data determined that the lands, residential and public road & amenity areas to the north, south, east & west of the Development are adequately covered by the cell sites identified in figure 6 and are not reliant on Radio Frequency coverage from any one cell that would be obstructed by the Development.

Lastly, we hasten to point out that the Development is in close proximity to Three Rock Mountain, which is home to a significantly high concentration of telecommunications channels, which are

predominantly microwave links. We can conclude that the Development will not impact these telecommunication channels as the height and site elevation are well below the above ground level heights of the telecommunication channels emanating from the masts on Three Rock Mountain.

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 does not impact any existing Telecommunication Channels at the time of the assessment and therefore we have not made any recommendations that the Applicant allow for, or implement any mitigating infrastructure relative to the specific assessment in section 3.2 of the Urban Development and Building Heights Guidelines (December 2018).

DISCLAIMER

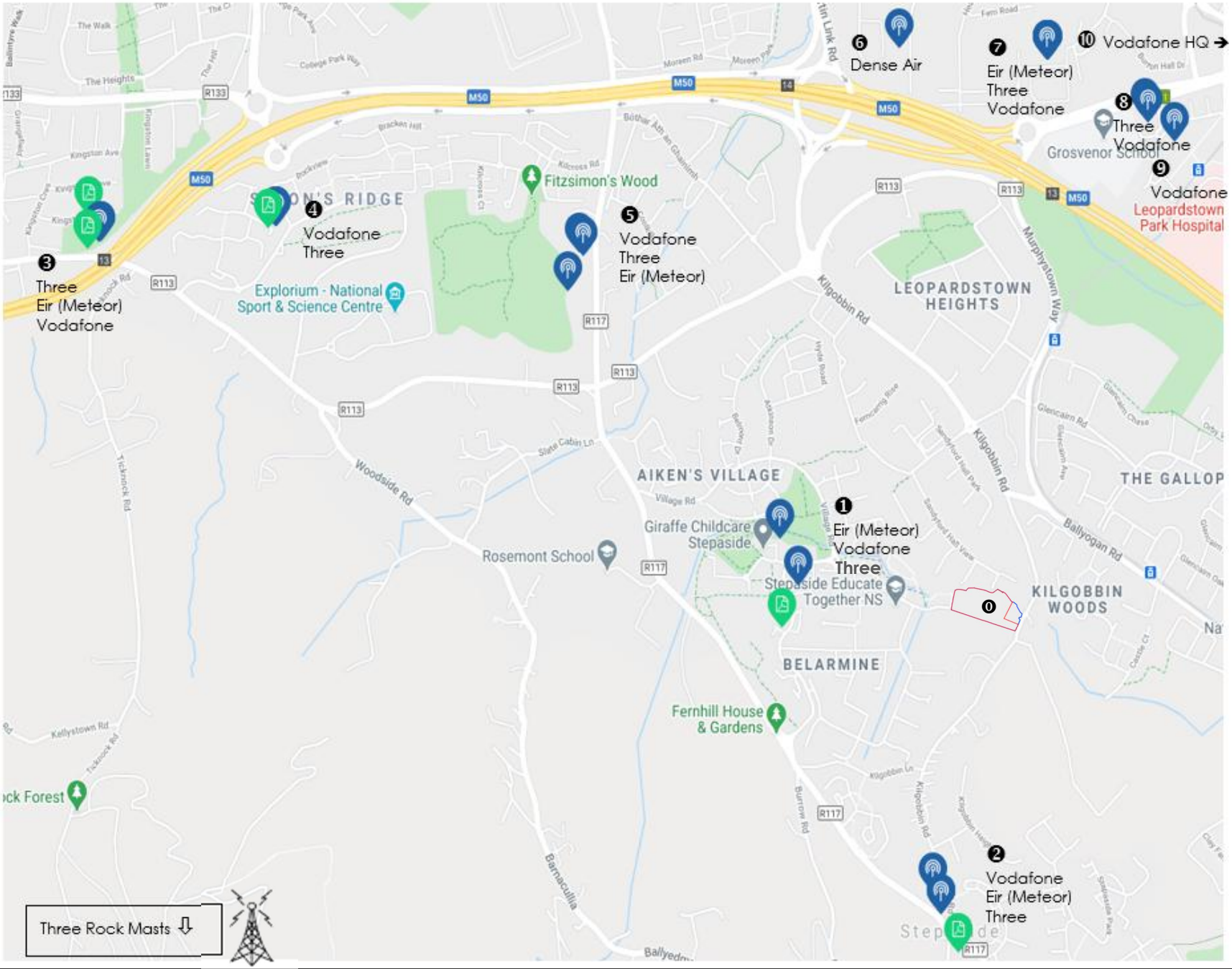
Due to the confidential nature of planning applications/submissions, ISM does not, as standard practice, contact or involve Ireland's licenced Mobile Network Operators, namely: Vodafone Ireland; Three Ireland; or Eircom Limited t/a Eir Mobile, when preparing this report. If contact is made with a Mobile 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 4 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

- ⓿ Proposed Development
- ❶ Belarmine Plaza
- ❷ Stepaside Garda Station
- ❸ DLRCC Water Tower
- ❹ Blackglen Medical
- ❺ Sandyford ESB Mast(s)
- ❻ Sandford St furniture
- ❼ ESB Leapordstown Mast
- ❽ Clayton Hotel
- ❾ Central Park
- ❿ Vodafone Headquarters

*Three Rock Mountain hosts a high concentration of telecommunication channels.

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Client
Kilgobbin LRD

Project
Kilgobbin Apartment Ltd

Option	1
Report Date	06/05/2025
File Name	

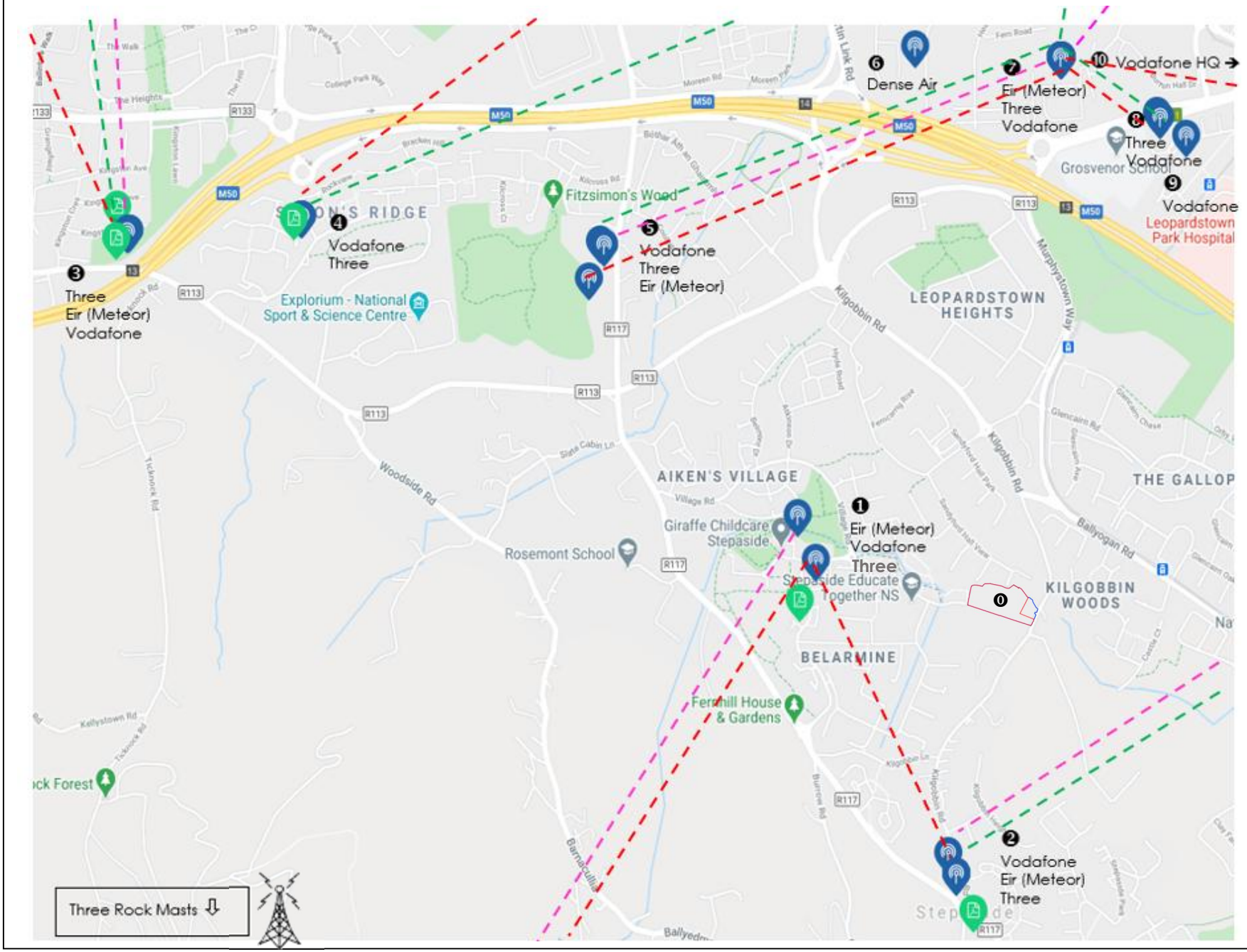
Drawing:
Area Site Analysis

Building	Drawing No.	Zone	Rev
SPN	E 0625		1

Figure 5

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

Three Rock Mountain hosts a high concentration of telecommunication channels. It is not impacted by the development because of its height which far exceeds those sought by the applicant

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Report Date	06/05/2025
File Name	

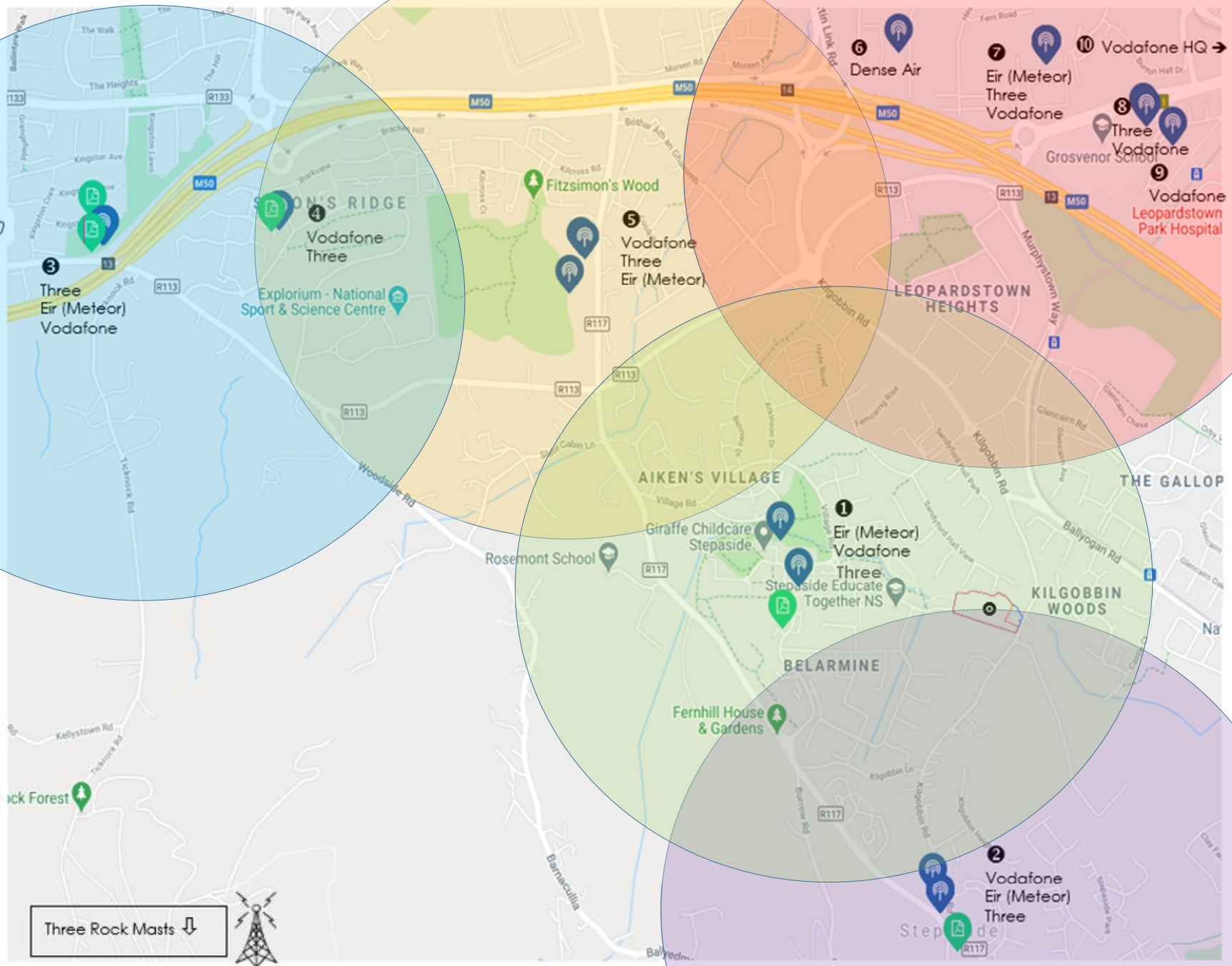
Drawing:
Link Analysis

Building	Drawing No.	Zone	Rev
SPN	E 0625		1

Figure 6

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
  - ❸ DLRCC Water Tower
  - ❹ Blackglen Medical
- Multiple Cell IDs
  - ❹ Blackglen Medical
  - ❺ Sandyford ESB Mast(s)
- One Cell IDs
  - ❷ Stepaside Garda Stat.
- One Cell IDs
  - ❶ Belarmine Plaza
- Multiple Cell IDs
  - ❻ Sandford St furniture
  - ❼ ESB Leapordstown Mast
  - ❽ Clayton Hotel
  - ❾ Central Park
  - ❿ Vodafone HQ

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Project
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Option	**1**
Report Date	06/05/2025
File Name	

Drawing:
Cell Identification Analysis

Building	Drawing No.	Zone	Rev
SPN	E 0625		1