



Telecommunications Impact Assessment

DEVELOPMENT BAILEY GIBSON SHD 2

07 June 2022

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DEFINITIONS

Author:	Independent Site Management Limited (hereinafter referred to as "ISM")
Planning Body:	means An Bord Pleanála (hereinafter referred to as the "Planning Body")
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 CWTC Multi Family ICAV acting solely in respect of its sub fund DBTR SCR1 Fund (hereinafter referred to as the "Applicant")
The Development:	means the proposed development situated at the former Bailey Gibson Site, former Player Willis Site, Dublin City Council land (formerly Boys Brigade pitch and part of St. Teresa's Gardens (all withing Strategic Development Regeneration Area 12), South Circular Road and Donore Avenue, Dublin 8 (hereinafter referred to as the "Development")

EXECUTIVE SUMMARY

Independent Site Management ('ISM') has been engaged to provide an assessment as to whether the proposal being made by CWTC Multi Family ICAV acting solely in respect of its sub fund DBTR SCR1 Fund (the "Applicant") within its submission to An Bord Pleanála (the 'Planning Body'), impacts any Telecommunication Channels ("Telecommunication Channels").

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 Body 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 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 20 years.

ISM is a multidiscipline firm proficient in the 3 main areas in the delivery of telecommunication services:

- (1) Radio Frequency technology;
- (2) Microwave Transmission technology; &
- (3) Fixed Line fiber optic & copper technologies.

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

ISM has designed, built and operates 6 in-building distributed antenna systems, and 2 large area managed fibre optic networks.



DEVELOPMENT DESCRIPTION

This application relates to a proposed mixed-use strategic housing development (SHD) on a site of approx. 5.5 hectares in Dublin 8. It includes all of the former Bailey Gibson site and a small portion of the former Player Wills site, both of which are owned by the Applicant, CWTC Multi Family ICAV acting solely in respect of its sub fund DTBR SCR1 Fund. The balance of the proposed development site relates to land owned by Dublin City Council (DCC) known locally as the 'Boys Brigade pitch' and part of the St. Teresa's Gardens site, together with DCC controlled public roads.

The application area is predominately within Strategic Development Regeneration Area (SDRA) 12, St. Teresa's Gardens & Environs as identified in the Dublin City Development Plan 2016-2022. The part of the proposed development site not within SDRA 12 relate to works proposed in the public roads surrounding the site, South Circular Road, Donore Avenue and Rehoboth Place.

A comprehensive description of the proposed development is set out in the Planning Statement. The Statutory Notices should also be referenced.

Briefly, it is proposed to demolish the existing vacant buildings and structures on the Bailey Gibson site to make way for development of 345 new homes across 5 blocks, BG 1 - BG 5, ranging in height from 2-7 storeys. The residential blocks will be contained within the Bailey Gibson site. The typology is predominantly apartments with 4 townhouses proposed in block BG5.

This is a mixed tenure scheme, with 292 units proposed as Build to Rent (BtR) across blocks BG1-BG3 and 53 units proposed as Build to Sell (BtS) in blocks BG4 and BG5. It is proposed to deliver 34 social and affordable homes as part of the overall total.

All apartments have private amenity space. At ground floor this is in the form of terraces and on upper levels, balconies. Each of BG1-BG4 have communal amenity areas either as a courtyard or podium area.

Tenant amenities and facilities are proposed in the BtR blocks and include a gym, co-working space, kitchen/lounge areas, concierge, and waste facilities.



Over 2 hectares of public open space including a multi-sport play pitch, a playground, 'St. Teresa's Playground', a boulevard, 'St. Teresa's Boulevard', a park, 'Players Park', a plaza, 'Rehoboth Plaza'.

The proposed non-residential uses include in blocks BG1 and BG2 commercial units that have the capacity to support daily living needs e.g., a shop, pharmacy and professional services. A creche with capacity for approx. 60 children. In block BG2 the design includes floorspace for a café/restaurant/bar.

In total there are 89 car parking spaces allocated to the proposed apartments and all are contained within the Bailey Gibson site. Apart from 1 space at podium level, the parking is contained within a basement. Additionally, 10 'Go Car' spaces are proposed at podium level for residents use only. Each of the 4 townhouses has 1 on-curtilage car parking space.

Visitor parking is at street level and the proposed sport pitch will be serviced separately by new spaces on the public roads. The scheme includes set down parking for the creche, a loading bay for deliveries and coach parking area.

Provision is made for disabled parking, electric vehicle charging, a car sharing scheme and motorcycle parking.

784 spaces are proposed for cycle parking including secure residents parking, visitor parking and spaces for cargo bicycles.

Other works include the development of a network of streets across the proposed development site that will link with other sites within SDRA 12 and into the wider street network of Dublin 8. Improvement works within existing local streets to facilitate access and safe movement.

Ancillary development works includes the construction of electricity substations, meter rooms, plant rooms at basement level, waste storage areas, solar photovoltaics, drainage, landscaping, and lighting.



SITE LOCATION/LAYOUT MAP

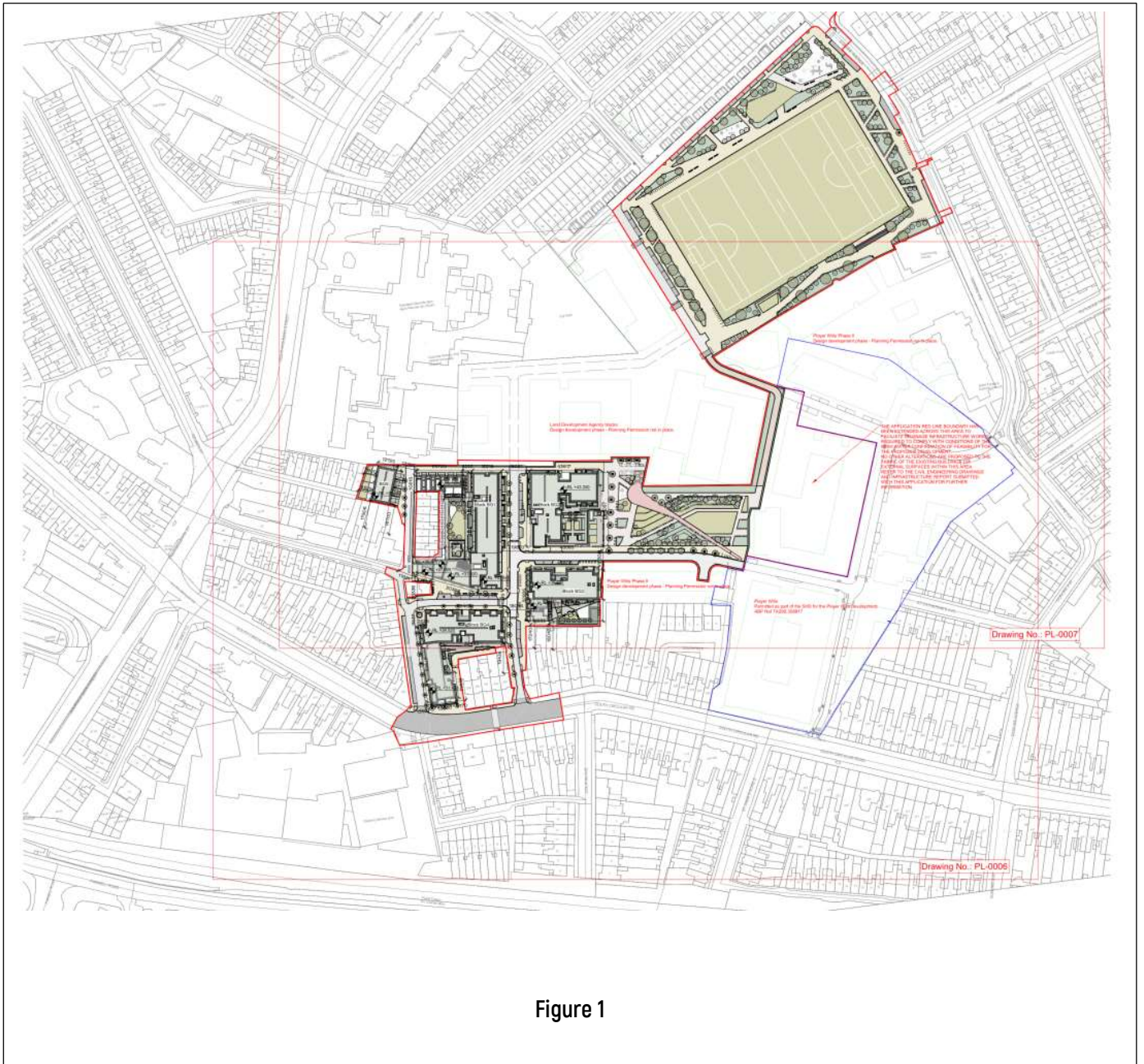


Figure 1

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.

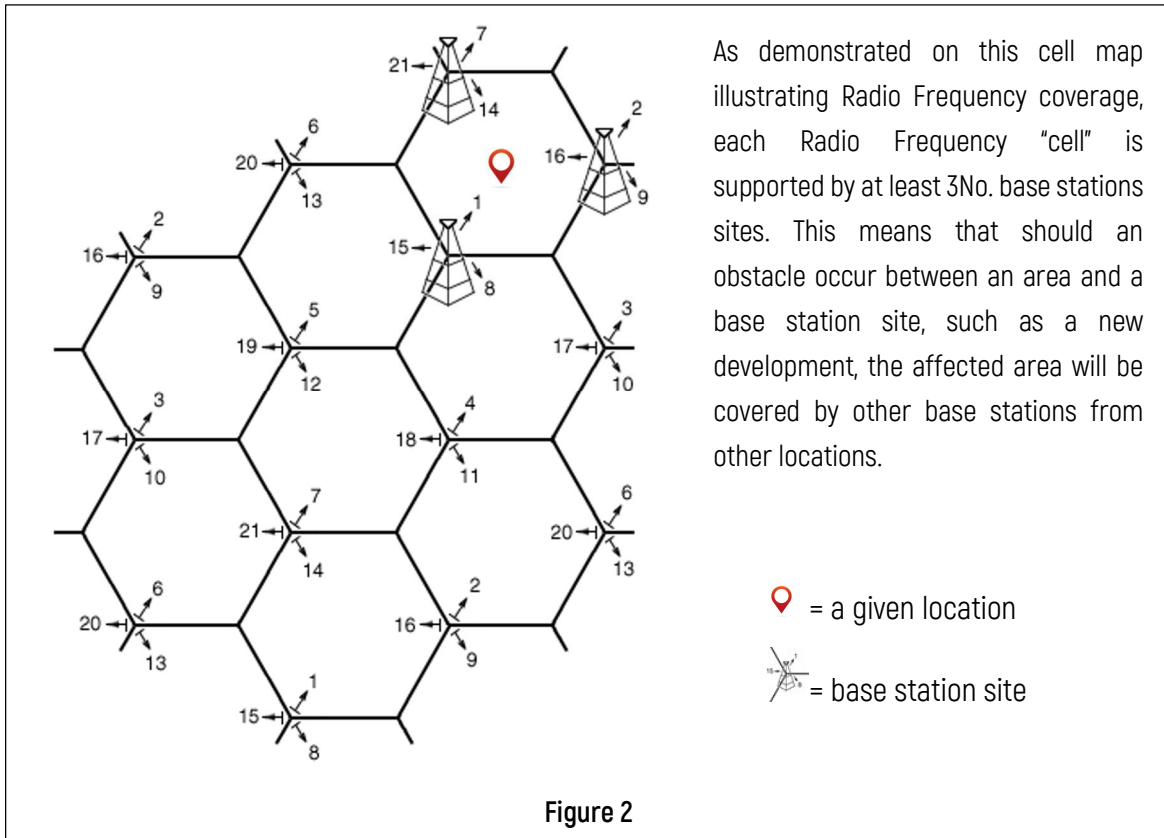
Radio Frequency links & Microwave Transmission Links are used in Ireland's mobile phone and fixed wireless networks and disseminate at an average above ground level height of 20m, making them the most relevant Telecommunication Channels to be assessed in relation to the height and scale of a new development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

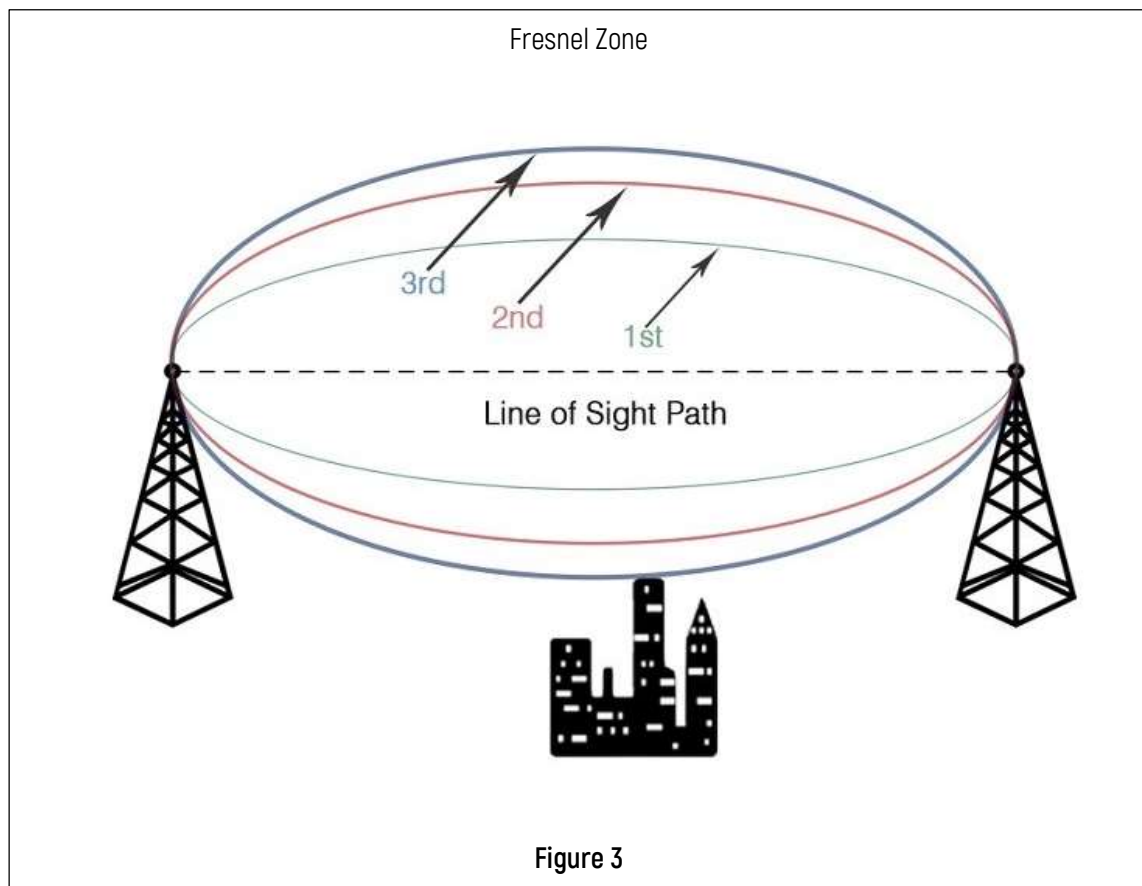




Cellular networks offer a number of desirable features, but most notably, additional cell towers can be added indefinitely and are not limited by the horizon, therefore it can be considered **indeterminable** as to whether a new development affects the Radio Frequency coverage of a geographical area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



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. Refer to Figure 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 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 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 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 6 and are not reliant on Radio Frequency coverage from any one cell that would be obstructed by the Development.

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



APPENDICIES

Figure 4: Identification of neighbouring registered and documented telecommunication sites
(Area Telecommunication Analysis)

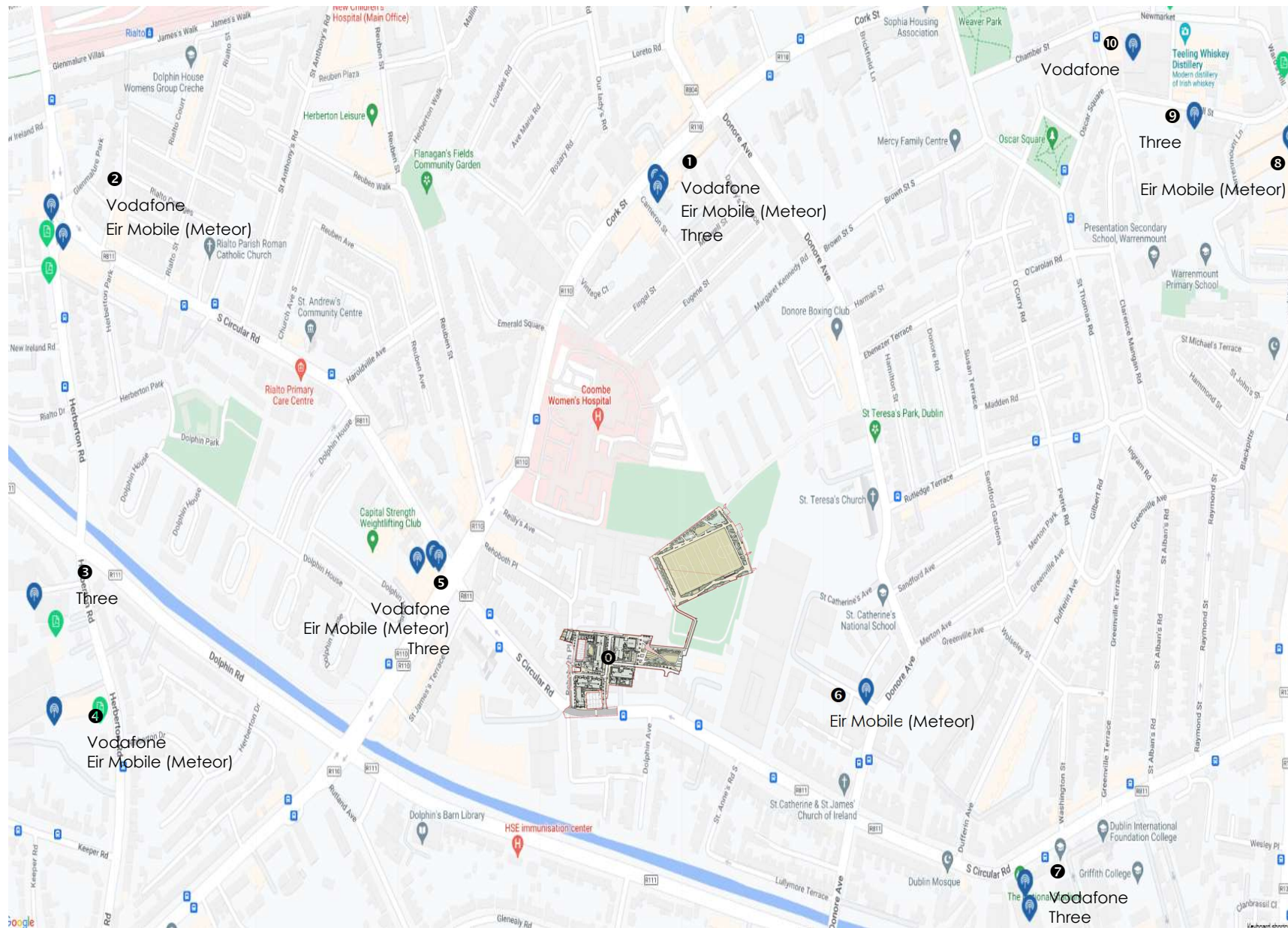
Figure 5. Identification of Microwave links disseminating from neighbouring registered and
documented telecommunication sites (Microwave Link Analysis)

Figure 6: Identification of local area Cells by Cell ID (Cell Identification Analysis)

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

- 10 Proposed Development
- 1 Tannery Apt Building
- 2 Bird Flannigan
- 3 G4 Security
- 4 Herberton Road
- 5 Rom Massey (DB)
- 6 St Catherine's Church
- 7 National Stadium
- 8 ISS
- 9 The Tannery Student (ISM)
- 10 New Mill (ISM)

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FINAL

ISM INDEPENDENT SITE MANAGEMENT
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Client
 CWTC Multi Family ICAV acting
 solely in respect of its sub fund DBTR
 SCR1 Fund

Project
 Bailey Gibson SHD 2

Option	1
Report Date	14/05/22
File Name	Bailey Gibson SHD 2

Drawing:
 Area Site Analysis

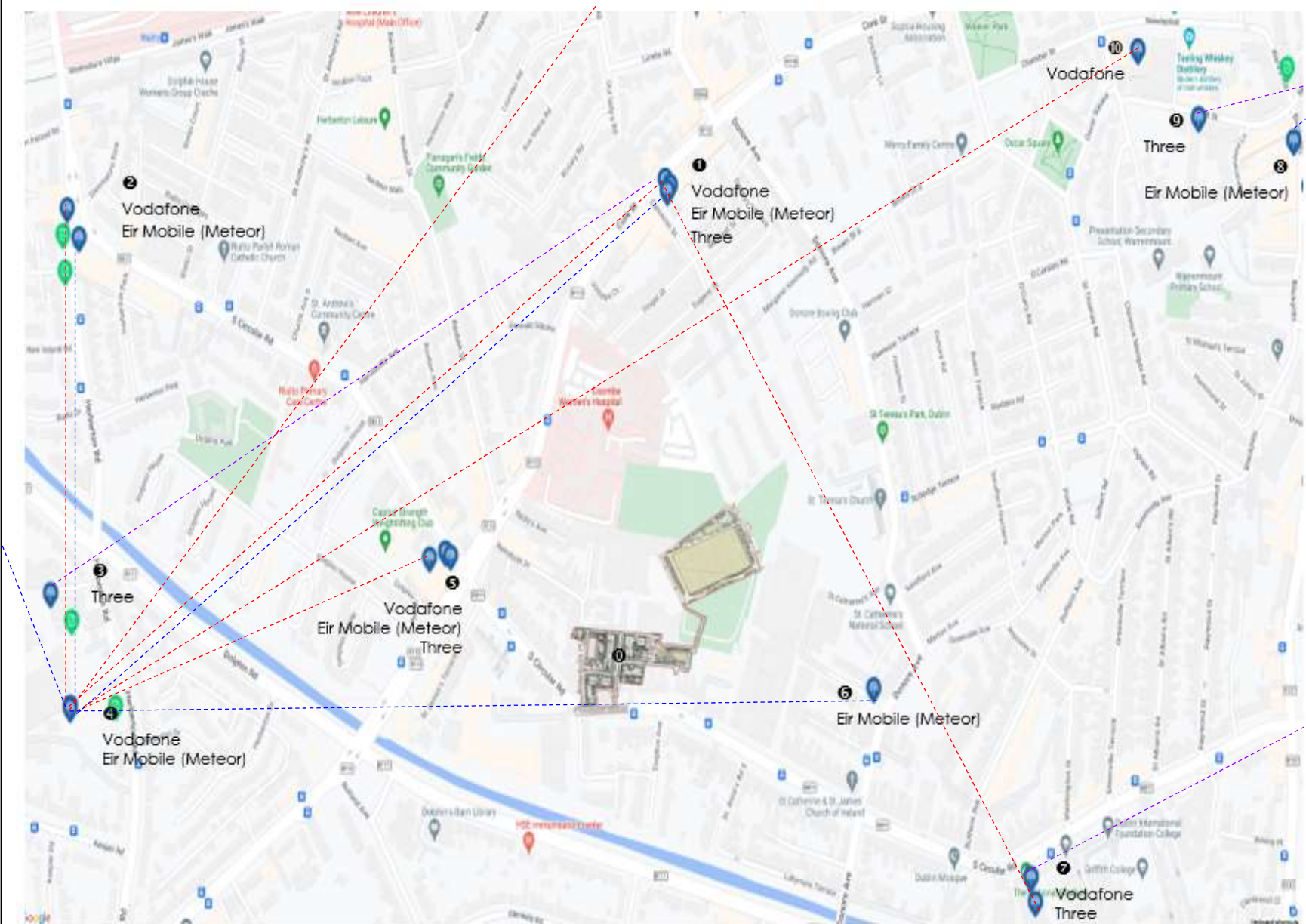
Building	Drawing No.	Zone	Rev
SPN	E 3122		1

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

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Project
 Bailey Gibson SHD 2

Option	1
Report Date	16/05/22
File Name	Bailey Gibson SHD 2

Drawing:
 Link Analysis

Building	Drawing No.	Zone	Rev
SPN	E 3122		1

Figure 6

Walk 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
- ⑥ St Catherine's Church
- ⑦ National Stadium
- Multiple Cell IDs
- ① Tannery Apt Building
- Multiple Cell IDs
- ② Bird Flannigan
- Multiple Cell IDs
- ③ G4 Security
- ④ Herberton Road
- ⑤ Rom Massey (DB)
- Multiple Cell IDs
- ⑧ ISS
- ⑨ The Tannery Student
- ⑩ New Mill

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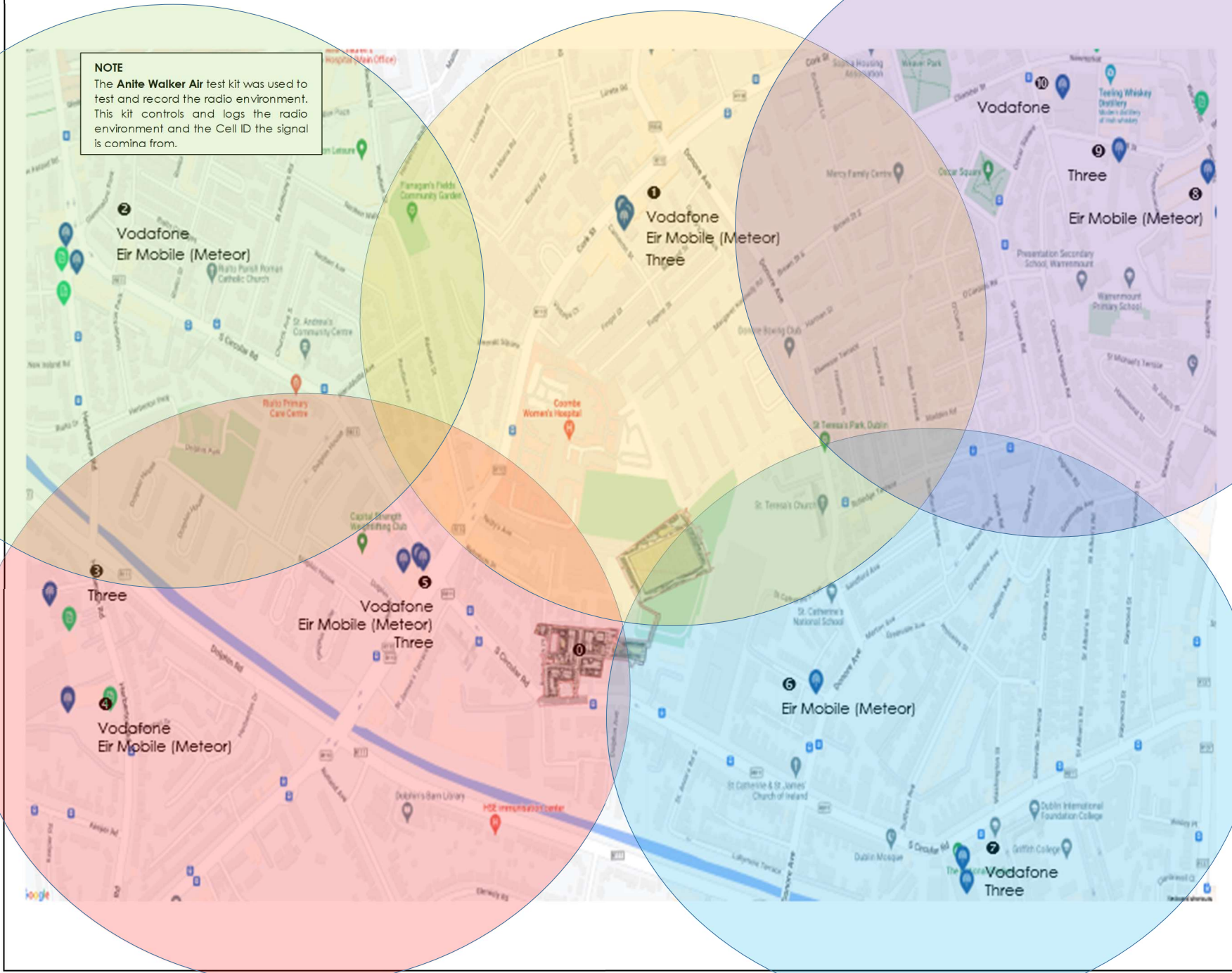
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Project
 Bailey Gibson SHD 2

Option	1
Report Date	16/05/22
File Name	Bailey Gibson SHD 2

Drawing:
 Cell Identification Analysis

Building	Drawing No.	Zone	Rev
SPN	E 3122		1



NOTE
 The Anite Walker Air test kit was used to test and record the radio environment. This kit controls and logs the radio environment and the Cell ID the signal is coming from.