



Telecommunications Report - Section 3.2 of the Building Height Guidelines (2018)

DEVELOPMENT INDEPENDENT HOUSE

12 March 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 Dublin City 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.
Report Date:	means the date which the assessment was carried out (hereinafter referred to as "Report Date")
Telecommunication Channels:	means Radio Frequency links & Microwave Transmission links (hereinafter referred to as "Telecommunication Channels")
The Applicant:	means Summix IHD Developments Limited (hereinafter referred to as the "Applicant")
The Development:	means the proposed development situated at a c. 0.278 Ha site at Nos. 87-93 Middle Abbey Street, Dublin 1, D01 NH70 (known collectively as 'Independent House') 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 Summix IHD Developments Limited (the "Applicant") within its submission to Dublin City Council (the 'Planning Authority'), allows for the retention of important Telecommunication Channels ("Telecommunication Channels") such as microwave links, to satisfy the criteria of both Section 3.2 of the Building Height Guidelines (2018) and Objective 5, within Table 4 of Appendix 3 of the Dublin City Council Development Plan 2022-2028.

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 both the criteria of Section 3.2 of the Building Height Guidelines (2018) and Objective 5, within Table 4 of Appendix 3 of the Dublin City Council Development Plan 2022-2028.



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.

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DEVELOPMENT DESCRIPTION

Summix IHD Developments Limited intend to apply to Dublin City Council for a permission for a large-scale residential development principally comprising student accommodation at a c. 0.3 Ha site at Nos. 87-93 Middle Abbey Street, Dublin 1, D01 NH70 (known collectively as 'Independent House'). The site is generally bound by Prince's Street North to the north, William's Lane and Nos. 94-96 Middle Abbey Street to the west, Middle Abbey Street to the south, and Nos. 35-39 O'Connell Street Lower (known as 'Penneys') to the east. The site comprises 6 No. interconnecting, long-standing vacant structures as follows: (a) a principally part 5 No. to part 6 No. storey above basement level building fronting Middle Abbey Street, known as Independent House, with a single storey workshop building to the rear; (b) a 5 No. storey (above basement level) building at the corner of Middle Abbey Street and William's Lane, known as Emerald Chambers; (c) a triple height (at basement level) structure towards the centre of the site, known as the 'Printing Hall'; (d) a 2 No. storey (above basement level) warehouse and office fronting William's Lane; (e) a part 3 No. to part 4 No. storey (above basement level) loading bay and office fronting Prince's Street North; and (f) a 3 No. storey (above basement level) office in the eastern portion of the site, bounded by Penneys. The site includes 2 No. Protected Structures (RPS Ref. Nos. 18 & 8797).

The development's surface water and foul water drainage network shall discharge from the site into the existing combined sewer located along Prince's Street North to the north-west of the site. A new pedestrian crossing and upgrade works to the footpath and kerb along Prince's Street North are proposed. Public realm improvements are also proposed to William's Lane. The development site area, drainage works, road works and public realm improvements will provide a total application site area of c. 0.33 Ha.

The development will principally consist of: the retention and refurbishment of part of the building façade along Prince's Street North; the demolition of the 3 No. former warehouses and offices (c. 5,270 sq m) and the lowering of part of the basement level thereat; the demolition of part of the adjoining wall to the north-east of the site, bounding the Penneys loading bay; the partial demolition of the Printing Hall (c. 457 sq m) and the rear of Emerald Chambers (c. 150 sq m) and Independent House (c. 100 sq m); the removal of the existing concrete roof slab at



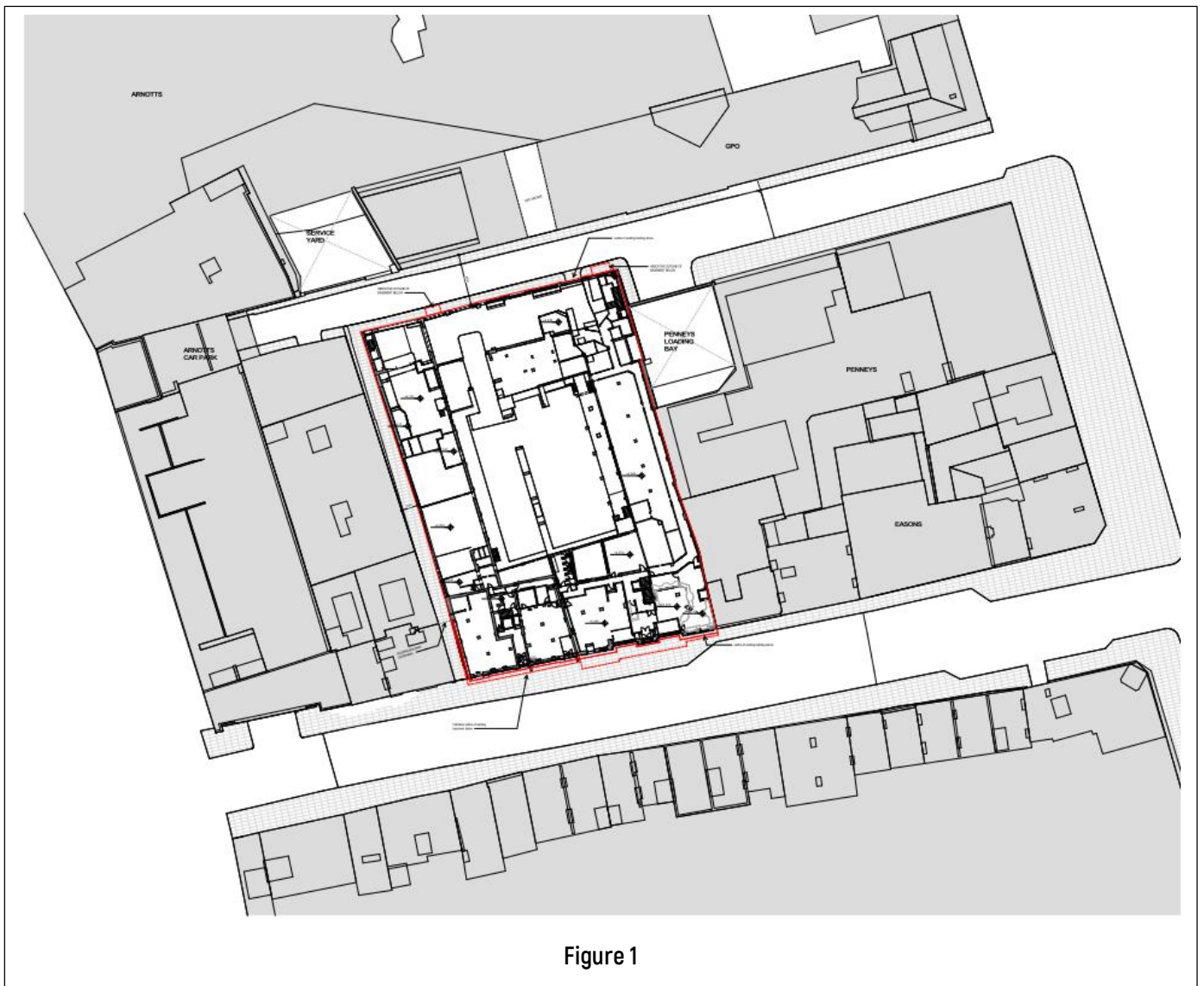
Emerald Chambers to facilitate an increase in floor-to-ceiling height at fourth floor level; the lowering of part of the ground floor level in Independent House and Emerald Chambers for universal access; refurbishment works to the Protected Structures including general internal and external works for conservation repairs, maintenance, change of use and upgrading of the buildings; and the construction of a part 1 No. to part 9 No. storey over basement building connecting into the retained structures and principally comprising 316 No. Student Accommodation bedspaces (267 No. standard rooms, 5 No. accessible rooms, 2 No. twin studios (4 No. bedspaces), 10 No. accessible studios and 30 No. single studios) with associated facilities, which will be utilised for short-term let during student holiday periods. The 272 No. standard and accessible rooms are provided in 42 No. clusters ranging in size from 5 No. bedspaces to 8 No. bedspaces, and all clusters are served by a communal living/kitchen/dining room.

The development also provides: ancillary internal and external communal student amenity spaces and support facilities; cultural and community floor space (c. 644 sq m); 3 No. retail units (c. 216 sq m); a café/restaurant (c. 254 sq m); bicycle stores at basement and ground floor levels; visitor cycle parking spaces; bin stores; ESB substation; hard and soft landscaping; green/blue roofs; new telecommunications infrastructure at roof level, together with all associated equipment; boundary treatments; PV panels; plant; lift overruns; and all associated works above and below ground.

The gross floor area of the development is c. 15,413 sq m comprising c. 12,751 sq m above basement level.



SITE LOCATION/LAYOUT MAP



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

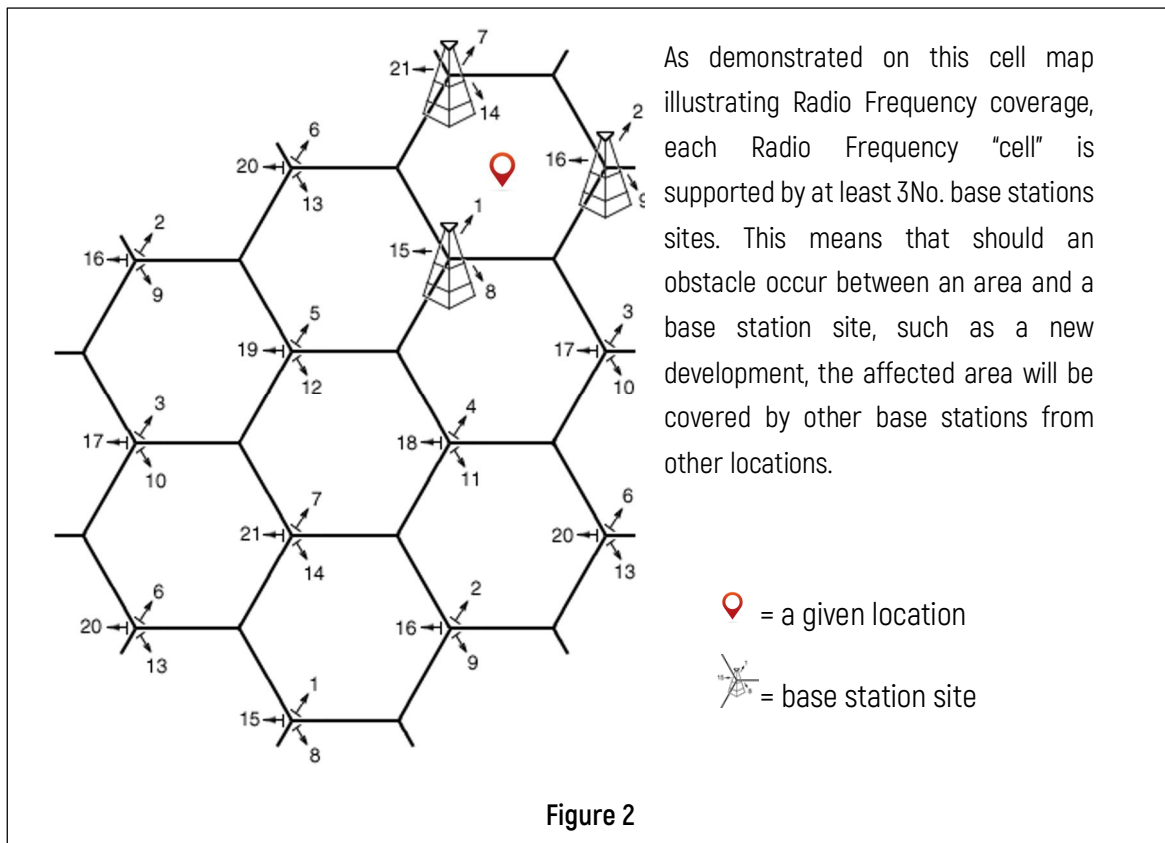
Radio Frequency links & Microwave Transmission Links are used in Ireland's mobile phone and fixed wireless networks and disseminate at an average above ground level height of 20m, making them the most relevant Telecommunication Channels to be assessed in relation to the height and scale of a new development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

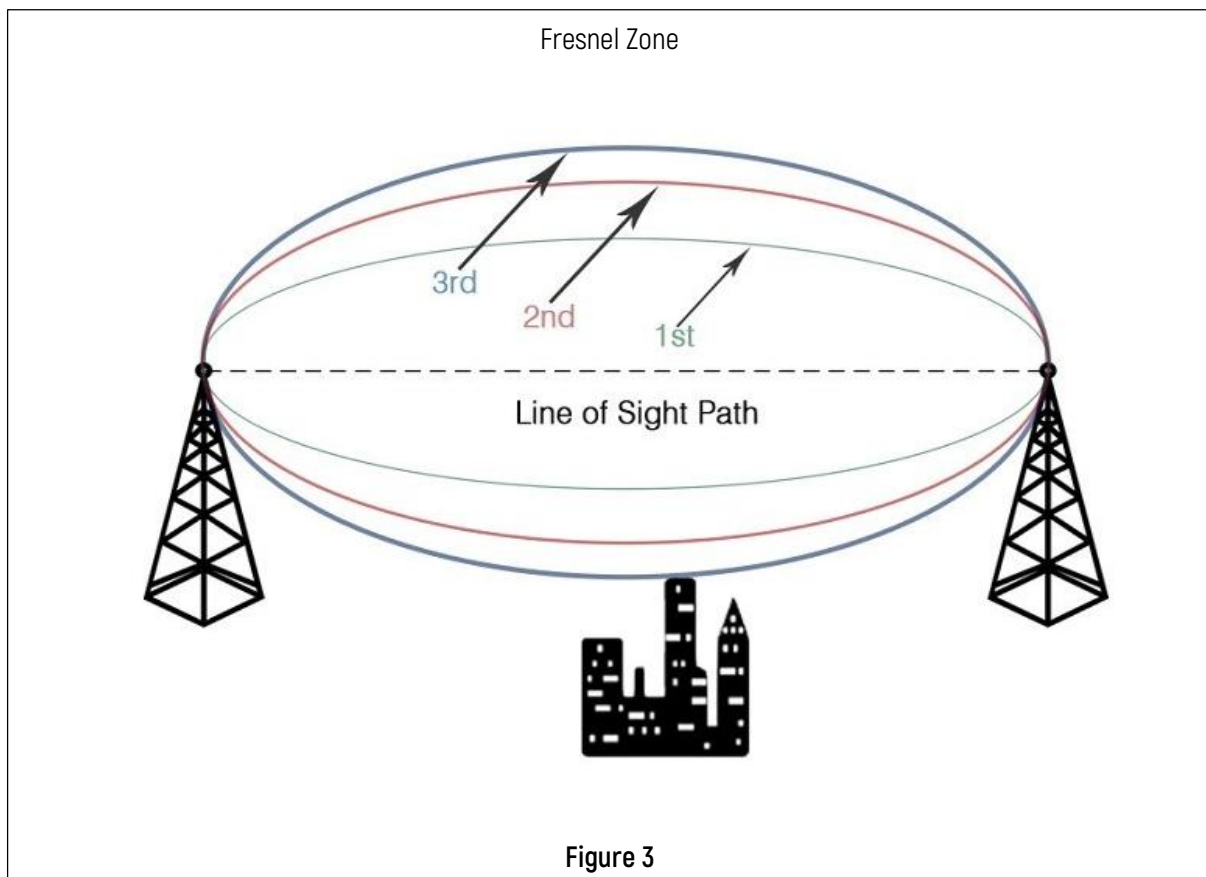




Cellular networks offer a number of desirable features, but most notably, additional cell towers can be added indefinitely and are not limited by the horizon, therefore it can be considered **indeterminable** as to whether a new development affects the Radio Frequency coverage of a geographical area 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 identified 3 No. Microwave links that will require the Applicant to make specific allowances for their retention ("Mitigation Measures").

Our assessment also identified 3 No. Radio Frequency links that will require the Applicant to make specific allowances for their retention.

ISM carried out a full assessment of the 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.

Impacted Microwave links:

- (1) 1 No. is a Microwave Transmission link installed by Eir Mobile (Meteor);
- (2) 1 No. is a Microwave Transmission link installed by Three Ireland; &
- (3) 1 No. is a Microwave Transmission link installed by Vodafone Ireland

The 3 No. Microwave links are installed on a high concentration roof top telecommunication site hosting Vodafone Ireland, Three Ireland and Eir Mobile which is located <50 meters due east of the development site boundary. This roof top telecommunication site is providing cellular coverage for the local area businesses: retail, office and hospitality, together with providing coverage for the local transit corridor along Abbey Street and O'Connell Street as well as pedestrian traffic on Henry, Mary, and Liffey Street. Please refer to Figure 4.0 & 4.1.

The Microwave links are situated at an approximate above ground level height between 18m to 25m (AGL). We've calculated the Fresnel zones of each Microwave link, and it is evident that the proposed height and scale of the Development will cause significant diffraction to both Microwave links directed over the proposed development site.



ISM also 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 residential, business, & transport districts to the north, south, east & west of the Development site. Refer to Figure 7 of the appendices for full analysis.

Impacted Radio Frequency links:

- (1) 1 No. is a Radio Frequency link installed by Eir Mobile (Meteor). Azimuth Range 200°-350°az
- (2) 1 No. is a Radio Frequency link installed by Three Ireland. Azimuth Range 200°-350°az
- (3) 1 No. is a Radio Frequency link installed by Vodafone Ireland. Azimuth Range 200°-350°az

Our assessment identified Radio Frequency coverage for the local geographic area is served by numerous cells at a range of short distances to the development site, which is a typical cell pattern for urban Radio Frequency coverage. The assessment identified the local or immediate area is served by 5 cells from sites at short-range distances from the Development.

The drive test data determined that some business, residential, and the public road and transport areas to the northwest of the development site, receive signal from the Radio Frequency links emanating from the aforementioned high concentration roof top telecommunication site hosting Vodafone Ireland, Three Ireland and Eir Mobile which is located <50 meters due east of the development site boundary. Please refer to Figure 4.0 & 4.1.

It is therefore our finding that the proposed heights sought by the Applicant will impact the identified Radio Frequency links (existing and proposed). We have set out the impacted area within Figure 7.

Existing Vodafone, Three & Eir Mobile Telecommunication Roof Top Site (Eason's Building)



Figure 4.0

Impacted Sector

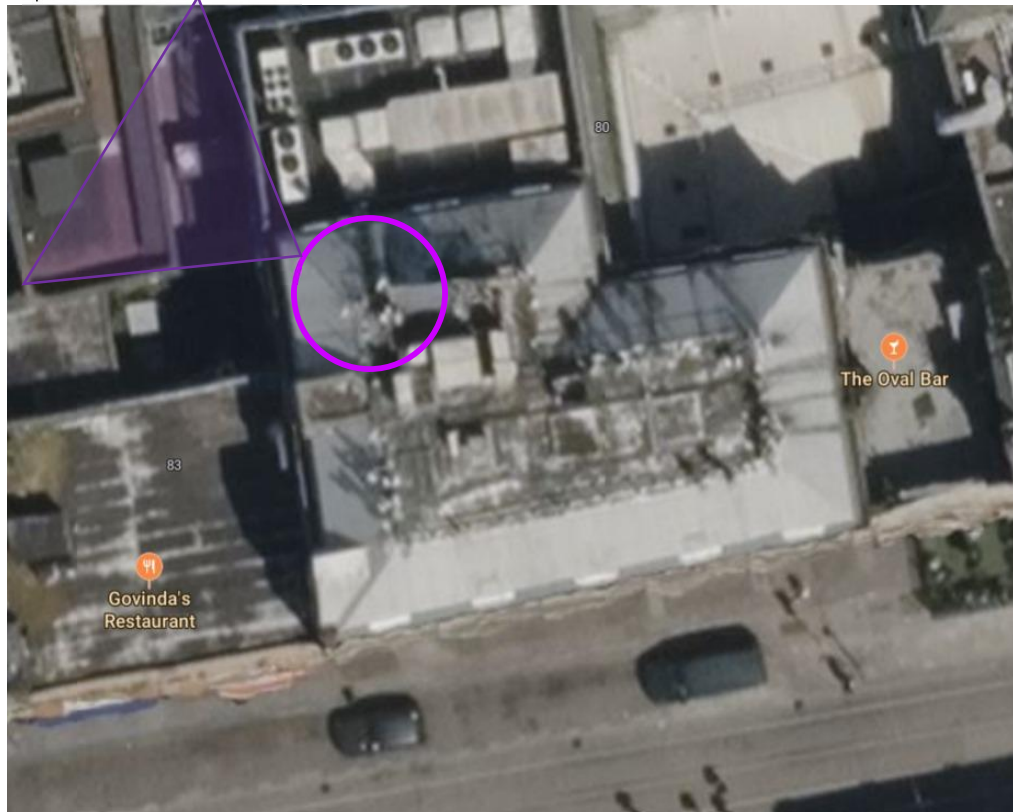


Figure 4.1

Additionally, it should be noted that the Development is located within a significantly high concentration of telecommunication channels emanating from multiple sites within a very close proximity to the Development which would be typical of a high footfall urban centre wireless telecommunication environment.

Most notably:

- 📍 295m (approx.) to the northwest of the Development, situated on the Ilac Centre Building, 1 large high-capacity telecommunication roof top site being utilised by all 3No. Irish mobile operators. Refer to Figure 4.2
- 📍 670m (approx.) to the southwest of the Development, situated on an Eir Exchange Building, 1 large high-capacity telecommunication mast being utilised by all 3No. Irish mobile operators. Refer to Figure 4.3

On each of these sites, plus numerous others in the city centre demise, there is a sizable number of antennae (Radio Frequency links) and transmission dishes (Microwave Links) and a strong likelihood that, as telecommunication networks expand, so will the proliferation of equipment on those structures and those on neighbouring sites.

ISM is therefore recommending that the Applicant make a full provision for telecommunication infrastructure within its submission to address both the directly impacted Telecommunication Channels, identified herein, as well future and improved Microwave and Radio links needing to reach and cover the high concentration of telecommunication mast and roof top sites in the city centre and the high footfall urban centre.

Ilac Centre



Figure 4.2

Dame Court Mast



Figure 4.3

MITIGATION MEASURES

To provide an adequate allowance for the retention of both the 3No. identified Microwave links and the 3No. identified Radio Frequency links, and address the requirements for future and improved Microwave and Radio Telecommunication Channels needing to connect with and cover the high concentration of telecommunication mast and roof top sites in the city centre and the high footfall urban centre, the Applicant is seeking planning permission to install the following:

- 9No. support poles, affixed to ballast mounts at roof levels on the East and West Elevations, each sufficient accommodate 1No. 2m 2G/3G/4G antenna and/or 1No. 5G antenna and/or 1No. Ø0.3m Microwave links each
- 3No. support poles, affixed to the lift shaft overrun on the northwest elevation, each sufficient accommodate 1No. 2m 2G/3G/4G antenna and/or 1No. 5G antenna and/or 1No. Ø0.3m Microwave links each
- Together with all associated telecommunications equipment and cabinets.
- To adequately screen the infrastructure, the support poles used for the antennae will be installed within Radio friendly GRP shrouds.

This will undoubtedly provide an adequate solution for the Applicant to mitigate the impact the Development will have on the Telecommunication Channels in the area and provide both the local area with improved voice and data services to meet modern demands.

Refer to Figures 8 & 9 of the appendices for full analysis and installation parameters for all the proposed replacement telecommunication infrastructure set out herein.

ISM can therefore conclude that the proposal being made by the Applicant within its submission to Dublin City Council allows for the retention of important Telecommunication Channels, such as Microwave links, to satisfy both the criteria of Section 3.2 of the Building Height Guidelines (2018) and Objective 5, within Table 4 of Appendix 3 of the Dublin City Council Development Plan 2022-2028.



PLANNING NOTE

Design Compliance with the Planning Guidelines for 'Telecommunications Antennae and Support Structures' (1996), and Circular Letter PL 08/12 issued by the Department of the Environment and Local Government (as may be amended from time to time), and to other publications and material as may be relevant in the circumstances."

The proposed telecommunications comply with the Guidelines and Circular on the basis that:

- ✓ They have been sited at rooftop level and painted to match external façade features to minimise their appearance and visual impact from street and other elevated levels and designed to minimise their scale;
- ✓ The antennae are encased in GRP shrouds (painted to match) to reduce the prospect of visual impact;
- ✓ Access to them can be provided via the residential block for management and maintenance;
- ✓ The sharing of existing facilities was considered but not deemed appropriate as their inclusion as part of the Development is to mitigate its distance from existing facilities and to mitigate the deteriorating impact on the existing telecommunication infrastructure located to the north, south and west of the proposed residential blocks;
- ✓ Their size, height and location do not impose a health and safety risk, with the support structures considered to be sufficiently robust; and
- ✓ The design fully considers and caters for the sharing and co-location of these facilities with Ireland's 3no. Mobile Network Operators.

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 within our reports.

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 recorded 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)

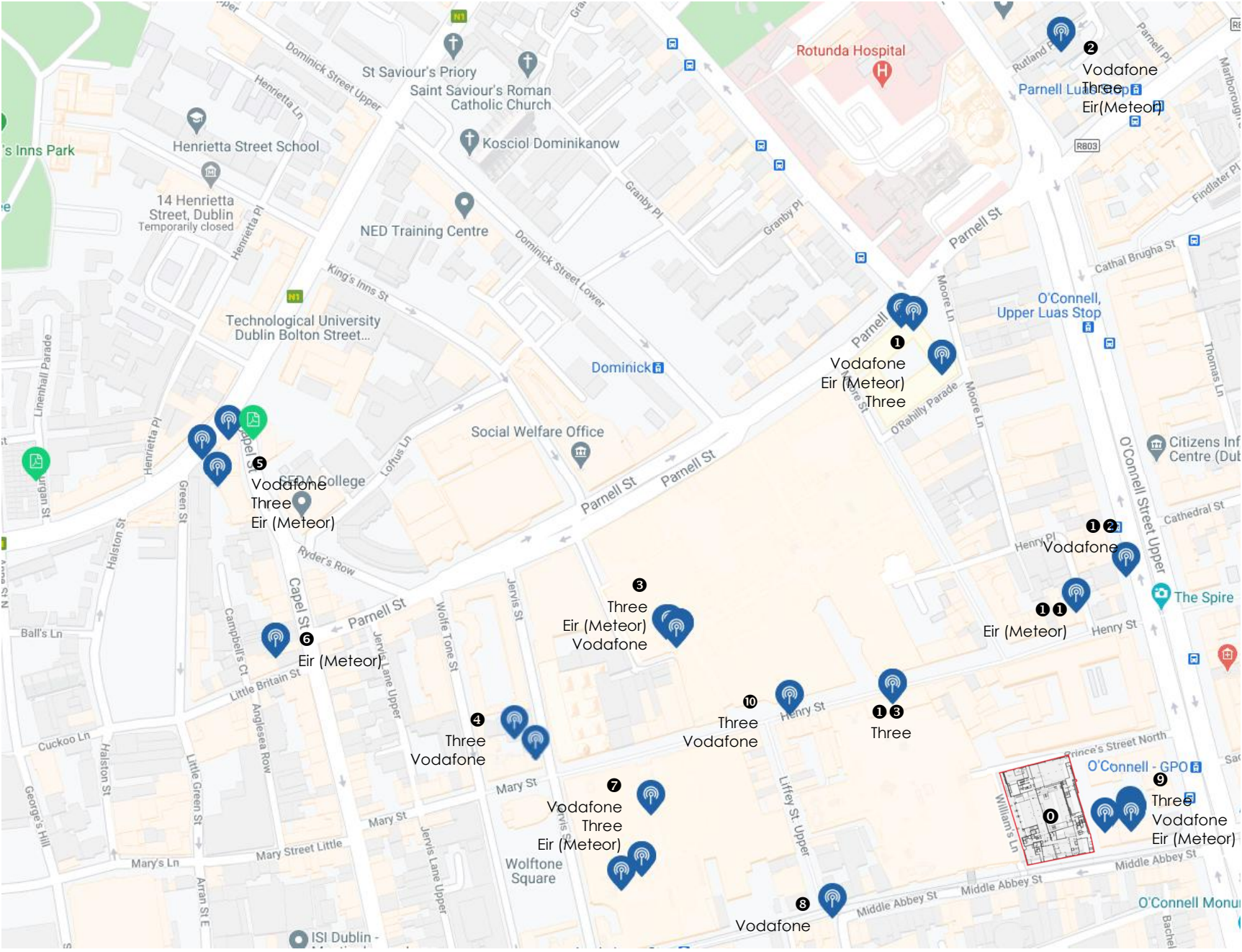
Figure 8: Mitigation Measures (Roof Plan)

Figure 9: Mitigation Measures (Elevations)

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
- 1 Jury's Hotel
- 2 Cassidy's Hotel
- 3 Ilac Centre
- 4 Toymaster
- 5 Green Street
- 6 Little Britain Street
- 7 Jervis Centre
- 8 The Bagel Bar
- 9 Easons
- 10 Arnott's (Boosters)
- 11 Eir Shop
- 12 Vodafone Shop
- 13 Arnott's Clock Tower

FINAL

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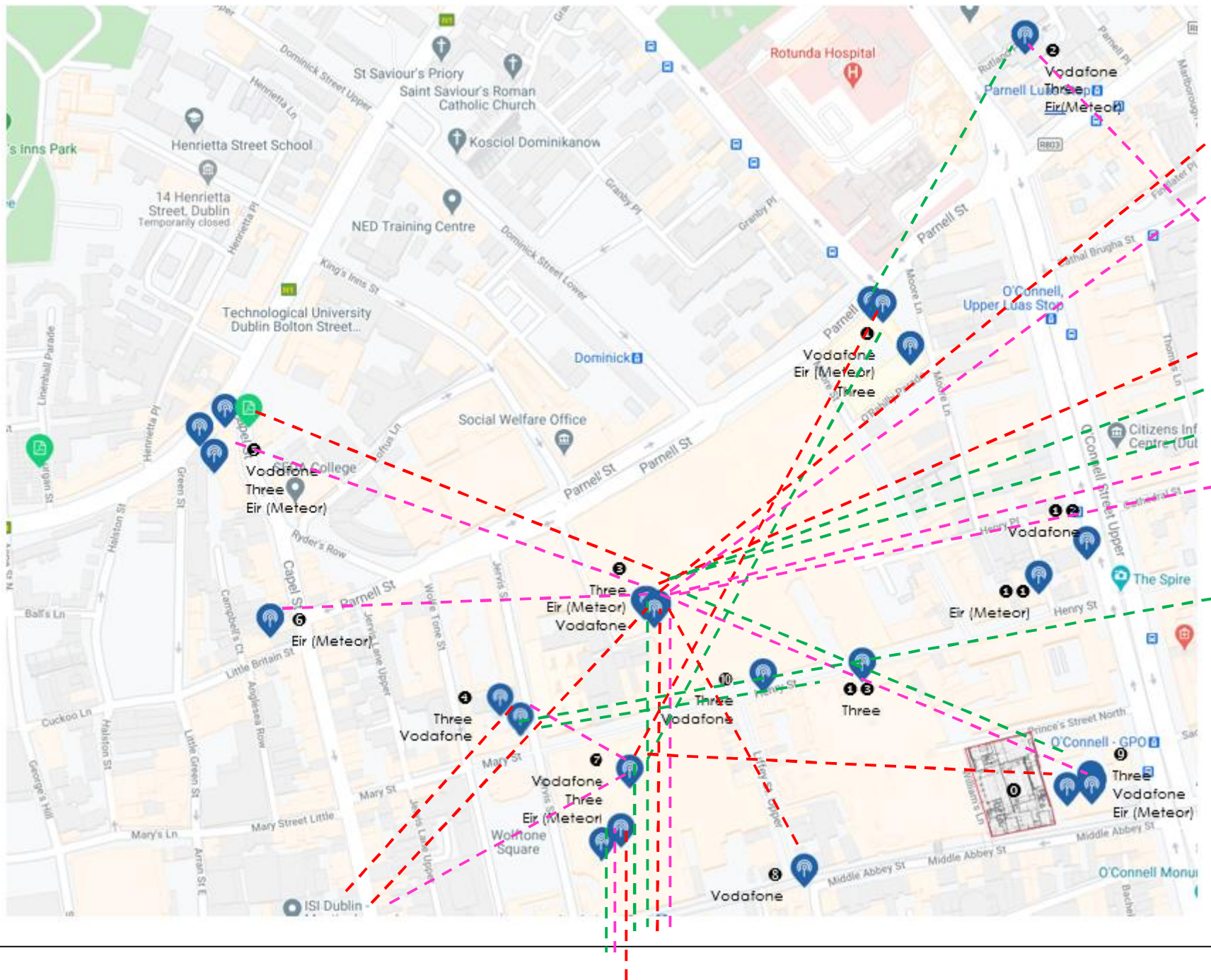
Client
Summix IHD Developments
Limited

Project
Independent House

Option	1
Date	12/03/2025
File Name	Independent House

Drawing:
Area Site Analysis

Building	Drawing No.	Zone	Rev
SPN	J 1824		1



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

Vodafone/Eir Mobile/ Three
Roof Top Site - Easons

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 **ISM** INDEPENDENT
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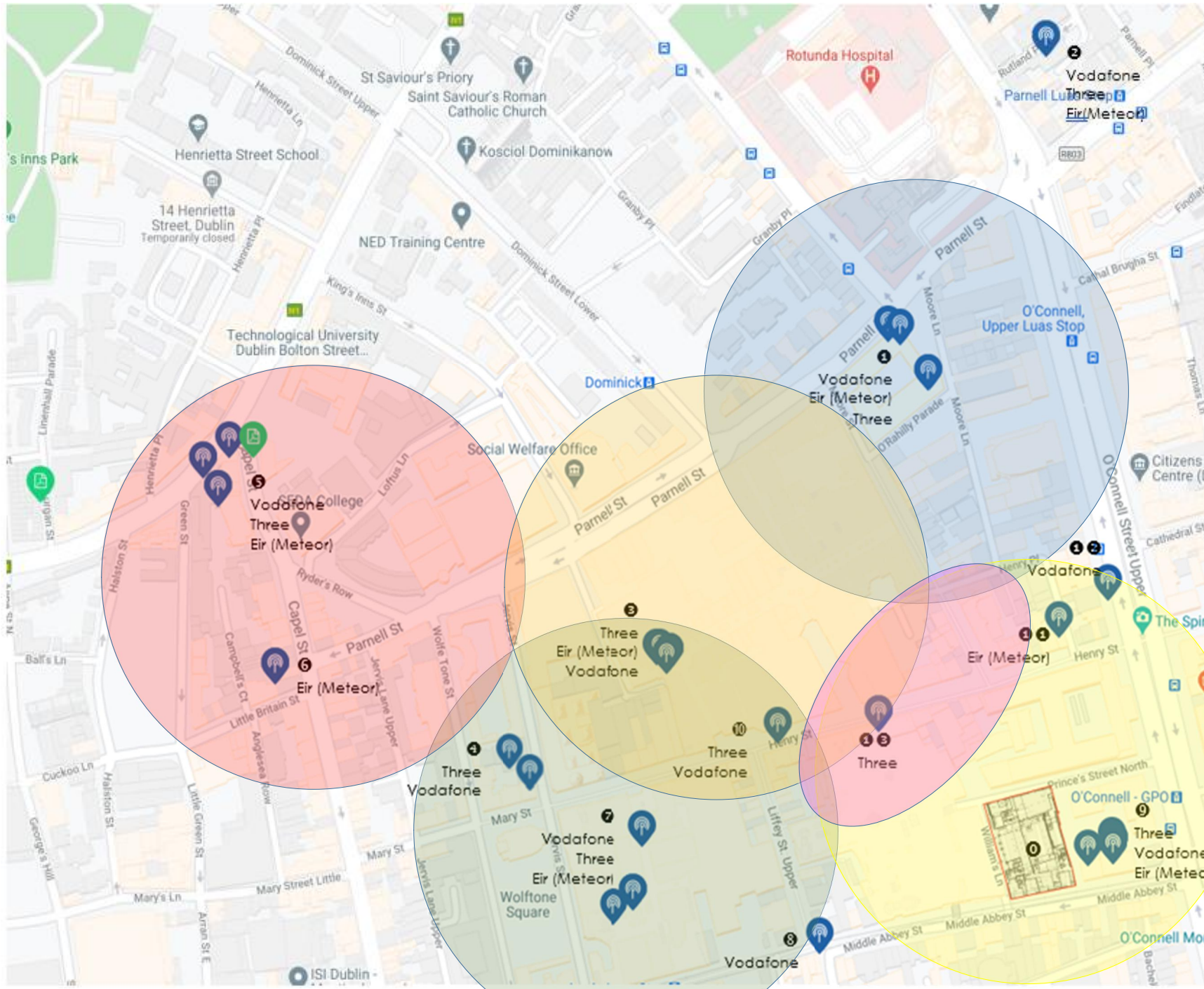
Option	1
Date	12/03/2025
File Name	Independent House

Drawing: Link Analysis			
Building	Drawing No.	Zone	Rev
SPN	J 1824		1

Figure 7

Drive Test Data

Source: 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 Jury's Hotel
- Multiple Cell IDs
 - ③ Ilac Centre
 - ⑩ Arnott's (Boosters)
- Multiple Cell IDs
 - ① ③ Arnott's Clock Tower
- Multiple Cell IDs
 - ③ Ilac Centre
 - ④ Toymaster
 - ⑦ Jervis Centre
 - ⑧ The Bagel Bar
 - ⑩ Arnott's (Boosters)
- Multiple Cell IDs
 - ⑤ Green Street
 - ⑥ Little Britann Street
- Multiple Cell IDs
 - ⑨ Easons
- ① ③ Arnott's Clock Tower
- Impacted Area

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Drawing:

Cell Identification Analysis

Building	Drawing No.	Zone	Rev
SPN	J 1824		1

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Figure 8

Mitigation Measure Design

Source: Comreg ISM



9No. support poles affixed to ballast mounts and 3No. support poles affixed to the Lift Shaft overrun rising. These support poles are sufficient to each accommodate 1No. 2m 2G/3G/4G antenna & 1No. 5G antenna each & 1No. Ø0.3m Microwave links each.

Together with all associated telecommunications equipment and cabinets,

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

Typical Installation



- Location of Ballast Mounts for Antennae & Dishes
- Location of Steel support Poles for Antennae & Dishes

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Drawing:
 Mitigation Measure

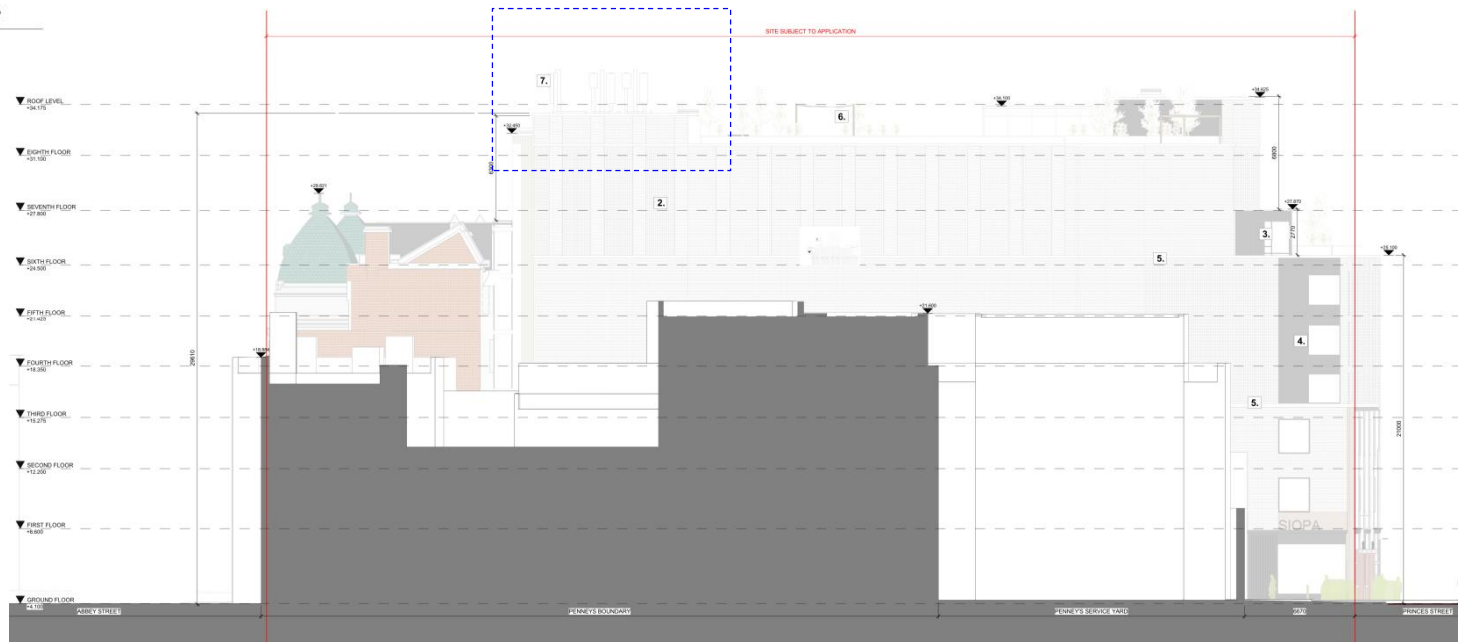
Building	Drawing No.	Zone	Rev
SPN	J 1824		1

Figure 9

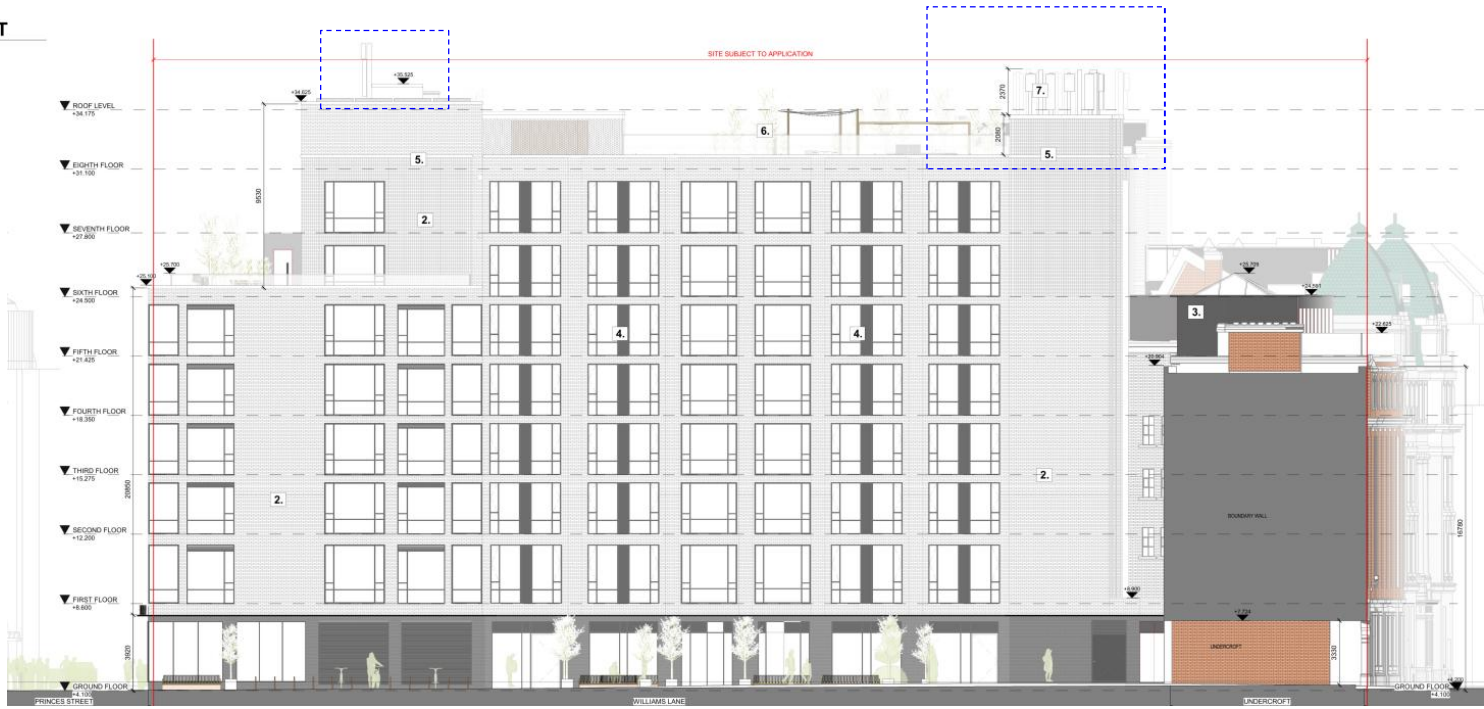
Mitigation Measure Design

Source: Comreg ISM

1 EAST



2 WEST



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

Antennae/Dish
Locations

FINAL

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Independent House

Option	1
Date	12/03/2025
File Name	Independent House

Drawing:
Mitigation Measure

Building	Drawing No.	Zone	Rev
SPN	J 1824		1

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