

Shaun Thorpe
Marlet Property Group

Heritage House,
23 St Stephen's Green,
Dublin, D02 AR55

By email

02 March 2021

RE: An Bord Pleanála – Submission Carmanhall Road SHD

Dear Sirs,

It has been requested that Independent Site Management ('ISM'), in its capacity as a specialist property telecom consultant, acting on behalf of Atlas GP Limited (hereinafter referred to as "ATLAS GP"), review and assess the proposal being made by ATLAS GP within its submission to An Bord Pleanála ('ABP'), in order that it allows for the retention of important telecommunication channels such as microwave links.

ISM has reviewed both the proposed development by ATLAS GP on Lands situated at the corner of Carmanhall Road and Blackthorn Road (hereinafter referred to as "Carmanhall Road"), and the immediate surrounding registered and documented telecommunication sites, and based on the aforementioned information, can conclude that the height and scale being sought by ATLAS GP in its application for the Carmanhall Road development, will impact on existing microwave links, but have a negligible impact on Radio coverage ("telecommunication channels").

In the context of the findings herein, the proposed development is being designed employing ISM's background and specialty in this area, with specific intent to be in a position to mitigate any such disruption to these telecommunication channels as well as with any unknown, or future telecommunication channels.

ABP should note that the proposed development is currently close to a significant number of large telecommunication sites with ample capacity and willingness to provide mitigating infrastructure in the unlikely event that the measures being made by the Carmanhall Road development are not acceptable to the business and technical needs of a disrupted third-party Telecom Company.

CARMANHALL ROAD SHD DESCRIPTION OF DEVELOPMENT

PROPOSED DEVELOPMENT:

(i) construction of a Build-To-Rent residential development within a new part six, part eight, part nine, part eleven storey rising to a landmark seventeen storey over basement level apartment building (40,814sq.m) comprising 428 no. apartments (41 no. studio, 285 no. one-bedroom, 94 no. two-bedroom & 8 no. three-bedroom units) of which 413 no. apartments have access to private amenity space, in the form of a balcony or lawn/terrace, and 15 no. apartments have access to a shared private roof terrace (142sq.m) at ninth floor level;

(ii) all apartments have access to 2,600sq.m of communal amenity space, spread over a courtyard at first floor level and roof terraces at sixth, eighth and ninth floor levels, a 142sq.m resident's childcare facility at ground floor level, 392sq.m of resident's amenities, including concierge/meeting rooms, office/co-working space at ground floor level and a meeting/games room at first floor level, and 696sq.m of resident's amenities/community infrastructure inclusive of cinema, gym, yoga studio, laundry and café/lounge at ground floor level. The café/lounge will primarily serve the residents of the development and will be open for community use on a weekly/sessional basis;

(iii) provision of 145 no. vehicular parking spaces (including 8 no. mobility parking spaces, 2 no. club-car spaces and 44 no. electric charging spaces), 5 no. motorcycle parking spaces, bin stores, plant rooms, switch room and 2 no. ESB sub-stations all at ground floor level; provision of bicycle parking (752 no. spaces), plant and storage at basement level; permission is also sought for the removal of the existing vehicular entrance and construction of a replacement vehicular entrance in the north-western corner of the site off Carmanhall Road;

(iv) provision of improvements to street frontages to adjoining public realm of Carmanhall Road & Blackthorn Road comprising an upgraded pedestrian footpath, new cycling infrastructure, an increased quantum of landscaping and street-planting, new street furniture inclusive of bins, benches and cycle parking facilities and the upgrading of the existing Carmanhall Road & Blackthorn Road junction through provision of a new uncontrolled pedestrian crossing; and,

(v) All ancillary works including provision of play equipment, boundary treatments, drainage works - including SuDS drainage, landscaping, lighting, rooftop telecommunications structure and all other associated site services, site infrastructure and site development works. The former Avid Technology International buildings were demolished on foot of Reg. Ref. D16A/0158 which also permitted a part-five rising to eight storey apartment building. The development approved under Reg. Ref. D16A/0158, and a subsequent part-seven rising to nine

storey student accommodation development permitted under Reg. Ref. PL06D.303467, will be superseded by the proposed development.

Site Layout Map



BACKGROUND

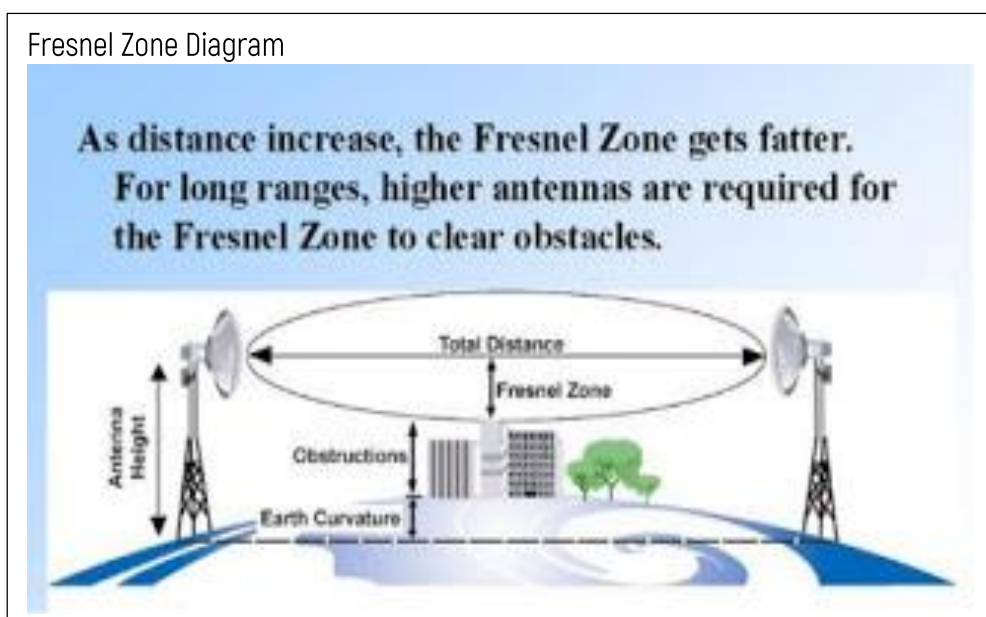
This report assessed the two most common telecommunication channels or networks of telecommunication channels that may be affected by new development. These are the transmission network, or microwave link/channel and the cellular network or radio channel/coverage, both of which combine and are commonly used in Ireland's mobile phone networks. Mobile phones send and *receive* signals via nearby antenna sites or cellular towers, technically known as base stations, using RF waves. Transmission networks use microwave dishes/channels to "transmit" from these base stations to other base stations. Radio or cellular coverage is a lower frequency low power channel, whereas microwave transmission is a higher frequency higher power channel.

RF signal/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 coverage over a wide geographic area. 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 coverage of a geographical area which is being served by multiple base stations, not necessarily the closest. Conversely, microwave transmission are point-to-point links, which are easily determined to be affected, or not, by the height and scale of a new development.

Essentially, if there is an obstacle in the Fresnel zone, part of the radio signal, it will be diffracted or bent away from the straight-line path. The practical effect is that on a point-to-point radio link, such as the microwave links 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 link dishes are high frequency radio links used for point-to-point transmission.



FINDINGS

ISM has identified **3** No. telecommunication channels that will be affected by the height and scale of the Carmanhall Road development. **1** No. telecommunication channel is a microwave link dish installed by Vodafone, **1** No. telecommunication channel is a microwave link dish installed by Three Mobile, & **1** No. telecommunication channel is a microwave link dish which is a legacy link

installed by O₂ on the former Microsoft now Facebook office building, all identified within the appendices accompany this report. The legacy link installed by O₂, on the former Microsoft now Facebook office building, is scheduled for decommission in the forthcoming months and therefore should not require mitigation.

These microwave links are installed on three telecommunication sites located across Carmanhall Road to the north and northeast of the proposed development. These sites are providing cellular coverage for the immediate local area businesses on Carmanhall Road, Blackthorn Road, Three Rock Road, Arkle Road Ballymoss Road and Corrig Road. They are also providing coverage for Blackthorn Avenue and the Luas line traffic.

These microwave dishes are situated at above ground level heights not greater than 30m (AGL) and therefore will be affected by the height and scale of the Carmanhall Road development.

The 2 No. microwave links identified by ISM will experience significant impact or diffraction on their Fresnel Zones rendering them ineffective, as a consequence of Carmanhall Road development.

The impact of the development on the aforementioned microwave link dishes will likely cause the 2 mobile service providers (O₂ is now owned by Three Mobile) to re-align the identified microwave links to alternative hop sites. In the unlikely event that the Carmanhall Road development continues to impact on existing or new microwave channels, or in the unlikely event that Vodafone and Three Mobile cannot find suitable alternative hop sites, Atlas GP are committed to assisting in mitigating the issues as demonstrated in the appendices accompanying this document.

The Radio coverage for the local geographic area is served by several cells at notable and close distances away from the development on a 360° basis, and therefore the Carmanhall Road development will only negligibly affect the radio coverage of the surrounding area.

In any event, the standard protocol associated with mitigating issues that arise from new developments of similar heights and scale to the Carmanhall Road development, would be for third party telecom companies to re-align their microwave link dish(s) to an alternative location(s) on their own accord. If no such location or locations exist within their current portfolio of telecommunication sites, the third-party telecom company will approach the interfering development or a suitable alternative location, to utilise its roof to either (1) set up a "hop" site, as demonstrated in figure 3 & 5 of the appendices; or (2) replace the affected telecommunication base station sites, rehomeing it entirely, so as to better receive and transmit radio signals.

In the unlikely event that the Carmanhall Road development impacts on any unidentified or new microwave channels, and in the unlikely event that the third-party telecom companies cannot find suitable alternative hop sites, ATLAS GP is committed to assisting in mitigating issues where possible.

This report has been drafted with regard to the development criteria of Section 3.2 of the Building Height Guidelines (2018) and ISM can confirm that this report satisfies these requirements.

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

INDEPENDENT SITE MANAGEMENT

ISM is a specialised property consultant and asset manager 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 the past 20 years.

ISM has set out a brief explanation of our analysis in the Appendix attached hereto.

Encl. Appendices Figure 1 Figure 2 Figure 3 Figure 4

Yours Faithfully,



Christopher Plockelman
Independent Site Management Limited

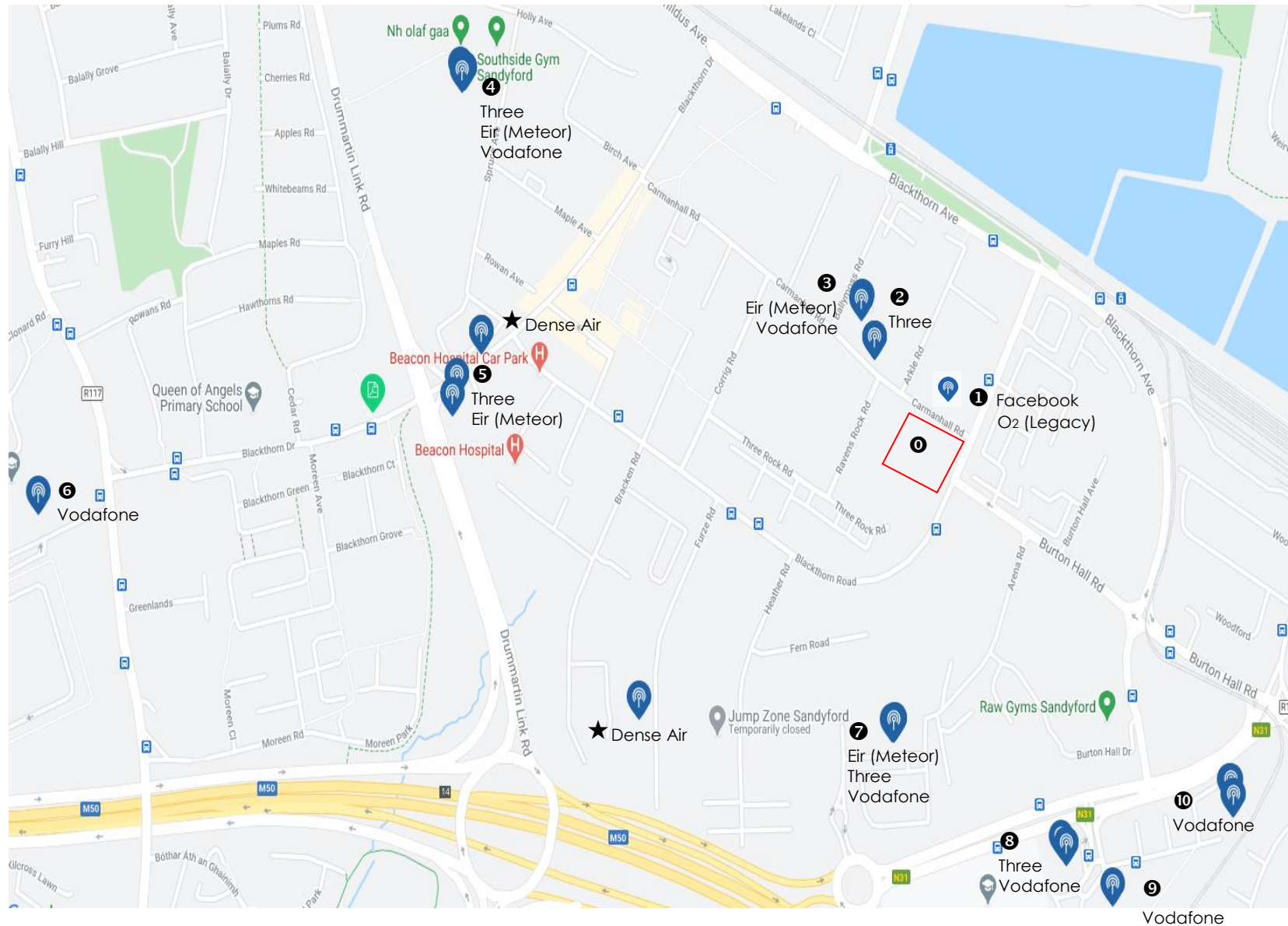
✉: christopher@ismireland.com

☎: +353 1 905 8800

Figure 1

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 Facebook Offices
- 2 The Chase
- 3 The Courtyard
- 4 St Olaf Bird Cage
- 5 Beacon Hospital
- 6 IMI
- 7 Leopardstown ESB
- 8 Leopardstown Clayton
- 9 AIB (DAS System)
- 10 Vodafone HQ
- ★ Dense Air site(s) (fibre fed)

FINAL

ism INDEPENDENT
 SITE MANAGEMENT

83 Harcourt Street
 Dublin 2, Ireland D02 C977
 +353 1 905 8800
 info@ismireland.com

Client
 Atlas GP
 Project
 Carmanhall Road SHD

Option	1
Date	02/03/2021
File Name	Carmanhall Road SHD

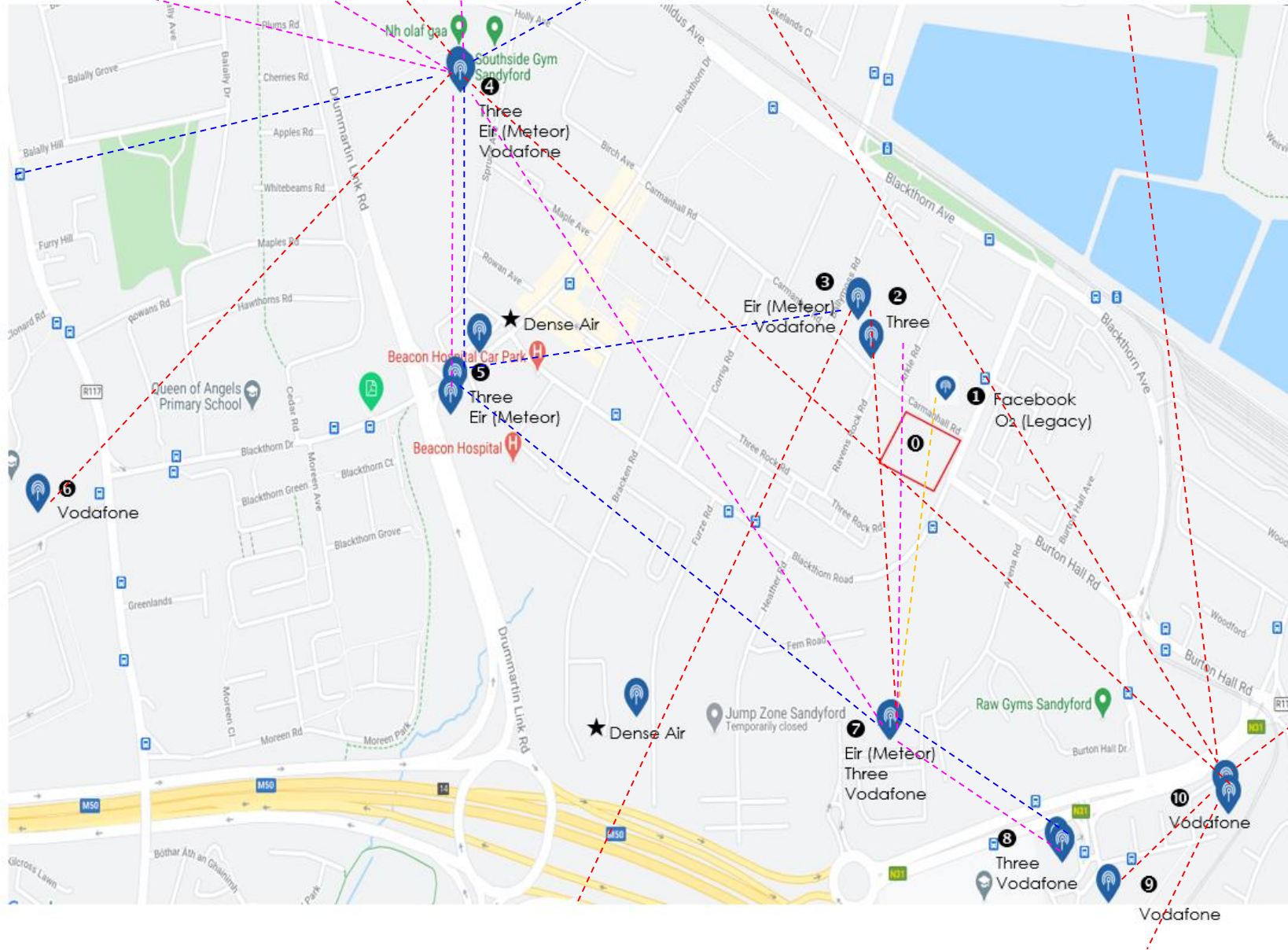
Drawing:
 Area Site Analysis

Building	Drawing No.	Zone	Rev
SPN	B 2321		1

Figure 2

Transmission Link Analysis

Source: Comreg; ISM; Vodafone; Three; & Eir



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

- Proposed Development
- Three Transmission Link
- Vodafone Transmission Link
- Eir Transmission Link
- O2 Transmission Link *

* This site is scheduled to be decommissioned in the next 3 months and is currently off-air

FINAL

ism INDEPENDENT SITE MANAGEMENT

83 Harcourt Street
 Dublin 2, Ireland D02 C977
 +353 1 905 8800
 info@ismireland.com

Client
 Atlas GP
 Project
 Carmanhall Road SHD

Option	1
Date	02/03/2021
File Name	Carmanhall Road SHD

Drawing:			
Link Analysis			
Building	Drawing No.	Zone	Rev
SPN	B 2321		1

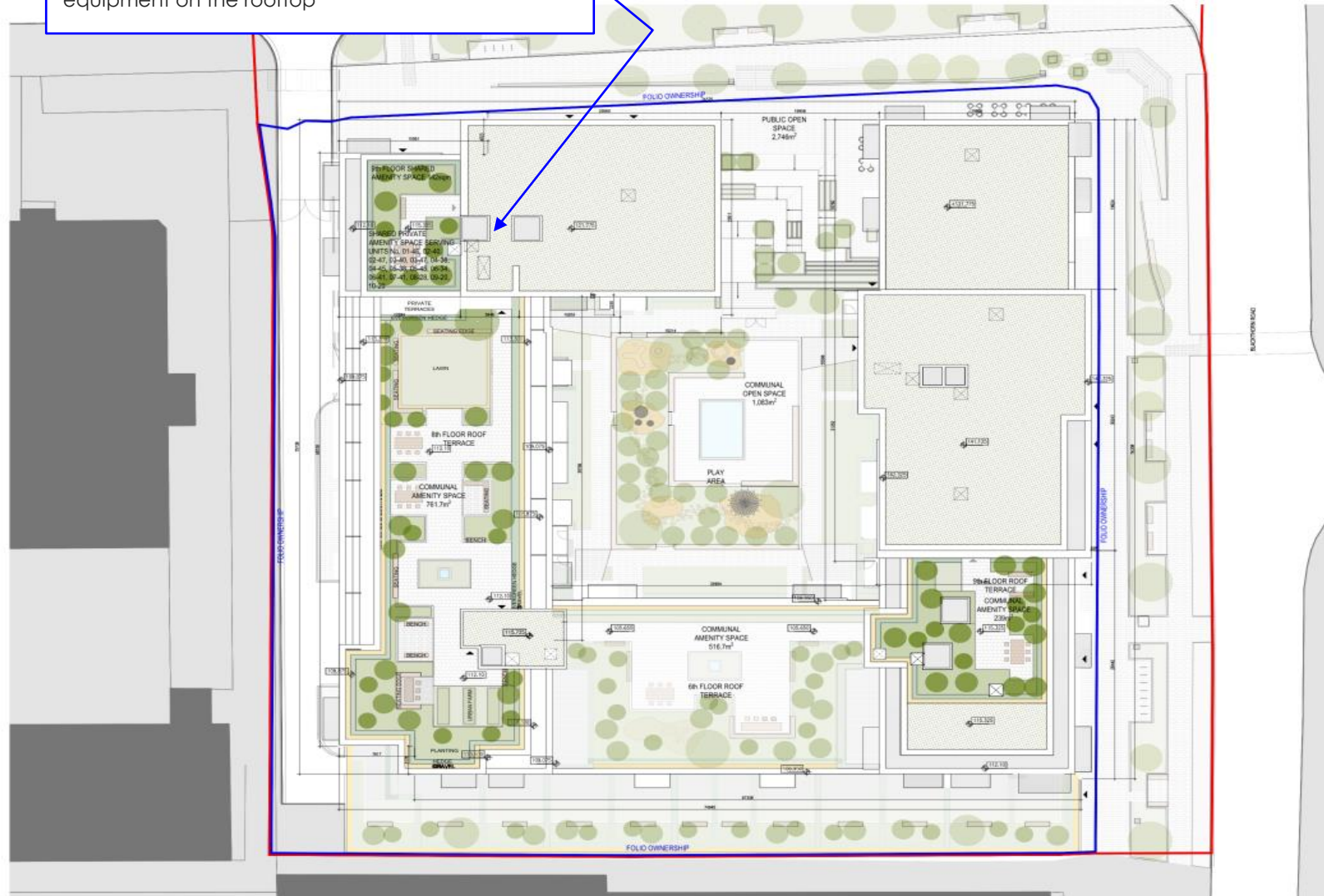
Figure 3

Mitigation Measures

The building(s) will be designed so that a 3M long pole fixed to the lift shaft at core 4, will be able to accept mitigating 6 No. 300mm replacement microwave dishes together with associated equipment at its base.

[Drawing for illustration purposes only – Not to Scale]

6 No. 300mm microwave link dishes in total, on a 3m steel pole support structure together with associated equipment on the rooftop



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



FINAL



83 Harcourt Street
Dublin 2, Ireland D02 C977
+353 1 905 8800
info@ismireland.com

Client
Atlas GP
Project
Carmanhall Road SHD

Option	1
Date	02/03/2021
File Name	Carmanhall Road SHD

Drawing:
Mitigation Measures (1)

Building	Drawing No.	Zone	Rev
SPN	B 2321		1

Figure 4

Mitigation Measures

EXAMPLE

The building(s) will be designed so that in the event that a microwave transmission link is required or obstructed by the elevation then the roof can support what is commonly referred to as a hop site. See below **example**.

[Drawing for illustration purposes only – Not to Scale]



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



----- IF REQUIRED

FINAL



83 Harcourt Street
 Dublin 2, Ireland D02 C977
 ☎ +353 1 905 8800
 ✉ info@ismireland.com

Client
 Atlas GP

Project
 Carmanhall Road SHD

Option	1
Date	02/03/2021
File Name	Carmanhall Road SHD

Drawing:
 Mitigation Measures (2)

Building	Drawing No.	Zone	Rev
SPN	B 2321		1