SUPPLEMENTARY INFORMATION

1. Site Details

Site Name:	Manor Road	Site Address:	Footway of Manor Road, Levenshulme, Manchester, Greater Manchester M19 3HL
National Grid Reference:	E: 388092 N: 394592		
Site Ref Number:	CS_30619300	Site Type:[1]	Macro

2. Pre Application Check List

Site Selection (for New Sites only)

(Would not generally apply to upgrades/alterations to existing site including redevelopment or replacement of an existing site to facilitate an upgrade or sharing with another operator)

Was a local planning authority mast register available to check for suitable sites by the operator or the local planning authority?		No
If no explain why: No publicly accessible up to date mast register.		
Were industry site databases checked for suitable sites by the operator:	Yes	
If no explain why:		

Site Specific Pre-application consultation with local planning authority

Was there pre-application contact:	No
Date of pre-application contact:	N/A
Name of contact:	N/A
Summary of outcome/Main issues raised: A pre-application consultation letter, a consultation plan and a set of proposed plans were sent to the Chief Planning Officer for the Local Planning Authority via email, dated 28/01/2025. No comments were received.	

Annual area wide information to planning authority

[1] Macro or Micro

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Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
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Has annual area wide information been provided?	No
If no explain why:	
Summary issues raised: Cornerstone commercial relationship with Virgin Media O2 (VMO2, known as O2), has changed, effectively increasing their independence to work with other companies in the deployment of mobile infrastructure. It means they no longer have visibility of VMO2 full update plan. However, Cornerstone is fully committed to working closely with Local Planning Authorities and following best practice guidance. Cornerstone aim to engage and work with the planning department at the earliest opportunity from when Cornerstone are instructed to deliver new infrastructure within your Local Authority area and often conduct strategic pre-rollout engagement meetings to discuss their wider rollout. If your Local Authority would like a meeting to discuss wider Cornerstone rollout plans, then please advise. We recognise the importance of developing connectivity.	

Community Consultation

Rating of Site under Traffic Light Model:	~~Red~~	Amber	~~Green~~
Outline of consultation carried out: Pre-application consultation letters and sets of proposed plans were sent to the local ward councillors for Lebenshulme (Councillors Dzidra Noor, Basat Sheikh and Zahid Hussain) via email, dated 28/01/2025. A pre-application consultation letter and a set of proposed plans were sent to the local MP for Gorton and Denton (Mr Andrew Gwyne) via email, dated 28/01/2025.			
Summary of outcome/main issues raised (include copies of relevant correspondence): No comments were received.			

School/College

Location of site in relation to school/college (include name of school/college): Small Wonders PDN Ltd, Connaughton House, 315 Mount Road, Greater Manchester M19 3BH.
Outline of consultation carried out with school/college (include evidence of consultation): A pre-application consultation letter and as of proposed plans were sent to the Manager of Small Wonders PDN via email, dated 28/01/2025.
Summary of outcome/main issues raised (include copies of main correspondence): No comments were received.

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Civil Aviation Authority/Secretary of State for Defence or the operator of the civil safeguarding area or defence safeguarding area notification (only required for an application for prior approval)

Will the proposed development be on a civil safeguarding area or a defence safeguarding area?		No
Has the Civil Aviation Authority/Secretary of State for Defence/operator of the civil safeguarding area or defence safeguarding area been notified?		No
Details of response: N/A		

Developer's Notice

Copy of Developer's Notice enclosed?	Yes	
Date served:	A developer's notice and a set of plans were sent to the Manchester City Council Estate Department via Special Delivery, dated 13/01/2025, and to the Manchester City Council Highway Department via email, dated 13/01/2025. Copies of the developer's notice and proof of delivery are attached as part of this application	

3. Proposed Development

The proposed site:

Background:

Cornerstone is the UK's leading mobile infrastructure services company. They acquire, manage and own over 20,000 sites and are committed to enabling best in class mobile connectivity for over half of all the country's mobile customers. They oversee works on behalf of telecommunications providers and wherever possible aim to:

- promote shared infrastructure
- maximise opportunities to consolidate the number of base stations
- significantly reduce the environmental impact of network development

As part of Cornerstone's network improvement programme, VMO2 is in the process of progressing a number of suitable sites for radio base stations, which will provide improved 2G and 4G coverage and new 5G service provision. This is fully in line with the Government's aim to ensure that everyone is connected to the superhighway.

Cornerstone and VMO2 are in the process of progressing a new suitable site in this area for a radio base station to improve existing levels of service provision. The site needs to provide new coverage and capacity to ensure that customers continue to experience access to the latest

service provision of 4G coverage and capacity. The proposed new mast installation will also meet the extra demands on the network in this area as new technologies improve.

Capacity refers to the maximum amount of data a network can handle and the number of devices it can support simultaneously. When too many devices try to connect to the network, it can become overloaded, leading to issues like slow internet speeds and dropped calls. This is similar to a highway getting congested when there are too many cars. Even if there is coverage in the area, the network will not operate properly if there are issues with capacity. This means that while your device may show a strong signal, the network can still struggle to deliver fast and reliable service if it is unable to manage the high demand. A new installation in this location will allow to provide improved coverage to this area, as well as to improve capacity on the operator's network.

As part of VMO2 continues network improvement program, there is a specific requirement for a new installation at this location to provide improved 2G and 4G coverage, and new 5G coverage ensuring that this area of Levenshulme has access to the latest technologies.

Proposed Development

The proposal comprises the installation of 20m high monopole supporting 6 no. antennas, 2 no. transmission dishes, 2 no. equipment cabinets and ancillary development thereto including Ericson Radio Systems (ERSs).

The proposed site is located on the footway of Manor Road, in the southeast part of Levenshulme, adjacent to Greenbank Playing Fields. The wider area is a mixed-use location with a combination of residential, commercial, and industrial properties.

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Map 1. Site Location Map

The proposed radio base station is located on the footway of Manor Road, west of its junction with Mount Road. To the north of the site, Manor Road extends with semi-mature and mature trees beyond, leading to Greenbank Park.

To the east, Manor Road continues towards its junction with Mount Road, with industrial properties beyond. On the northern side of Manor Road in this direction is Greenbank Park, while Greenbank Playing Fields are located on the southern side.

To the south of the proposed development, Greenbank Playing Fields extend, with semi-mature and mature trees in the wider area. To the west, Manor Road continues, with the nearest residential properties approximately 95m away. However, due to the separation distance, their orientation, and the presence of semi-mature and mature trees in the wider area, the visual impact on them will be minimised.

From various vantage points, the proposed radio base station will be viewed in alignment with and in the context of the surrounding trees, which will help to reduce its visual impact on the area.

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Photo 1: View towards the site from Manor Road

There are a number of other linear street furniture items in the surrounding vicinity such as lighting columns, fence netting, floodlights and another operator's radio base station, as well as semi-mature and mature trees in a wider area which will help to assimilate the proposed radio base station to the surrounding area.

3G (and eventually 2G) is being switched off by the operators in order to repurpose these radio frequencies for faster more energy-efficient 4G and 5G services. 3G is primarily used for mobile data services. It is being switched off first because it has already largely been superseded by 4G. Hence the importance of providing the latest 4G and new 5G service provision is areas where there is no such coverage. 3G has already been switched off by Vodafone and EE in early 2024, VMO2 is planning to do the same starting from April 2025 and continuing throughout the year. As a result, it is imperative that the operator builds resilience into the network.

The proposed radio base station is located on the footway of Manor Road near to a densely residential area to the west and northwest. Due to the significant number of daily commuters, as well as the residents and businesses in the area, there is a high demand for high-quality 2G, 4G and 5G coverage and capacity. The proposed site will provide new 2G, 4G and 5G coverage and capacity, to meet this demand.

Without the new installation in the area, there will be a hap in the existing coverage due to which the operator's network will struggle to meet the customer's demand in this cell area,

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as a result the operator's customers will not be able to use their handheld devices as intended. Lack of improved capacity in the area will result in buffering and dropped calls, leaving customers with unreliable service in this area.

Planning History

139123/TEL/2024 – installation of 20m telecommunications mast supporting 12 no. antennas, 2 no. transmission dishes, 30 no. remote radio units and 6 no equipment cabinets, 1 meter cabinet and GPS.

A previous application in this location was recently granted prior approval (LPA ref: 139123/TEL/2024), however the site provider is against the proposal and not willing to negotiate to accommodate a mast in this location. Due to the lengthy process of a code deal and legal complexities, there is uncertainty on how long this could take to resolve. and push by the Government to achieve standalone 5G coverage to all populated areas by 2030, the operator has decided not to progress with a site in this location to speed up their roll out of 5G connectivity and meet the Government deadline.

As the result, the current proposal under this application is being submitted.

Enclose map showing the cell centre and adjoining cells if appropriate:

The installation of this ground-based installation will enable enhanced 2G, 4G and 5G coverage and capacity to the surrounding area for one of the Cornerstone operators to ensure high quality customer experience is obtained as demands on the network increase and technologies change.

The proposed location and height will allow for the optimum level of coverage and capacity to be provided to the target coverage area. The levels of high-quality, reliable 4G and 5G coverage that will be provided to this area is significant. As more people require mobile access for phone calls and mobile internet at once. Increasing the capacity of the network will ensure more people are able to use their phones at the same time whilst reducing the risk of calls dropping, internet buffering etc.

Capacity refers to the maximum amount of data a network can handle and the number of devices it can support simultaneously. When too many devices try to connect to the network, it can become overloaded, leading to issues like slow internet speeds and dropped calls. This is similar to a highway getting congested when there are too many cars.

Type of Structure *(e.g. tower, mast, etc):* V2 Orion Pole

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Description:		
The proposal comprises the installation of 20m high monopole supporting 6 no. antennas, 2 no. transmission dishes, 2 no. equipment cabinets and ancillary development thereto including Ericson Radio Systems (ERSs).		
Overall Height:		20m
Height of existing building *(where applicable):*		Metres
Equipment Housing: York Cabinet		
Length:		0.6 m
Width:		1.9 m
Height:		1.75 m
Equipment Housing: Shire Cabinet		
Length:		0.6 m
Width:		1.05 m
Height:		1.75 m
Materials *(as applicable):*		
Tower/mast etc – type of material and external colour:	Steel – Goose Grey – BS00A05	
Equipment housing – type of material and external colour:	Steel – Fir Green – RAL6009	

Reasons for choice of design, making reference to pre-application responses:
In terms of setting, given that the subject site is located on the public highway, a street furniture style development has been deemed to be most suitable type of base station as this is the most accepted design for urban, suburban and rural roadside locations throughout the UK. The operator has carefully considered the design of the new proposed column. The operator is proposing the most sensitive design currently available to provide the necessary coverage and capacity to the surrounding area. Due to all the technologies that will be available at this location, 2G, 4G and 5G, 6 antennas need to be installed at the top of the slim-line monopole. These are split into a dual stack formation where 3 antennas will be located at the top and the other 3 will be located underneath. Thus, if the column were to be any lower, the antennas would not be able to clear the buildings and urban clutter and as such would not be able to operate effectively. As radio base stations must provide coverage on the operator's network, their siting options are limited by technical constraints. Therefore, even if there are sites within the search area that could potentially have a smaller visual impact on public amenity, they might not be suitable from an operational perspective. This was recognised by the Inspector in a recent appeal (Ref: APP/C5690/W/23/3334595). In paragraph 13, the Inspector stated: "…*Whilst there may be sites which are better sited in respect of character and appearance as well as amenity considerations, there is little point in assessing those sites if they do not meet operational requirements to support high quality communications…*".

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The proposed height at 20m is essential in order to provide coverage to the target coverage area. 5G new radio technologies operate in higher frequency bands than older technologies. Since it operates at higher frequencies where attenuation of the radio signal is naturally higher, and the effects of clutter are greater it will normally require a higher structure to achieve the same coverage footprint. To increase capacity and data speeds to the user, the antenna will normally need to be mounted higher than conventional antennae. These factors drive a requirement for an increase in antenna height in 5G.

The new antennas are all unshrouded for technical reasons. However, they have been designed to be as tight as possible and virtually the same width as the main column, to minimise their visual appearance. The higher the radio frequency the more signal attenuation there is. The higher frequency 5G antennas are unable to operate effectively through the Glass Reinforced Plastic that the shroud is made up of and as such if these antennas were to be shielded then they would not be able to provide the necessary coverage to the target coverage area. An additional installation would be needed elsewhere within the cell area, leading to the proliferation of masts.

This is the slimmest design possible which will enable all the multi technologies to be supported from this site. If the column and antennas width were to be any slimmer than the technology would not fit in the one column and another radio base station would be required, which would lead to the proliferation of masts contrary to national Government guidance set out in the NPPF and The Code of Practice. Similarly, if the column were to be a uniform width throughout then the overall width would have to increase which would appear more visually prominent in the street scene, than the proposed design.

The proposed design is more visually sensitive and much easier to assimilate into a street scene than lattice towers or more traditional monopoles with bulky headframes. These non-stealth designs are preferred by operators as they are structurally capable of hosting more equipment and give greater scope for antenna orientation and are thus more efficient structures. However, such designs would appear alien in this location. Therefore, the operator has compromised on obtaining maximum coverage in order to better assimilate into the street scene.

The design of the column resembles as closely as possible the lighting columns and another operator's radio base station, as well as semi-mature and mature trees. These vertical structures will continue to help the proposed installation to assimilate with the surrounding area. It is accepted that the height of the proposed installation is taller than other pieces of surrounding street furniture, and some buildings, but this in itself is not a valid reason to conclude that it is not appropriate at a specific location. Telecommunications apparatus by its very nature must be taller than surrounding built and natural form to ensure its efficient operation. It was noted by the inspectorates in appeal decisions that "*…telecommunication structures are common features in built up areas, and the proposal, whilst being visible, would not necessarily be highly noticeable as it would blend in with similar structures such as street lighting and the existing monopole mast…*"

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The design of the column maintains its simple, functional, vertical structure which will not appear incongruous within the street scene. The presence of other linear urban structures such as lighting columns, fence netting, floodlights and another operator's radio base station, will assist with assimilation in the street scene. The column is proposed to be coloured goose grey to match the surrounding elements of street furniture, as well as to blend with the often-grey British sky. Although the column can be coloured any other colour the LPA consider appropriate.

The equipment cabinets designed to appear like the existing cabinets already in situ. They are small for telecommunications apparatus and proposed to be coloured green to match the other cabinets already in situ. The equipment cabinets can be installed under the operators permitted development rights once the monopole is built but have been included on the plans and in the description in order to remain fully transparent.

The ERS are small each one about the size of a shoe box. They are designed to make the antennas more efficient and reduce the amount of ground-based equipment cabinets thus minimising the visual impact on the surrounding area. Given their height some 16m above ground level underneath the antennas they will not be overly prominent in the street scene.

The transmission dishes are essential to link the installation back to the MNO's wider network and relay the data. The dish antennas used by mobile phone networks are relatively small. They are used to link individual radio base stations to each other, through a series of links, into the wider mobile phone and fixed line networks. In order to communicate with each other, dish antennas must have a clear line of sight, sometimes known as point-to-point communications. They must be in clear view of each other without any physical obstructions such as trees or buildings which would reduce or disrupt the low-powered signal. For this reason, dish antennas are always mounted high on rooftops or tall structures. In this instance, in order to obtain a clear line of sight their centre line height needs to be 15m above ground level.

It is therefore considered that the proposal before you strike a good balance between environmental impact and operational considerations. The proposed height and design represent the best compromise between the visual impact of the proposal on the surrounding area and meeting the operator's technical requirements for the site. Taking all matters into account it is considered that this proposal, to provide the latest enhanced 2G, 4G and 5G service provision providing high quality dense coverage and capacity, would not appear out of place within the street scene.

Health and Safety - including ICNIRP compliance

International Commission on Non-Ionizing Radiation Protection Declaration attached (see below).

International Commission on Non-Ionizing Radiation Protection public compliance is determined by mathematical calculation and implemented by careful location of antennas, access restrictions and/or barriers and signage as necessary. Members of the public cannot

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unknowingly enter areas close to the antennas where exposure may exceed the relevant guidelines.

When determining compliance, the emissions from all mobile phone network operators on or near to the site are taken into account.

In order to minimise interference within its own network and with other radio networks, VMO2 operates its network in such a way the radio frequency power outputs are kept to the lowest levels commensurate with effective service provision.

As part of VMO2's network, the radio base station that is the subject of this application will be configured to operate in this way.

All operators of radio transmitters are under a legal obligation to operate those transmitters in accordance with the conditions of their licence. Operation of the transmitter in accordance with the conditions of the licence fulfils the legal obligations in respect of interference to other radio systems, other electrical equipment, instrumentation, or air traffic systems. The conditions of the licence are mandated by Ofcom, an agency of national government, who are responsible for the regulation of the civilian radio spectrum. The remit of Ofcom also includes investigation and remedy of any reported significant interference.

The telecommunication infrastructure the subject of this application accords with all relevant legislations and as such will not cause significant and irremediable interference with other electrical equipment, air traffic services or instrumentation operated in the national interest.

4. Technical Justification

Reason(s) why site required e.g. coverage, upgrade, capacity

A mobile phone transmitter is designed to cover a specific area and links its coverage to the next site in the network, creating a patchwork of overlapping coverage 'cells' across the country. So, if a person is on the move, the network will transfer their calls from one site to the next. However, in certain areas there will be gaps between these cells, resulting in a loss of coverage. This can be for a variety of reasons, the most common being topography or buildings which block the path of the signal. The operators' network rollout programme is designed to identify and address these gaps within their coverage and ensure that people can use their phones whenever and wherever they are.

There is a specific requirement to install a radio base station at this location to enable and enhance 2G and 4G coverage and capacity to this area of Levenshulme and to provide new 5G service provision.

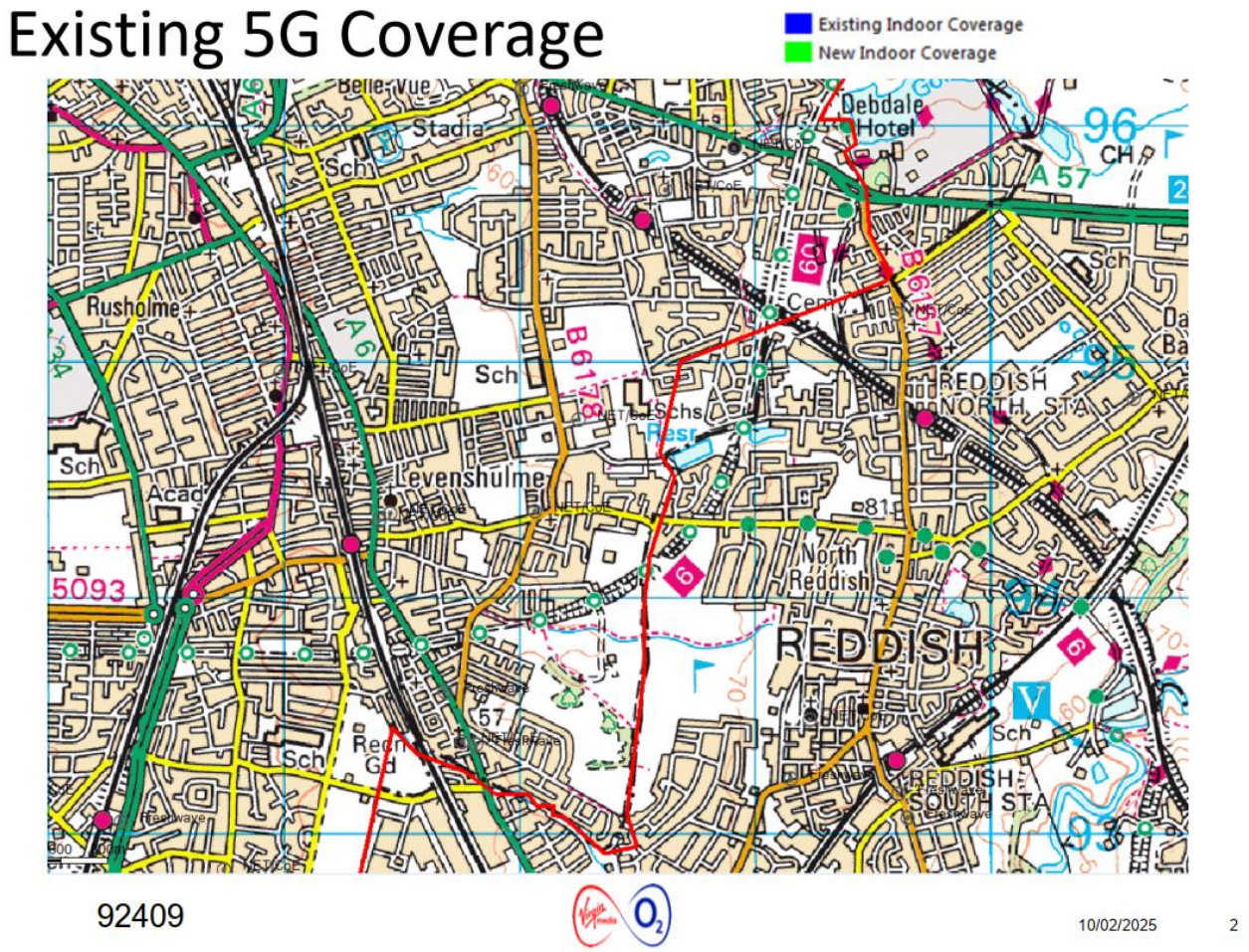
Currently, there is a large 'hole' in service provision, which means that the majority of the operator's customers cannot use their handheld devices for the purposes in which they were purchased. This installation will fill this partial gap for VMO2.

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The below coverage plots indicate a current lack of 5G service provision in the surrounding area, they also demonstrate a significant improvement (indicated by green colour) in 5G coverage provision in the surrounding area that the proposed radio base station will provide. The proposed installation will also improve 4G coverage and capacity in this part of Levenshulme.

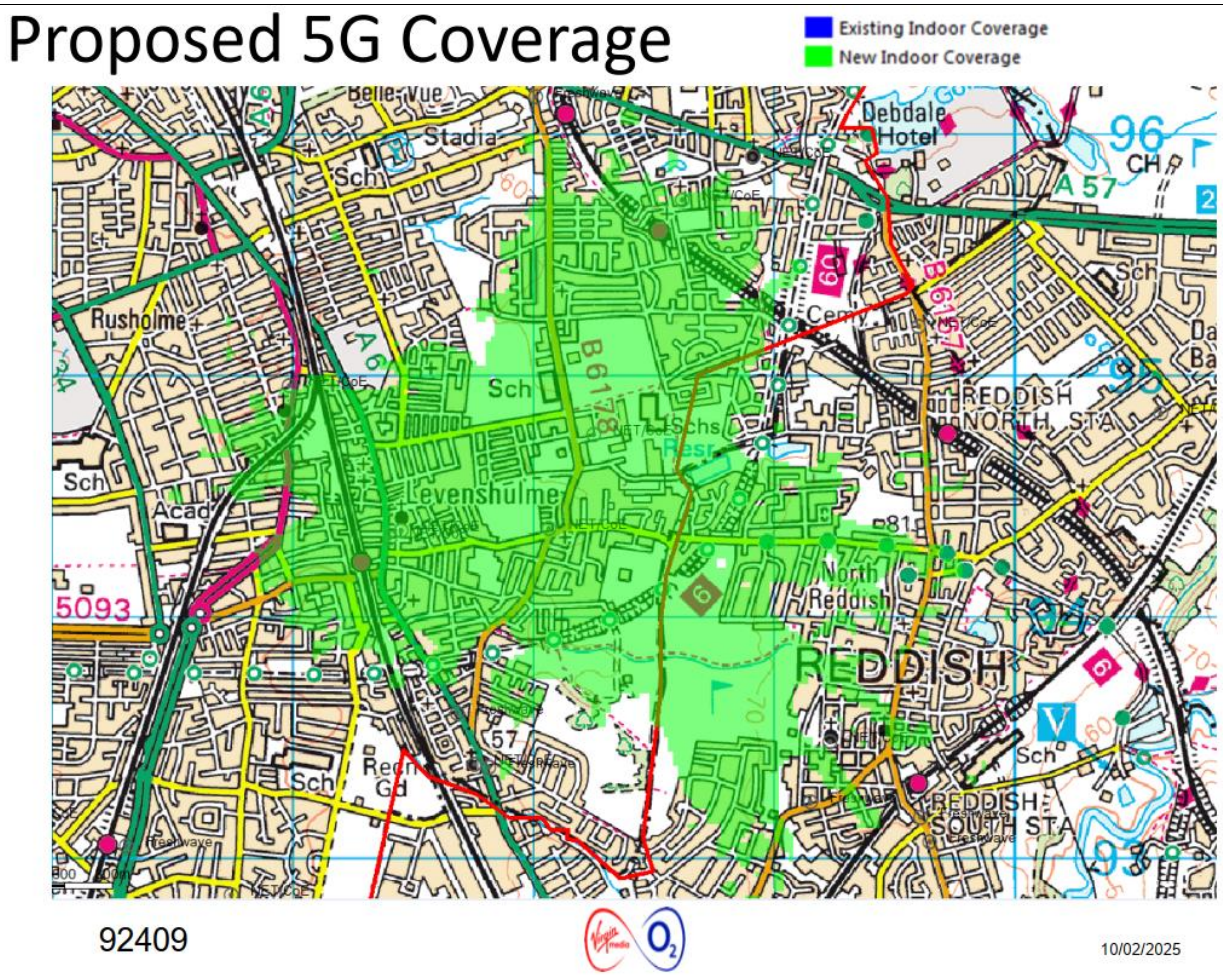
Existing 5G Coverage:



Proposed 5G Coverage:

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Base stations use radio signals to connect mobile devices and phones to the network, enabling people to send and receive calls, texts, emails, pictures and downloads. Without base stations, mobiles and devices will not work. Base stations are made up of three main elements. The cabin which contains the equipment used to generate the radio signal. A supporting structure such as a mast which holds the antennas in the air and the antennas themselves.

Base stations are connected to each other and telephone exchanges by cables or wireless technology, such as microwave dishes, to create a network. The area each base station covers is called a cell. Each cell overlaps with its neighbouring cells to create a continuous network. The size and shape of each cell is determined by the features of the surrounding area, such as buildings, trees and hills, which can block signals. When people travel between cells, the signal is transferred between base stations without a break in service. However, each base station can cover a certain area only and can only handle a limited number of calls at once. As mobile phones and devices become more popular more base stations are needed to ensure continuous coverage.

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Individual base stations can only handle a certain number of calls or data downloads. If the number of calls or data requests exceeds the base stations capability, then local network users will experience a reduction in data download speeds and reduced call quality. We call areas without good coverage 'blackspots' and all mobile phone networks suffer from them. You can experience them wherever you are, even in cities with lots of base stations.

To keep up with growing demand the operators need to upgrade existing base stations or build new base stations to improve the capacity. Capacity is the maximum data or calls that can be processed by a base station.

5. Site Selection Process

Alternative sites considered and not chosen (not generally required for **upgrades/alterations to existing sites** including redevelopment of an existing site to facilitate an upgrade or sharing with another operator).

In accordance with the licence obligations and advice in the National Planning Policy Framework and the Code of Practice in England the applicant's network rollout team investigated the following siting and design options using this sequential approach to site selection:

- Upgrading their own existing base stations.
- Using existing telecommunications structures belonging to another communications operator. i.e. Mast and/ or site sharing, co-location.
- Installations on existing high buildings or structures including National Grid pylons.
- Using small scale equipment; and finally.
- Erecting a new ground based mast site – (1st) Camouflaging or disguising equipment. (2nd) A conventional installation e.g. a lattice mast and compound.

The applicant's site selection strategy is to keep the overall environmental impact to a minimum. Utilising existing masts is always progressed where it is technically and legally possible and where it is the local planning authority's preferred environmental solution. New sites are only developed where there are no viable or accessible alternatives, or it is the local planning authority's preferred approach. The feasibility of the acquisition, build and maintenance of the site also needs to be taken into account.

Site Type	Site name and address	National Grid Reference	Reason for not choosing site
D1 - Greenfield	Land at I.J. Kayes Scrap Metal, Unit 1A, Sandfold Lane, Levenshulme, Greater Manchester, M19 3BH	E: 388302 N: 394657	A site in this location was recently granted prior approval (LPA ref: 139123/TEL/2024), however the site provider is against the proposal and not willing to negotiate to

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			accommodate a mast in this location. Due to the lengthy process of a code deal and legal complexities, there is uncertainty on how long this could take to resolve. and push by the Government to achieve standalone 5G coverage to all populated areas by 2030, the operator has decided not to progress with a site in this location to speed up their roll out of 5G connectivity and meet the Government deadline.
D2 - Greenfield	Matthews Lane, Levenshulme, Manchester, Greater Manchester, M19 3EQ	E: 387932 N: 394804	A mast at this location would not provide the required level of coverage to the target area due the substantial tree cover to the north, these would inhibit the signal for one of the three sectors and would not deliver the required coverage to the target area. A site in this location would also be much closer to residential properties and have a greater impact on visual amenity than the chosen site. This site has therefore been discounted for this reason.
D3 – Greenfield	Grange School, Matthews Lane, Levenshulme, Manchester, M12 4GR	E: 388054 N: 394863	A mast at this location would not provide the required level of coverage to the target area due the substantial tree cover to the south and west, these would inhibit the signal for one of the three sectors and would not deliver the required coverage to the target area. This site has therefore been discounted for this reason.
D4 - Streetworks	Footway of Mount Road, Levenshulme, Manchester, Greater Manchester, M19 3HB	E: 388168 N: 394822	A site in this location would be directly in front of residential frontages and have a greater impact on residential amenity compared to the chosen site which has been located away

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			from the residential nature of the area. Therefore, a site in this location has been discounted for this reason.
D5 – Streetworks	Footway of Mount Road, Levenshulme, Manchester, Greater Manchester, M19 3ET	E: 388173 N: 394742	A mast at this location would not provide the required level of coverage to the target area due the substantial tree cover to the west, these would inhibit the signal for one of the three sectors and would not deliver the required coverage to the target area. A site in this location would also be directly in front of residential frontages and have a greater impact on visual amenity than the chosen site. Furthermore, there are underground services here which would not allow for a site to be built here, compared to the chosen site which is clear of underground services. This site has therefore been discounted for this reason.
D6 - Greenfield	Car park of Small Wonders, Mount Road, Levenshulme, Manchester, M19 3BH	E: 388201 N: 394625	A mast similar to the one previously approved would be required here. This would require it to be contained within a compound, usually 10 x 10m for health and safety reasons. It would need to take up at least two car parking spaces. This loss of car parking is unacceptable as they are for the workers of the associated company with nowhere else to park. This would be unacceptable and there is no other space within the car park to accommodate the mast.
D7 – Rooftop	Chimney at Sandfold Lane, Levenshulme, Manchester, Greater Manchester, England, M19 3BH	E: 388245 N: 394568	The chimney in poor condition and would require structural reinforcement. Access route through industrial estate has awkward turns, uneven surface

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			and activities from the various units spill out onto the road. Manoeuvrability for a cherry picker/crane of the size required for the chimney proves difficult. Therefore a site here would not be able to be safely built. Therefore, a site in this location has been discounted for these reasons.
D8 – Greenfield	Sandfold Lane Recycling Centre, Sandfold Lane, Levenshulme, Manchester, M19 3BJ	E: 388376 N: 394629	A mast at this location is not viable due to a physical lack of space due to the site's use as a recycling depot. There would be health and safety issues during build and maintenance of the site due to the constant moving of vehicles. This site has therefore been discounted for this reason.
D9 - Streetworks	Printworks Lane, Levenshulme, Manchester, Greater Manchester, M19 3HS	E: 388308 N: 394564	The footway at this location is too narrow to accommodate the operator's equipment. As such, it would lead to highway safety issues. A site in this location has therefore been discounted for this reason.
D10 – Streetworks	Bratton Drive, Levenshulme, Manchester, Greater Manchester, M19 3GW	E: 388202 N: 394727	A mast at this location would not provide the required level of coverage to the target area due the substantial tree cover to the south and the tall buildings to the north, these would inhibit the signal for two of the three sectors and would not deliver the required coverage to the target area. This site has therefore been discounted for this reason.
D11 - Streetworks	Guildford Road, Levenshulme, Manchester, Greater Manchester, M19 3FS	E: 388107 N: 394746	The footway at this location is too narrow to accommodate the operator's equipment. As such, it would lead to highway safety issues. A site in this location has therefore been discounted for this reason.

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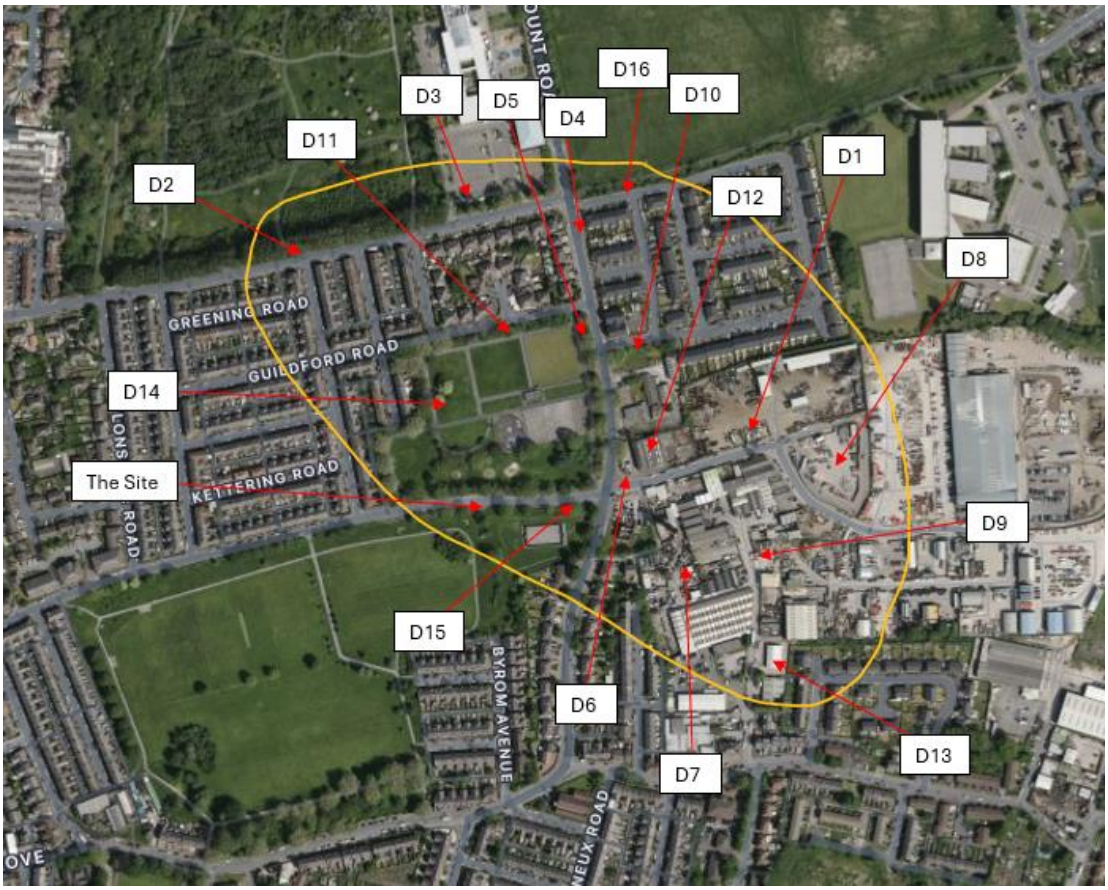
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D12 – Rooftop	Small Wonders, Mount Road, Levenshulme, Manchester, M19 3BH	E: 388224 N: 394635	The pitched roof design of the building would not be suitable to host telecommunications as it would not be structurally stable. The operators need a flat surface with appropriate strength and support on which to attach their equipment, otherwise the antennas and supporting equipment which is heavy even without the antennas attached to them. The rooftops are corrugated iron which is not suitable or structurally stable enough to hold the weight of the equipment. Therefore a site in this location has been discounted.
D13 – Rooftop	Warehoure rooftops in Printworks Lane, Levenshulme, Manchester, Greater Manchester, M19 3HS	Various	The pitched roof design of the building would not be suitable to host telecommunications as it would not be structurally stable. The operators need a flat surface with appropriate strength and support on which to attach their equipment, otherwise the antennas and supporting equipment which is heavy even without the antennas attached to them. The rooftops are corrugated iron which is not suitable or structurally stable enough to hold the weight of the equipment. They are also too low in order to accommodate a safe installation to provide the required height to reach the target coverage area. Therefore a site in this location has been discounted.
D14 - Greenfield	Greenbank Park, Levenshulme,	E: 388046 N: 394671	There is no way to access to build or maintain a site in this

	Manchester, Greater Manchester, M19 3GG		location, there are semi-mature / mature trees which surround the whole park blocking vehicular access. Therefore a site in this location has been discounted.
D15 – Existing Telecommunications mast	Footway of Manor Road, Levenshulme, Manchester, Greater Manchester, England, M19 3HN	E: 388146 N: 394593	The heavy weight of the equipment and feeder cables that run up the main column cant be supported on a slim line monopole, therefore requires a greenfield style mast. It would require a similar design to the previous approval (LPA ref: 139123/TEL/2024). There is not enough space on the footway for the operator to share a mast in this location. The designs are climbable, therefore require a 10m x 10m compound to secure them which would not be possible due to the space on the footway. This has been discounted for this reason.
D16 - Streetworks	Grassed verge of Bratton Drive, Levenshulme, Manchester, Greater Manchester, M19 3GW	E: 388241 N: 394868	There is insufficient space on the grassed verge to locate a mast and associated equipment cabinets. A site in this location would also be overlooked by residential properties, in comparison to the chosen site which is located away from the residential nature of the area.

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Map 1. Discounted Alternative Options and Search Area.

If no alternative site options have been investigated, please explain why: N/A
Land use planning designations: No land-use designation identified.
Additional relevant information (include planning policy and material considerations): **National Planning Guidance** Planning policy is provided at the national level by the National Planning Policy Framework (NPPF). It is a material consideration in planning decisions. It is not necessary to quote extensively from this document, but the following points are highlighted. **National Planning Policy Framework (December 2024)** The Government's National Planning Policy Framework (NPPF) was published on 24 July 2018 and updates the 2012 version. In February 2019 the NPPF was revised again, with minor

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alterations to wording relating to housing supply and not any parts relating to telecommunications. The NPPF was updated in July 2021, in order to strengthen sections including requirements on improved design quality, a new requirement for Councils to produce local design codes or guides, an emphasis on using trees in new developments, revised policies on plan-making, removing statues and opting out of PD rights relating to residential conversions. The NPPF has been recently revised again in September 2023 with an update on policy on planning for onshore wind development in England and does not affect any parts relating to telecommunications. The NPPF was revised again in December 2024; however, this did not affect any parts relating to telecommunications, with the only changes being to the paragraph numbering.

The Government's latest thinking continues to strongly support communications infrastructure. The NPPF remains very supportive of high-quality communications. Indeed, a whole chapter is dedicated to high quality communications, emphasising the importance that the Government attaches to digital connectivity. Paragraph 119 states that advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. This wording echoes guidance set out in paragraph 42 of the 2012 version of NPPF. However, it also includes the importance of *reliable* communications infrastructure for both economic growth *and social well-being*.

The NPPF continues to support the expansion of electronic communications networks at paragraph 119. It notes that policies should set out how high-quality digital infrastructure, providing access to services from a range of providers, is expected to be delivered and upgraded over time. The economic and social benefits of providing high quality and reliable communications infrastructure are well documented and can be found later in this Supporting Information Statement.

The NPPF makes reference to 5G:

'*Planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology (such as 5G)…*'

With the above in mind, the Government is already forward thinking the evolution of data networks and seeks planning decisions to take account of this. 5G technology provides increased speed of data and more capacity in the network, to ensure that handheld devices can continue to be used for the purposes in which they were purchased. This will bring even greater economic and social benefits to the area.

Paragraph 120 of the NPPF retains the requirement to minimise the number of installations consistent with the efficient operation of the network but also includes being consistent with the needs of consumers and providing reasonable capacity for future expansion.

Paragraph 123 of the NPPF retains the guidance set out in paragraph 46 of the 2012 NPPF version which relates to determining applications on planning grounds only. They should not seek to prevent competition between different operators, question the need for an electronic

communications system, or set health safeguards different from the International Commission guidelines for public exposure.

At the heart of the NPPF is the retained presumption in favour of sustainable development (para 11). For decision-taking this means approving development proposals that accord with an up-to-date development plan without delay or where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless the application of policies within the revised Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed or any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the revised Framework taken as a whole.

The NPPF continues to provide guidance on decision-making. At paragraph 39 it states that:

*'Local planning authorities should approach decisions on proposed development in a positive and creative way. They should use the full range of planning tools available, including…*permission in principle*, and work proactively with applicants to secure developments that will improve the economic, social and environmental conditions of the area. Decision-makers at every level should seek to approve applications for sustainable development where possible'.*

The NPPF builds on the aspiration to build a strong, competitive economy. Paragraph 85 states:

> *'Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking in to account both local business needs and wider opportunities for development. The approach taken, should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future. This is particularly important where Britain can be a global leader in driving innovation'…*

Footnote 43 of the NPPF states:

> *'…The UK's Modern Industrial Strategy identifies priority sectors for growth and support as: advanced manufacturing; clean energy industries; defence industries; digital and technology businesses; financial services; life sciences; and professional and business services.'*

Code of Practice for Mobile Network Development in England

Now, more than ever, reliable digital connectivity is essential for people and businesses. Government have committed to extending mobile geographical coverage across the UK. In order to realise these ambitions, it is essential that the planning system can effectively support the deployment of new mobile infrastructure, as well as network upgrades.

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The Department for Digital, Culture, Media and Sport, and the Department for Levelling Up, Housing and Communities have issued an updated Code of Practice which includes changes to further support the deployment of 5G coverage nationally. This Code provides guidance to mobile network operators, their agents and contractors and equally to all local planning authorities in England. It supersedes the Code of Practice on Mobile Phone Network Development (2016).

In line with the previous revision of the Code, digital connectivity is identified as being vital to enable people to stay connected and for businesses to grow. The principal aim of this Code is to continue to ensure Government's objective of supporting high quality communications infrastructure, which is key to continued economic prosperity and social inclusion for all.

Principles and Commitment

Paragraph 8 of the revised Code reiterates that fast, reliable digital connectivity can deliver economic, social and well-being benefits for the whole of the UK. The Code continues to acknowledge that as the demand for mobile data in the United Kingdom is increasing rapidly, it is important that everyone can have access to dependable and consistent mobile coverage where they live, work and travel.

The Government recognises the role of Planning in delivering the digital infrastructure that we need, in a sustainable and well-designed way, especially as households and businesses become increasingly reliant on mobile connectivity. Paragraph 13 of the Code continues to echo the NPPF guidance in strongly supporting high quality communications infrastructure, which is seen as essential for sustainable economic growth. More specifically that planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technologies (such as 5G) in order to support economic growth across the country.

Given the economic importance of mobile connectivity, the revised Code further emphasises the need for Local Planning Authorities to support the deployment of digital infrastructure. Paragraph 18 states that Local Planning Authorities should demonstrate their support by:

- **Incentivising connectivity**: support the expansion of telecommunications networks and take a 'joined-up' approach to the wireless infrastructure planning process, including ensuring that Local Plans effectively support the deployment of digital infrastructure.
- **Facilitating sites**: engage with operators when new sites have been proposed and discuss site requirements.
- **Engagement with operators**: respond positively to requests for engagement and make decisions in line with national policy and Local Plans. For planning applications, find solutions to issues and ensure timely decisions are made.
- **Information and communication**: ensure that members of the public can access information about any development proposals within their local area. Send

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communications promptly to an appropriate operator contact (or their representatives).

The added emphasis on support from Local Planning Authorities in the deployment in digital infrastructure is even more evident in the revised code. The Code recognises the importance of collaboration and partnership to help drive network coverage across the country. It goes on to state that 'In all instances, it is important for all parties involved in the process to take a positive approach to consultation and engagement'.

Siting and Design Principles

In line with this, is the recognition to continue to ensure that the impact of new network development is kept to a minimum. The Code states that good siting and design principles should continue to apply to all wireless network development and take into account any site-specific considerations and context, both of which can create better places in which to live and work and help make development acceptable to communities.

The Code provides guidance on siting and appearance principles. It sets out several design principles in respect of telecommunications development and acknowledges that the options for design used by an operator will be affected by site conditions including requirements to link the site to the network, landscape features and coverage and capacity requirements.

Paragraphs 25 - 27 sets out siting and site selection principles which Operators should consider including:

- Installation on existing buildings and structures.
- Erecting new ground-based masts.
- Camouflaging or disguising equipment where appropriate.
- Using small scale equipment (although small cells themselves are generally used to address capacity issues as opposed to providing coverage); and
- Mast and/or site sharing (including redevelopment of a site to enable upgrade or sharing with another operator).

Key Technical and Operational Considerations

Taking the above into consideration the Code acknowledges the need to balance technical needs and constraints of a proposed site and the potential developmental impacts (Paragraph 26). These constraints are set out in detail in the section 'Technical and Operational Considerations' of the Code. The three key technical and operational considerations for installation sites are:

- **Coverage**: wireless infrastructure needs to provide an appropriate level of coverage over the intended geographical area. This involves ensuring that antennas are elevated sufficiently (often via masts) to provide clear lines of sight for signals.

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- **Capacity**: where existing network infrastructure can no longer meet the demand for network capacity in a particular area, additional sites may be required within that coverage area to meet the demand. This is more likely to be required in densely populated areas or areas of high footfall.

- **Backhaul**: the radio access network requires a connection to the core network. Backhaul is sometimes provided by a microwave link, which requires a clear line of sight between the two ends of the link.

The Code emphasis the need for Local Planning Authorities to take account of these constraints, on network deployment and siting and design, when considering proposals. In relation to the introduction of 5G network deployment the Code acknowledges the requirement of additional equipment to provide necessary coverage and capacity.

Paragraph 66 states that 5G will require a denser network of base stations than previous generations, including more fixed line fibre optic cable for reliable and high capacity backhaul. The siting of 5G installations will be more constrained and guided by these special technical and operational considerations.

Paragraph 67 goes on to note that because of the scale and technological constraints of 5G equipment, previous camouflage design solutions, such as tree mast designs and concealing antennas in flagpoles, may not be practicable or suitable. In these cases, simple designs with particular attention to colouration and finishes may help reduce visual impacts on a site-specific basis.

The revised Code illustrates that mobile connectivity helps in the delivery of public services e.g. to access Central and Local Government via online services, acknowledging that lives are more likely to be saved when a 999 call is made from a mobile than from a landline, Telehealth is becoming increasingly important and text message reminders also improve compliance with medication and keeping NHS appointments.

Good mobile connectivity also promotes sustainability e.g. it reduces the need to travel and thus carbon emissions. The Code continues to support mobile telecommunications network as it is seen as a crucial piece of national infrastructure in economic, community and social terms.

The Code reiterates that the digital infrastructure must be achieved in a timely and efficient manner, and in a way which balances connectivity imperatives and the economic, community and social benefits that this brings with the environmental considerations that can be associated with such development. Great emphasis is placed on the need to work collaboratively between stakeholders to ensure key digital network deployment and therefore supporting economic growth.

Local Policy

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Section 38 (6) of the Planning and Compulsory Purchase Act 2004 states that "If regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise".

Manchester Unitary Development Plan (July 1995)

The Manchester Unitary Development Plan (UDP) was adopted in July 1995 as the strategy document which set out guidelines for all development in Manchester and provided a framework from which to base decisions about planning applications.

The Manchester Core Strategy was adopted on 11 July 2012 which is the key development plan document in the LDF. It replaces significant elements of the UDP. However, a number of policies remain extant following the adoption of the Core Strategy including Policy DC 17.1 relating to telecommunications.

Policy DC 17.1 states that *applications for telecommunications development will normally be approved if the Council can be satisfied that the development has been sited and designed to minimise its impact on residential amenity and in environmentally sensitive areas. Wherever possible the Council will expect the potential of existing buildings and masts, including the sharing of such facilities, to be fully explored before agreeing to additional separate development*.

In the justification to Policy DC 17.1 the Council recognises the need for Manchester to be at the forefront in the field of telecommunications. The Council therefore starts from the presumption in favour of sustainable development and investment in the telecommunication systems serving the city. Equally, it wishes to ensure that new developments are brought forward in a way which protects residential amenity and minimises the visual impact of such development particularly in conservation areas and other environmentally sensitive areas in parks and the river valleys. The Council is also concerned to make maximum possible use of existing buildings and facilities by encouraging operators to share facilities wherever possible in order to avoid unsightly duplication and clutter.

Manchester Core Strategy DPD July 2012

The Manchester Core Strategy was adopted in July 2012 and sets out the long term strategic policies for Manchester's future development and will form the framework that planning applications will be assessed against.

The Core Strategy Vision states that:

'By 2027 Manchester will be:

- A successful and accessible city in the front rank of cities in Europe and the world.

- A city with a growing economy driven by the strength of the Regional Centre and Manchester Airport which supports a successful City Region. The knowledge based economy flourishes with an entrepreneurial community, characterised by a fully skilled, inclusive working population.
- Meeting the challenge of climate change at the forefront of environmental initiatives and improvement and continuing to deliver sustainable development and a more effective green infrastructure.
- A city with an increased and sustainable healthy population and a community which both benefits from and drives the City's productivity upwards.
- A city with neighbourhoods where people choose to live all their lives.

In order to help meet this vision the Core Strategy sets out a number of spatial objectives.

Spatial Objective SO1 relates to spatial principles and aims to provide a framework within which sustainable development of the city can contribute to halting climate change.

Spatial Objective SO2 relates to the economy and supports a significant further improvement of the City's economic performance and spread the benefits of this growth across the City to reduce economic, environmental and social disparities, and to help create inclusive communities.

SO4 relates to Centres and aims to provide a network of distinctive, attractive and high-quality centres, strengthening local identity, providing essential services close to homes and local access to healthy foods.

Policy SO1 relates to spatial principles and states inter alia that development in all parts of the City should:

- Make a positive contribution to neighbourhoods of choice including making a positive contribution to the health, safety and well-being of residents.
- Considering the needs of all members of the community regardless of age, gender, disability, sexuality, religion, culture, ethnicity or income.
- Minimise emissions.
- Improve access to jobs, services, education and open space by being located to reduce the need to travel.

Policy EM1 relates to employment and economic growth in Manchester. The policy states that the priorities for economic growth include:

- Ensuring the continued social, economic and environmental regeneration of the city.
- Ensuring the connectivity to international markets for the import and export of goods to ensure competitiveness in international markets.

Policy DM1 relates to development management. It is a general design policy which is not specifically related to telecommunications but contains some relevance for such

applications. The policy states that all development should have regard to the following inter alia:

- Appropriate siting, layout, scale, form, massing, materials and detail.
- Impact on the surrounding areas in terms of design, scale and appearance of the proposed development. Development should have regard to the character of the surrounding area.
- Effects on amenity including privacy, light, noise, vibration, air quality, odours, litter, vermin, road safety and traffic generation.

Manchester Digital Strategy 2021-2026

Manchester is home to a vibrant and thriving digital sector that plays an increasingly important role in the success of our city by providing opportunities for residents and attracting investment that drives sustainable growth.

This Digital Strategy will ensure that the city continues to support, sustain and grow out digital ecosystem, while strengthening its connection with the people, organisations and services that call Manchester home. It provides the foundation for us to achieve our aim of being a world-class digital city by 2026, supporting and contributing to the objectives set out in the Our Manchester Strategy.

This digital strategy for Manchester is the vision for Manchester's digital future. It sets the priorities that out whole city – our public, private, voluntary and community organisations and our residents – will be able to work on together to make Manchester one of the world's leading smart cities and digital economies in the next five years.

Manchester is already one of Europe's fastest growing technology cities. We already have a strong and resilient digital sector, acknowledged as "the UK's second technology city", consistently outperforming "all cities outside of London" (The Data City, 2019). This is significant not only in terms of the scale of the sector but also in terms of its scope in covering both established and emerging technologies and providing a talent pool of digital and creative skills supporting consistent growth across all parts of the sector.

The new Digital Strategy aims to capitalise on our strengths, while acknowledging current challenges and looking to ways of ensuring inclusive recovery that are both sustainable and resilient, with digital inclusion, equalities and diversity at its heart. We want to put out people at the centre of this, not only making the best of digital to improve our lives but also ensuring that we can play an active role in codesigning and coproducing digital applications and services.

The digital place's theme states:

"We will create digital neighbourhoods providing access, connectivity and support for all residents and businesses and digitally enabling enhances health and wellbeing".

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The future prosperity theme states:

"We will enable the digital economy and ecosystem to grow, continue to attract new digital businesses & sectors and support a resilient and inclusive economy".

Digital Places

Digital places is about making sure the city itself, alongside its people, drives us towards a more digitally enabled future.

In a digital place, high quality and open digital infrastructure is ubiquitous at every level, Its leaders think towards the future and make sure that the changes we make to our physical environment today support the technological demands of tomorrow, and therefore much of Digital places is about how we plan for and consider these future requirements in everything that we do to create a built environment that is fully digitally enabled.

Our Manchester Strategy – Forward to 2025

The Our Manchester Strategy 2016-2025 sets out the long-term vision for Manchester's future. It details the priorities that the whole city – our public, private, voluntary and community organisations and our residents – will work together to put Manchester in the top-flight of world cities by 2025.

As in the Our Manchester Strategy, our vision remains for Manchester to be in the top-flight of world cities by 2023, when the city will:

- Have a competitive, dynamic, sustainable and fair economy that draws on our distinctive strengths in science, advanced manufacturing and culture, creative and digital businesses – cultivating and encouraging new ideas.
- Possess highly skilled, enterprising and industrious people.
- Be connected, internationally and within the UK.
- Play its full part in limiting the impacts of climate change.
- Be a place where residents from all backgrounds feel safe, can aspire, succeed and live well.
- Be clean, attractive, culturally rich, outward-looking and welcoming.

In order to achieve the ambitions set within the strategy vision, a number of priorities on key areas were created to address the challenges and build on the opportunities.

One of the priorities refers to *connected city* and it states:

- We will enable increased walking and cycling, and continue to develop an integrated, accessible, safe and green public transport system across the city and beyond.
- We will become a digitally inclusive city, with better digital infrastructure, access to digital technology and strong digital skills.

Places for Everyone Joint Development Plan (Adopted March 2024)

The Places for Everyone Joint Development Plan is a collective agreement and plan between Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan. It was formally adopted in March 2024 by all local planning authorities in the Greater Manchester region.

In 2019 Greater Manchester set out bold plans to give people, communities and businesses hope and confidence for the future. However, the impact of Covid 19 has had a on the way people live and work over the shorter term with a high degree of uncertainty over its impact in the long term. In response the Government has been very clear that we need to positively plan for recovery. The Government first made commitments to supporting economic recovery in mid-2020, for example with the Prime Minister's Build, Build, Build announcement at the end of June 2020 setting a context for England as recovered from Covid-19.

The vision is to capitalise on the opportunities which were brought about the recent pandemic… the borough need to be places where people have access to the services they require through high quality digital communications.

The Places for Everyone Joint Development Plan provides an important opportunity to create the conditions for inclusive economic growth.

By the end of the Plan period, Greater Manchester aims to be a top global city. To do this it will require a range of attributes, including a strong economy, skills residents, a high quality of place and the environment, and a diverse portfolio of investment and development opportunities.

The vision for Greater Manchester is set out in the Greater Manchester Strategy:

'Our vision is to make Greater Manchester one of the best places in the world to grow up, get on and grow old:

- *A place where all children are given the best start in life and young people grow up inspired to exceed expectations.*
- *A place where people are proud to live, with a decent home, a fulfilling job, and stress-free journeys the norm. But if you need a helping hand, you'll get it.*
- *A place of ideas and invention, with a modern and productive economy that draws in investment, visitors and talent.*
- *A place where people live healthy lives and older people are valued.*
- *A place at the forefront of action on climate change with clean air and a flourishing natural environment.*
- *A place where all voices are heard and where, working together, we can shape our future'*
-

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To meet the vision, the plan sets out 10 objectives. The most relevant to telecommunications are below:

Objective 6: Promote the sustainable movement of people, goods and information

- *Ensure new development provides opportunities for affordable, high quality digital infrastructure.*

Objective 7: Playing our part in ensuring that Greater Manchester is a more resilient and carbon neutral city-region

- *Promote sustainable patterns of development that minimise the need to travel and contribute to cleaner air;*
- *Locate and design development to reduce car dependency.*

Objective 9: Ensure access to physical and social infrastructure.

- *Ensure that our communities and businesses are supported by infrastructure;*
- *Improve the capacity and network coverage of digital, energy, telecoms, transport and water in key growth locations.*

Policy JP-S1 refers to sustainable development

> *'To help tackle climate change, development should aim to maximise its economic, social and environmental benefits simultaneously, minimise its adverse impacts, utilise sustainable construction techniques and actively seek opportunities to secure net gains across each of the different objectives'.*

Policy JP-S1 refers to Sustainable Places and is referenced for all development. Key attributes should be consistent with:

'1. Distinctive, with a clear identity that:

> *A. Conserves and Distinctive, with a clear identity that: Distinctive, with a clear identity that: A enhances the natural environment, landscape features, historic environment and local history and culture;*
> *B. Enables a clear understanding of how the place has developed; and*
> *C. Respects and acknowledges the character and identity of the locality in terms of design, siting, size, scale and materials used'*

5. Adaptable, able to respond easily to varied and changing needs and technologies
14. Well-connected to other places, particularly by public transport and digital infrastructure enabling everyone to take advantage of the employment, cultural and leisure opportunities across Greater Manchester and beyond'.

Chapter 10 of the Places for Everyone Joint Development Plan document details how the Greater Manchester region will become more connected and integrated.

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Para 10.3 directly states that digital connectivity is growing in everyday life. The use of being able to be digitally connected allows people to connect with people wherever they are and access to a range of learning, employment and retail opportunities.

Para 10.21 acknowledges the rise in digital demand and the continuous of the demand is likely to continue. The area is to become "smarter" with services to adopted innovations such as connected and autonomous vehicles, artificial intelligence and the Internet of Things (where an increasing range of everyday devices are connected, monitored and operated via the internet). It is the Greater Manchester ambition to be the UK's leading digital city and one of Europe's top five.

Policy JP-C1: An Integrated Network outlines how Greater Manchester will meet its low carbon emissions target through world-class connectivity. This includes a range of measures:

> *1. Delivering a pattern of development that minimises both the need to travel and the distance travelled by unsustainable modes to jobs, housing and other key services, including healthcare, education, retail, recreation and leisure facilities, green space and green infrastructure;*
>
> *2. Enabling the provision of high quality digital infrastructure'.*

Chapter 10 goes further to reference the importance of digital connectivity.

Paragraph 10.29 refers to the opportunities that digital connectivity can bring are unprecedented and everyone should have the opportunity to access them so they can fully participate in society and the economy.

Paragraph 10.30 notes a global city requires digital infrastructure to be competitive and support high levels of social inclusion:

> *'Any truly global city will need to have widespread, affordable, reliable, secure and future-proofed digital infrastructure that provides a competitive edge for businesses and supports high-levels of social inclusion. This will be essential to capitalise on new innovations, such as artificial intelligence, the Internet of Things and connected and autonomous vehicles. Big data will also enable the city-region to be managed more effectively. By facilitating more home-working, good digital infrastructure can also help reduce the need for travel and therefore help reduce carbon emissions, traffic congestion and air pollution'.*

Paragraph 10.33 recognises the growth and development that digital infrastructure and capability goes through. The evolution of digital connectivity through next generation technology has increased and so has the speed that it evolves. Digital infrastructure is therefore needed to adapt and evolve.

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The plan directly supports the provision of affordable, high quality, digital infrastructure with Policy JP-C2 digital connectivity. In making decisions the plan supports a range of measures, including:

> *'1. Enabling the roll-out of latest generation mobile technology and full fibre to the premises connectivity, in a way that maximises coverage whilst protecting townscape quality and ensuring an ability to respond to updated / changing technology'.*

Greater Manchester Local Industrial Strategy (June 2019)

This Local Industrial Strategy sets out how Greater Manchester (GM) will forge its future. It states that it will build on GM's position as a 'leading European digital city-region; enable the digitalisation of all sectors; and capitalise on the links between digital and creative industries that feed internationally significant clusters in broadcasting, content creation and media, and maximise growing assets in cyber security

It aims to put in place the integrated 21st century infrastructure needed for digital driven, clean and inclusive growth.

A top 5 city-region for the digital economy in Europe, with full fibre broadband and 5G coverage.

The Strategy states that GM will take a 'Made Smarter' approach to all industries, supporting forms to adopt new digital and creative techniques and enabling the digitalisation of all sectors.

The strategy has a specific section relating to infrastructure and acknowledges its importance:

'…The city-region now aims to upgrade, integrate and future-proof its infrastructure, to create a 21st century city-region with extreme digital connectivity, clean and inclusive growth and – through work with others – improved access to national and global markets. Existing partnerships are working to improve digital infrastructure in the city-region to meet national targets of roll out of 5G technologies for most people by 2027'.

The Local Industrial Strategy sets out an objective to ensure the vision for infrastructure is met:

- World-class connectivity – digitally and through an integrated transport network within all parts of GM.

To achieve the ambitions of the GM Local Industrial Strategy it identifies actions around 5 foundations of productivity: Infrastructure, Ideas, People, Business Environment and Places. These are noted as being essential attributes of every successful economy. It also identifies opportunities grouped under 4 Grand Challenges – Artificial Intelligence and Data, the Ageing Society, Future Mobility and Clean Growth.

The Vision for the Digital, Creative and Media is set out in the Local Industrial Strategy and reproduced below:

'GM will be a leading European digital City-Region, with the infrastructure, skills and networks needed to digitise all sectors, and internationally significant clusters in broadcasting, content creation and media and cyber security'.

To help meet the vision the strategy states that GM will continue to transform the digital connectivity of the city-region to drive economic growth and innovation, working with Government to meet national targets of full roll-out of 5G technologies for most people by 2027.

The Local Industrial Strategy acknowledges that GM will aim to become one of the best digitally connected city-regions in the UK. It fully supports the development of 5G networks.

Greater Manchester Infrastructure Framework 2040 (GMCA)

This is a pre-cursor to the GM Infrastructure Strategy. The aim is to focus on developing infrastructure which ultimately improves the lives of all those living and working within Greater Manchester.

The Infrastructure Framework acknowledges a number of key challenges, one of which is digital and the need to provide pervasive, affordable, resilient digital connectivity. The Framework notes that 'Digital technology is increasingly the backbone of the major industries and our daily lives'.

The Framework goes on to states that approaching 2040, GM will need to be a Smart and digitally ready City Region. To achieve this, and support on-going digitalisation, the region will require resilient fixed connectivity (through fixed fibre) supported by 5G (and subsequent technologies). It will also need to streamline the process for installation of new infrastructure within the street space.

The Framework notes the vision for the GM Infrastructure Strategy:

'Develop and maintain a holistic infrastructure system that is robust, accommodates sustainable growth and supports the ambitions of the Greater Manchester Strategy to make "Greater Manchester one of the best places in the world to grow up, get on and grow old".

The Greater Manchester Infrastructure Strategy should seek to:

- Support the lives and well-being of people, communities and the environment within Greater Manchester.

- Be age-friendly and support the economic and social participation of both young and old.

- Support strategically identified growth for parts and communities within Greater Manchester.

- Be flexible, robust and met the existing and future needs of the communities and technological change.

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- Provide world-class connections and access to opportunity for all.

- Provide world-class digital infrastructure which provides a platform for GM to embrace emerging technological and societal changes.

- Support a carbon-neutral GM and be economically, environmentally and socially sustainable.

The Framework identifies a key infrastructure trend to 2040 as Digital (Telecommunications Operators) including mobile infrastructure:

- As the population and employment is due to rise:

  * More people will mean more homes and businesses, and more consumers of digital services.

  * There will be a growing demand for high-speed, resilient data connectivity to facilitate changing patterns such as shopping patterns moving online, whilst flexible working becomes more prevalent.

- Changing workforce:

  * More productive, higher skilled, higher paid jobs more specialised and skill activities needs digital infrastructure to support higher skilled industries – which may require increased digital infrastructure.

- Environmental Change:

  * Improving efficiencies of buildings and appliances. The use of smarter technologies within each infrastructure sector will look to improve efficiencies further.

The Framework comments on digitalisation noting the importance of it and how it has transformed the way in which we go about our everyday lives:

'We live in an increasingly digital world. Technologies that are visionary today rapidly become part of everyday life tomorrow. In turn, people's expectations are rising constantly. "Digital" now encompasses an increasing array of technologies, from sensors, smartphones and robots, to augmented reality, cloud computing and data analytics. These technologies are changing the way in which we live and places we live in. Digital technologies are being used to make cities more smooth running, more productive, and more democratic. The pervasiveness of digital technology in our lives represents a major change. For these technologies to function effectively, it is fundamental that a robust and diverse underpinning infrastructure is installed that ensures a future-proofed platform for the development of these and many new technologies for years to come.

As our homes, businesses and cities become more reliant on digital technology to function the robustness of these systems becomes even more critical'.

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The Framework states that 'anyone in GM should be able to access resilient, seamless connectivity at a speed they need anywhere and anytime'.

- New technologies, artificial intelligence and atomisation:

  * Improvements in artificial intelligence and atomisation technologies will transform infrastructure sectors and business markets.

  * Digital infrastructure will be crucial to supporting future technology and a Smart City Region.

  * Embracing digital technology throughout all sectors, geographies and occupations is fundamental to GM's current and future international competitiveness.

The Framework acknowledges that the vision of moving to a smart and digitally-ready city-region requires future digital infrastructure to be strong fixed resilient connectivity, supported by 5G (and beyond), big data systems and other nascent technologies such as Artificial Intelligence and machine learning. Without connectivity it is acknowledged that processing the sheer volumes of data necessary to create a network of communicating devices will be impossible. As such, the Framework states that big improvements are required to increase the provision of wired and wireless (through 5G or subsequent technologies and Wi-Fi provision) across GM. Without the more basic technology solutions (such as passive fibre connectivity and 5G) the smart-region solutions and value-added outcomes will struggle to be brought to fruition.

The Framework notes that 5G roll out is expected from 2020. However, the timing and costs of roll out is uncertain and international standards have yet to be agreed. It is possible that there will only be one network upon which providers deliver their services or that each provider might need to invest. With regards to the Regional Centre if Challenge 8 is to be met to provide pervasive, affordable, resilient digital connectivity the challenge is early roll out of 5G especially in areas where mobile data use is congested such as the Regional Centre.

The Framework also states that GMCA and the Districts together with digital and telecommunication providers need to drive forward opportunities to promote connectivity and uptake in the Regional Centre.

The Greater Manchester Digital Blueprint 2023-26

The blueprint has been developed in collaboration with stakeholders from across Grater Manchester's digital sector and shares strategic commitments to put our people, our environment, and our place firmly at the heart of our plans.

The purpose of this Digital Blueprint is to better the lives of people and for them to be empowered by the opportunities a digitally fuelled city-region brings. To use technology and data better to make this a greener, fairer, more prosperous city region.

The ambition for the Greater Manchester set in the Digital Blueprint is to be world-leading digital city-region, where people, places and environment are at the heart of the plans. It

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sets the goal to have more inclusive and sustainable approach to build on the region's greatest assets.

Digital Blueprints aims for Greater Manchester to be a place with the fastest-growing digital economy in Europe, where communities, business, academia and public services work together to create opportunity, innovate and invent; and where growth benefits everybody. Where Greater Manchester is a world-leading digital city-region, recognised globally for its digital innovation. Just in 2022 there was £532 million invested in Greater Manchester companies, and over 69000 creative, digital and tech sector roles advertised.

The Blueprint recognises the potential for Greater Manchester for businesses growth. With the world class digital infrastructure, and existing physical infrastructure, the region can create a digital place, into which entrepreneurs and innovators from across the globe want to connect. 78% of companies in digital sector within Greater Manchester reported expansion in 2022 (source: Manchester Digital Skills Audit).

The Digital Blueprint underpins and supports the commitments in the Greater Manchester Strategy 2021-31. It has also set priorities that will help to digitally enabling a greener, fairer, more prosperous city-region for everyone, those are:

- Empowering people and communities
- Building responsible, data driven public services
- Enabling a resilient and prosperous economy
- Creating connected, inclusive, sustainable places
- Strengthening our position as a global digital influencer

Digitally enabling a resilient and prosperous economy – to achieve this we will both enable all businesses to use technology better and support the creation and scaling of digital organisations for the benefit of the UK and the people of Greater Manchester.

Creating connected, inclusive, sustainable places – to mission of this priority is to build world class digital infrastructure, ethically using technology and to create resilient, connected, accessible and sustainable places for everyone. As one of the steps to ensure fulfilment of this priority will be provision of world class digital infrastructure that stimulates economic growth and enables the development of our growth zones, across sectors and locations.

The key strategic enablers set in the GM Digital Blueprint are:

- Building digital skills and literacy for life, education, work and business
- Strengthening our digital talent pipeline
- Extending our world class digital infrastructure, technology and data
- Harnessing academia, testbeds and research

Online Nation 2024 Report (November 2024)

The Online Nation report (November 2024) sets out an overview of the UK online landscape in 2024, exploring both children's and adults' use of and experiences on online services. For most people in the UK, being online is a major part of daily life. Being online allows people to connect with others, sometimes in ways they may not be able to do offline. Data shows how we benefit from a range of online services, from messaging and calling platforms to gaming platforms, online news outlets and online shopping.

The 2024 report found that the majority of the time spent online per day in May 2024 by adults was on smartphones, in all age groups.

The 2023 report found that three quarters of the time spent online per day in May 2023 by adults was on smartphones.

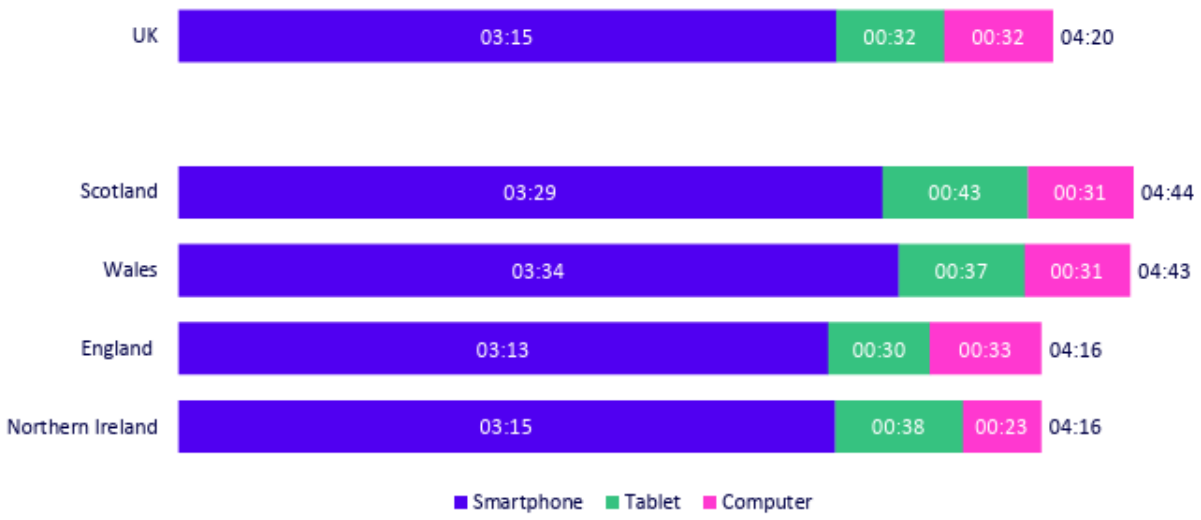


Source: Average daily time spent online by device - Ipsos, Ipsos iris Online Audience Measurement Service, May 2024, age: 18+, UK internet users. Note: custom data supplied by Ipsos. Time spent online includes personal use and in some instances those who also use their device for work. UK home internet access - Ofcom Technology Tracker 2024. QE1: do you or does anyone in your household have access to the internet at home (via any device, e.g. PC, mobile phone etc.), and if so, do you personally use the internet at home? Base: all respondents aged 16+, UK.

UK adults spent an average of 4 hours 20 minutes a day online in May 2024. Young adults spent the most time online, with 18-24-years-old spending a daily average of 6 hours 1 minute online, and those aged 65+ spending the least time online (3 hours 10 minutes).

In May 2024, 75% (3 hours 15 minutes) of the time spent online per day by UK adults, across smartphones, tablets and computers, was on a smartphone. The average time spent online on computers and tablets was identical at 32 minutes daily, with older people (65+) tending to spend more of their time online on tablets, and young people spending relatively more of their time on computers. The 25-34-year-olds spent the greatest proportion of their time online on smartphones, at 83% while those aged 65+ spent the least time via smartphone, at 56%.

Figure 3: Daily time spent online by adults, by device and UK nation (hours:minutes): May 2024



Source: Ipsos, Ipsos iris Online Audience Measurement Service, May 2024, age: 18+, UK internet users. Note: Custom data supplied by Ipsos.

In keeping with previous years, Alphabet, which owns Google and YouTube, remained the organisation whose sites and apps are most visited by UK adults, reaching almost all UK online adults (99%) in May 2024, maintaining the levels seen in 2023 (99%). Meta, the owner of Facebook, Instagram and WhatsApp, followed close behind, with its sites and apps visited by 96% of UK online adults (May 2023: 97%). The sites and apps of Amazon, Microsoft and BBC were the third, fourth and fifth most visited, visited by 90%, 87% and 83% of UK online adults respectively. The top five most-visited organisations were the same for all UK nations.

UK online adult smartphone users used on average 38 apps on their smartphones in May 2024, up from 36 in May 2023. All adult age groups saw an increase in the average number of apps used on smartphones between May 2023 and May 2024 except 18-24-year-olds, who used one fewer app than the previous year, and 18-24-year-olds used the fewest apps of any age group except those aged 55+ - perhaps surprisingly, since the 18-24 age group spent the most time using smartphones.

Ofcom research found that 41% of UK internet users aged 16+ said they had used a generative AI tool in the past year, with 18% of those aged 16+ saying they had used a generative AI tool in the past month. Internet users aged 16-24 were the most likely to say they had used a generative AI tool in the past year (78%) compared to all other age groups.

Ofcom's survey found that 33% of UK online aged 16+ said that they had used ChatGPT in the past year, with a long tail of other generative AI tools reaching 15% or less. Ipsos iris data found that 9% (4.2m) UK online adults aged 18+ visited ChatGPT in May 2024, increasing to 11% (5.0m) in August 2024. ChatGPT's adult reach was highest among UK online 18-24-year-olds (27%, 1.4m) in May 2024. However, while reach to those aged 25+ remained relatively stable in the following two months, reach to 18-24-year-olds declined by 16% (-226k). This may be partly because this time period marked the end of the academic year, with this age group potentially having less need to find information or content relating to their education. The notable increase in reach, particularly to 25-34 year olds, in August 2024 compared to previous months, may partially be attributed to the publicity generated by OpenAI's announcement on 25 July of its SearchGPT Prototype – a search designed to combine OpenAI's models with information from the web.

Meta-owned WhatsApp (web or app) continued as the highest-reaching messaging service, reaching 87% of UK online adults in May 2024. Sixty-four per cent of UK online adults accessed WhatsApp per day in May 2024, an increase of 6pp compared to May 2023 (58%). Ofcom's survey similarly found that 86% of UK internet users aged 16+ had used WhatsApp in June 2024, followed by Facebook, Messenger with 59% and Instagram direct messages with 30%.

Sixty-nine per cent (32.5m) of UK online adults visited one of the top then health and wellbeing websites or apps in May 2024, up from 66% for the same sites the previous year. The nhs.uk website was the highest-reaching NHS-owned site or app, reaching 47% (22.5m) of UK online adults, followed by the NHS app, visited by 21% (10.0m) of UK online adults in May 2024. Fifty-eight per cent (23.0m) of adults in England visited NHS-owned sites or apps in May 2024, 53% (1.1m) in Wales, 39% (1.5m) and 35% (437k) in Northern Ireland.

On average, 16.4 million (35%) UK online adults visited Amazon per day in May 2024.

Ofcom's OET found that, when asked to consider the impact of being online, the majority (67%) of adult internet users agreed that for them personally, the benefits of being online outweighed the risk, with just 7% disagreeing. Although, the majority recognised the benefits, the proportion doing so had decreased since the previous two waves of the tracker, from 71% in June 2023 and 68% in January 2024.

Connected Nations 2024 (December 2024)

The current Connected Nations report provides update data on the coverage and usage of fixed broadband and mobile networks within the UK. This includes updates on take-up of services on full-fibre and gigabit-capable networks, reporting on the further development of 4G networks and progress on the rollout of 5G networks.

The report recognises that mobile connectivity has become an integral part of modern living; it enables effective communication, provides access to information and services, enhances productivity, and supports various aspects of daily life.

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5G availability continues to grow steadily. 5G continues to reach a growing number of consumers, with around 50% of mobile handsets now 5G capable and notable increases in coverage observed across the UK. The availability of 5G, where consumers are likely to a 5G network, continues to grow, although it varies by MNO and geography. In 2024, there has been an increase in 5G coverage across the UK, with 95% (High Confidence) and 90% (Very High confidence) 5G coverage in areas outside of premisses where it is available from at least one MNO. This is an improvement from 93% and 85% respectively in 2023.

	5G outside premises (MNO range)	4G outside premises (MNO range)	4G geographic (MNO range)	4G total not spots	Voice and text total not spots
UK	61-79%	99-99+%	88-89%	5%	3%
Scotland	54-76%	99-99+%	77-80%	11%	7%
Northern Ireland	36-90%	98-99%	89-95%	2%	<1%
Wales	16-80%	98-99%	83-89%	5%	3%
England	65-81%	99-99+%	94-96%	1%	1%



Source: Ofcom analysis of MNO predictions (September 2024)

The footprint where all MNOs provide 5G coverage remains considerably lower. However, it has increased, now covering outside 38% of premises at the High Confidence level and 19% at the Very High Confidence level, up from 25% and 16% respectively last year.

The report also notes that while 5G coverage is expanding, the most people still use voice and data services over 4G. Overall, 4G geographic coverage across individual MNOs in the UK has increased significantly since 2023, rising from a range of 80-87% to 88-89% this year. 4G geographic coverage where it is available from at least one MNO has now reached 95% compared to 93% in 2023. As the majority of the UK landmass is rural, rural coverage levels are similar to overall UK levels, while urban areas report moderately higher geographic coverage.

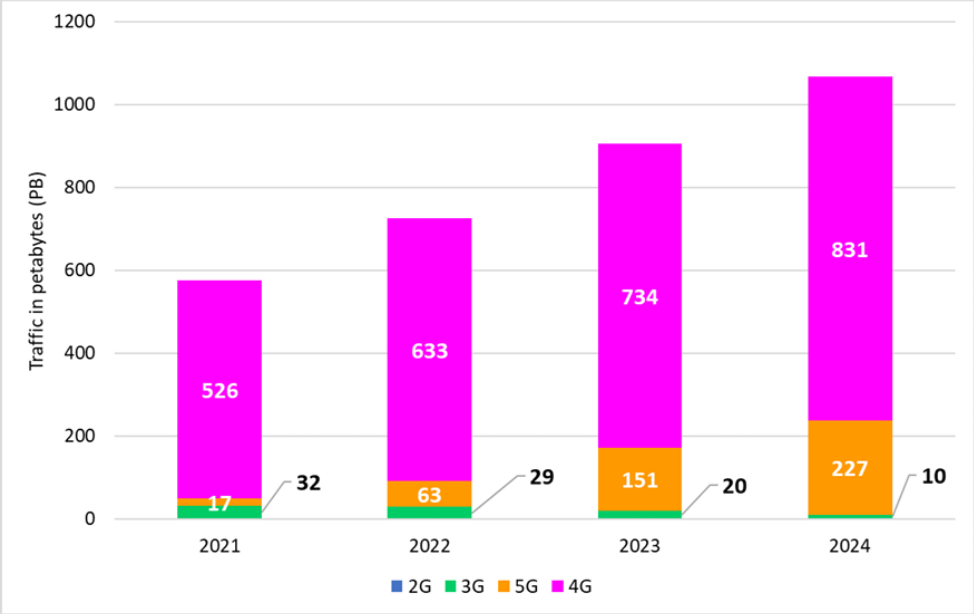
The report notes that 4G coverage is predicted to be available inside vehicles on motorways and A roads across individual MNOs in a range of 89-92%. This falls to a range of 80-83% for B roads. Outside vehicles, 4G coverage on motorways and A roads ranges between 98-99% across individual MNOs, compared to 94-98% in 2023, and between 95-96% for B roads, compared to 90-95% in 2023.

The Connected Nations 2024 report states that 3G and 2G switch-off is underway. All MNOs made a commitment to the Government to switch off their 2G and 3G networks by 2033 at the latest. This will result in improved network efficiency and enable more spectrum to be used for 4G and 5G services.

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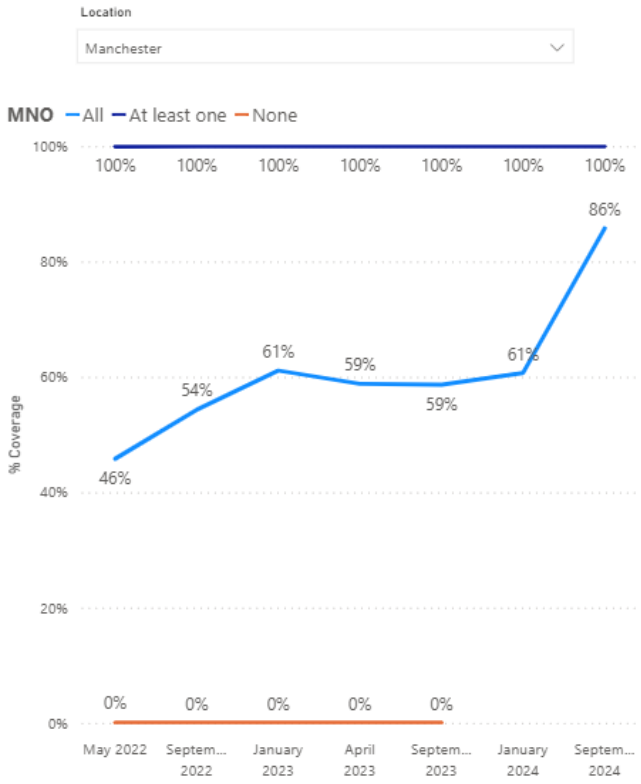
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5G traffic has shown the highest growth from 151 PB in 2024 to 227 PB in 2024, an increase of around 50%. This data traffic was generated from a device pool which now includes at least 50% 5G capable handsets (up from around 43% in 2023) and represents around 21% of the total monthly mobile traffic, up from around 17% in 2023. 14% of this traffic is 5G standalone, which is around 3% of overall monthly mobile traffic in the UK. While 5G traffic has increased rapidly, 4G continues to carry most of the mobile data traffic, accounting for around 78% of total monthly data traffic (a decrease from 81% reported in 2023).

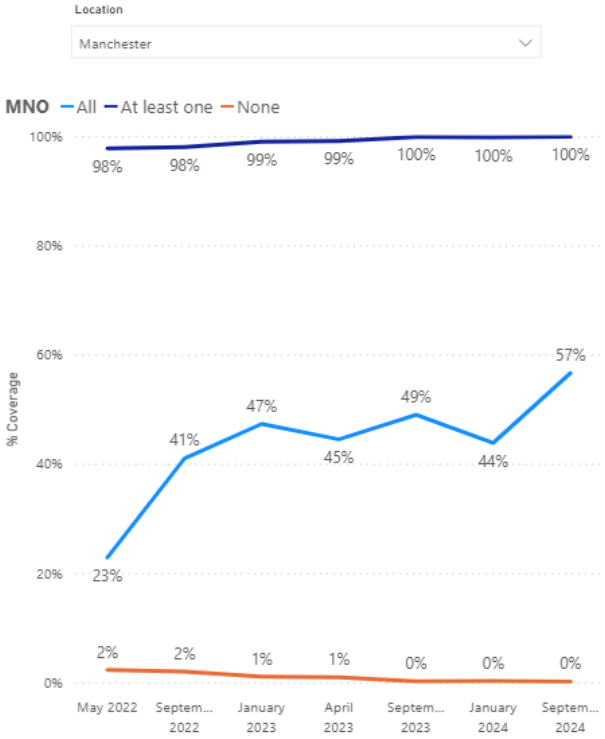


Source: Ofcom analysis of operator data (May 2021, May 2022, May 2023, July 2024)

The Connected Nations 2024 report also contains an updated interactive map which shows mobile coverage for the local authorities throughout the UK. The below figures show the coverage of landmass, premises and roads by mobile networks for voice, data for 5G (with a High Confidence, and Very High Confidence. The line charts below show coverage over time since May 2022 in relation to 5G coverage at both high confidence and very high confidence levels in Manchester City Council.



Map 1. 5G high confidence geographical coverage within Manchester City Council.



Map 2. 5G very high confidence geographical coverage within Manchester City Council.

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As shown in the figures above, 100% of the Manchester City Council area has access to 5G at a High Confidence level from at least one operator, and the same is in case of a Very High Confidence level. However, these figures drop significantly to 86% and 57%, respectively, when considering 5G provision from all four main mobile operators. The proposed new radio base station at this site will help improve digital connectivity in the surrounding area.

Connected Nation 2023 Report (December 2023)

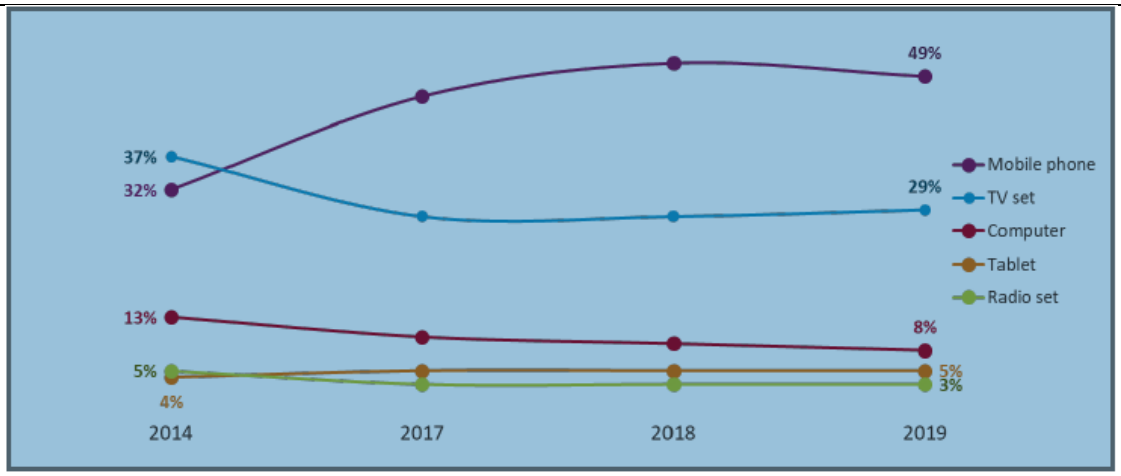
Connected Nation is an annual report on progress in the availability of broadband and mobile services in the UK, including the roll out of mobile 5G networks. The 2023 report was published in December 2023. These reports support Ofcom's objective of making communications work for everyone, including to promote reliable, widely available, and high-quality networks. The latest report found that the availability of 5G services is growing rapidly. The level of 5G coverage provided outside of premises by at least one mobile network operator (MNO) rose from 67-78% in 2022 to 85-93% in 2023. As of September 2023, there were more than 18,500 5G deployments in place across sites in the UK up from around 12,000 5G deployments reported in 2022.

The 2023 Connection Nations Report also found there has been fast paced growth in 5G capable devices and traffic with 5G traffic showing a growth of around 140% from 2022 to 2023. This data traffic was generated from devices, of which at least 43% are 5G capable handsets (up from around 20% in 2022). Traffic on 5G capable handsets represents around 17% of total mobile traffic, up from around 9% in 2022.

The Report notes that the MNOs have started to switch off their 3G networks. The number of customers using devices reliant on 2G and 3G connectivity has fallen sharply, from approximately 5.5 million reported last year to 2.4 million this year, of which just over half a million are residential customers with a 3G device. Less than 3% of all data traffic is now carried on 3G networks, with 3G data traffic having decreased by an average of 44% year on year.

The Connected Nation 2023 report (published December 2023) found that for most people in the UK, being online is a major part of daily life. Being online allows people to connect with others, sometimes in ways they may not be able to do offline. Data shows how we benefit from a range of online services, from messaging and calling platforms to gaming platforms, online news outlets and online shopping.

Below figure indicates the most-missed device among adults: 2014-2019 were it be taken away from them. As can be seen, nearly half of all adults say that their mobile device is the device they would miss most were it taken away from them.



In total, 47.9 million UK adults accessed the internet on smartphones, tablets and computers in May 2023, spending an average of 3 hours 41 minutes a day online, eight minutes more than in May 2022. Young adults continue to spend the most time online, with 18-24-year-olds spending a daily average of 4 hours 36 minutes, and the 65+ group spending the least time (2 hours 46 minutes).

YouTube is the highest-reaching social media service among UK online adults using smartphones, tablets or computers, taking the top spot in May 2023 from Facebook (including Messenger), with more than nine in ten (91.0%) visiting it that month. In May 2022, Facebook was the highest reaching social media service, reaching 93.8% of UK online adults but in May 2023 it had 1.4 million fewer adult visitors, maintaining a high overall UK online adult reach (90.7%) but now on par with YouTube. TikTok, in fifth place, overtook LinkedIn, now ranked sixth, reaching 44.3% of UK online adults in May 2023, up by 9 percentage points since May 2022 (34.7%). UK online 18-24-year-olds are avid users of social media, and over half of them are visiting six social media platforms: 96% visited YouTube in May 2023, 87% visited either Facebook or Facebook Messenger, 86% visited Instagram, 72% visited TikTok, 71% visited Snapchat and 61% visited X (formerly Twitter).

Levelling Up the United Kingdom (February 2022)

Digital Connectivity is a focus area, and the mission is 'By 2030, the UK will have nationwide gigabit-capable broadband and 4G coverage, with 5G coverage for the majority of the population'. This mission is focused on improving digital connectivity.

Digital connectivity: The case for action

The COVID-19 pandemic demonstrated the importance of digital infrastructure right across society, from ensuring business continuity to reducing isolation. Improved digital connectivity has the potential to drive growth and productivity across the UK and widen job opportunities through remote working. However, there are significant spatial disparities in the quality of broadband and mobile networks, with rural areas likely to experience worse digital connectivity than urban areas. Infrastructure is only part of the picture: economic benefits will

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only materialise if businesses and workers have the skills to take advantage of improved infrastructure.

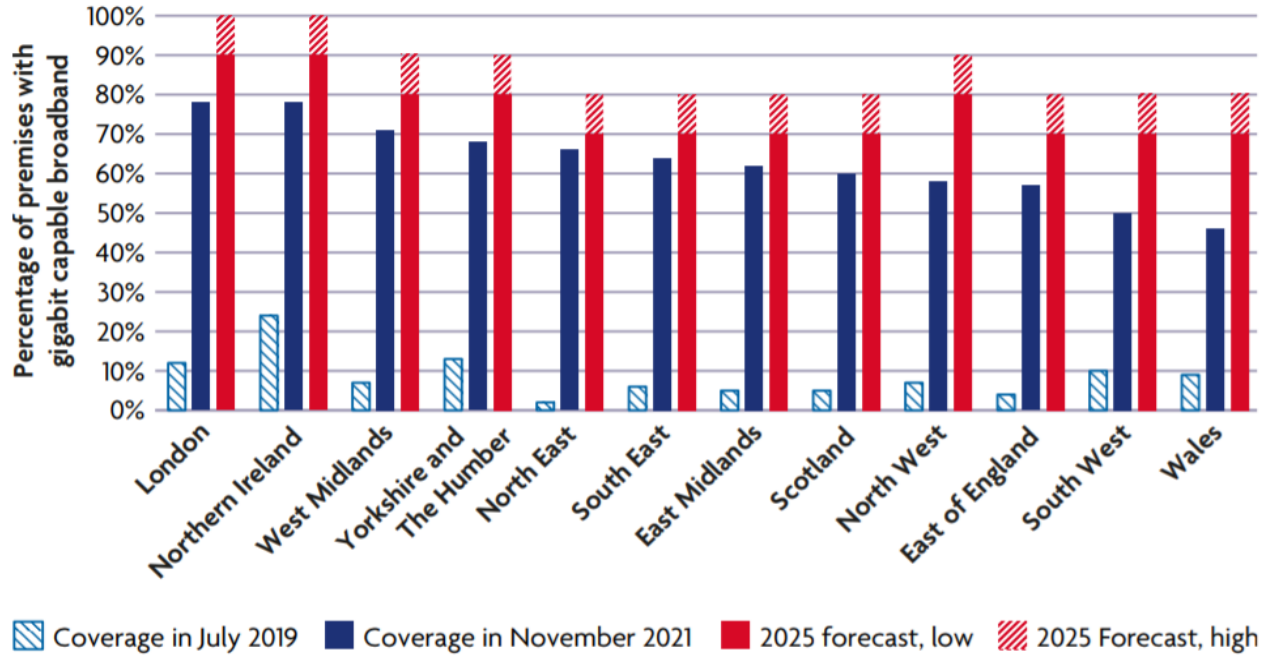
More broadly, high quality digital infrastructure can deepen local labour markets through remote working, making it more attractive for both workers and companies to locate regionally. It also allows for the development of high-value sectoral clusters, which can drive growth and jobs in new areas. Existing specialisms in the UK regions have the potential to generate strong tech clusters, such as fntech in Scotland and Wales, e-Commerce in the North West and Northern Ireland, and Agri-Tech in Yorkshire and the Humber. The sector also provides opportunities for raising living standards – median earnings for the sector are 50% higher than the UK average.

The policy programme.

In 2020, the UK Government published the National Infrastructure Strategy, committing to providing £5bn in public funding to roll out gigabit broadband to at least 85% of the country by 2025, and subsequently to as close to 100% as possible, working with the private sector.

Public investment will target premises that are hardest to reach, and which would otherwise not be provided for by the private sector, ensuring no areas are left behind. Gigabit coverage has increased from 10% to over 60% in less than two years. Since 2019, coverage has improved across the UK, and the UK Government anticipates the following additional improvements to be delivered as a minimum by 2025, as set out below.

Figure 3.1 Gigabit coverage improvements, UK countries and regions, 2019, 2021 and 2025 (forecast)



Source: Levelling Up the United Kingdom.

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In 2022, the UK Government will publish the Wireless Infrastructure Strategy. This will review how far the private sector will go to deliver wireless infrastructure across the country and determine whether there are any market failures in places that need to be addressed, and how the UK Government could tackle these.

We must ensure that people have sufficient digital skills to reap the benefits and prosperity arising from the digital economy. In 2020, the UK Government introduced a new digital skills entitlement, giving adults with low or no digital skills in England free access to new digital skills qualifications based on employer-supported national standards. The UK Government continues to work with local leaders to develop Local Digital Skills Partnerships. These collaborative partnerships are now operating in seven regions across England, with an eighth formally launching in Hull and East Yorkshire in early March. The UK Government will work with devolved administrations to consider how best to share the insights and evaluation of the programme to help build digital skills capability across the UK.

UK Wireless Infrastructure Strategy (April 2023)

The UK Wireless Infrastructure Strategy, published in April 2023 aims to achieve the objectives that have been set out by the UK Government. The next decade will see seismic changes both in terms of what wireless connectivity can deliver and how we can use it. The economic and social benefits from these changes promise to be vast, from supercharging growth to accelerating our transition to net zero. But these benefits can only be achieved with concerted action from government, industry, and others. This strategy sets out the Government plan to do that.

In the last 5 years, UK government policies have driven impressive progress in the deployment of world class fixed and wireless networks across the whole of the UK, removing regulatory and practical barriers to deliver stronger growth, more jobs, and better public services in every corner of the country.

- through our £1 billion deal with the mobile network operators, we are supporting rural communities by ensuring that 95% of the UK landmass have 4G coverage by 2025. This currently stands at 92%
- we have made substantial progress with 5G, too. Last year, we met our ambition for the majority of the population to have access to a 5G signal by 2027 5 years early through the deployment of basic, non-standalone 5G using existing 4G networks to deliver increased network capacity.

By building world-class, secure digital infrastructure networks, the Government can meet its vision they set out in their Digital Strategy for a competitive and innovative digital economy. This will play an important role in:

- **underpinning other new technologies** - the next decade will see the development and maturation of transformative technologies from AI and self-driving vehicles to digital twins, which will drive demand for advanced wireless connectivity.

- **transforming public services** - there are also significant benefits for improving our public services, supporting smart cities which are cleaner and less congested and delivering connectivity to our schools and hospitals that will provide better, more interactive lessons and personalised healthcare.

By transforming our economy, widespread adoption of 5G can bring a cumulative productivity benefit of £159 billion by 2035, driving growth and inward investment, and improving lives for communities in every corner of the country.

However, there are challenges we need to address to ensure the UK can realise these benefits, as the economics of investing in wireless networks are changing:

- There is still need to overcome uncertain demand for 5G-enabled services and continuing practical barriers to network deployment need to be overcome.
- Many of the economic benefits we have identified require significantly higher quality connectivity than is likely to be deployed in national public networks.
- 5G roll-out in the near term is likely to focus on urban areas, where the commercial returns are more certain.
- Research we commissioned shows significant variation in the quality of mobile coverage in different parts of the country over the next decade - economically important areas like Freeports and industrial parks could be underserved.

Market dynamics are also changing:

- **Demand is uncertain** as connectivity moves beyond smartphones to enable an array of new, innovative use cases, businesses and the public sector will need to navigate an increasingly complex ecosystem to get the connectivity they require. As many businesses and local authorities do not yet clearly understand the benefits 5G offers or how they can effectively deploy 5G-enabled services to realise these benefits, there is no clear articulation of the demand for higher quality services. In turn, this makes it more challenging for providers to make the business case for investment.

Through this strategy, the UK government set out a new policy framework with 6 key steps to do just that and ensuring that the UK maximises the potential of advanced wireless networks over the next decade, securing our international competitiveness for the future and driving economic growth across the UK.

1. Ensuring good connectivity for all

As networks are upgraded with 5G technologies over the next decade, 4G will continue to play an important, albeit diminishing, role in providing mobile connectivity across the UK.

Coverage reporting also needs to improve so that it more accurately reflects consumers' actual experience, equipping them with the information they need to choose the right contract. In turn, we expect this to drive further commercial investment to address previously

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unidentified gaps - ensuring that people and businesses get the connectivity they need, whether to start and grow a business or to have a remote healthcare appointment.

2. Setting a bold 2030 ambition

Given the substantial potential that 5G offers for businesses and public service delivery, we are setting out a bold vision for the next generation of our national networks to galvanise investment across our economy. We want to move beyond the basic 5G that is being deployed now over 4G networks to build higher quality, standalone 5G networks that do not rely on older infrastructure. We also want to extend 5G coverage well beyond cities and towns to all populated areas of the UK, including rural villages and communities.

'We are therefore setting a new headline ambition for the UK to have nationwide coverage of standalone 5G to all populated areas by 2030.'

3. Strengthening the investment climate

While the government already has a range of policies in place to drive forward the deployment of digital infrastructure, our 2030 ambition requires significant commercial investment.

This includes:

- Continuing to remove practical barriers to the deployment of 5G infrastructure.

4. Realising the full benefits of 5G

We want people, business and public services across the UK to realise the full benefits of 5G and advanced wireless connectivity. However, without concerted action, this will be slow to materialise and limited to larger businesses, in fewer sectors, and in certain geographies.

Supporting places to attract investment: we set out how we will drive greater opportunities for industry and public service providers to be empowered customers for future connectivity solutions – supporting places to attract investment and encouraging adoption of 5G services.

We will do this by:

- Driving local leadership and coordination and encouraging local authorities across the UK to employ digital champions to provide strategic leadership for local authorities' own digital infrastructure strategies.

There are 5 chapters which outline the aims and ambitions, along with the steps the government are going to take in order to achieve their set targets and provide improved 5G connectivity for all.

Chapter 1 - Approach and scope

This strategy sets out a policy framework to help deliver the government's priority of growing the economy and to ensure the UK benefits from advances in wireless connectivity for the next decade.

Chapter 2 – Ensuring good connectivity across rural and urban areas.

The government's priority to build a better, more secure, more prosperous future for the UK includes a clear commitment to grow the economy and create better-paid jobs and opportunity right across the country. To do this, it is vital that people who live and work in all parts of the UK, including in rural areas, have access to good quality mobile and broadband coverage.

Chapter 3: Our 2030 ambition

World-class digital infrastructure underpins the digital economy – it was worth £143 billion in 2021, accounting for 5% of the national workforce. This infrastructure provides the backbone of the UK economy and society with ever more jobs, public services and societal interactions built upon its foundations. As growth in the digital sector is nearly six times faster than across the economy as a whole, its importance will only continue to increase as we deliver the Prime Minister's priority of growing the economy.

4G technology revolutionised the way people use their mobile phones. What today is considered normal, a decade ago was ground-breaking. We have seen the growth of streaming services, like Netflix and Spotify, and gained constant access to high quality, user-produced content for free on platforms like YouTube, transformed the way we shop online, travel around cities through access to apps like Uber and Bolt and use public services, such as booking NHS appointments through apps.

The evolution of 5G

While 4G will continue to play an important role in providing widespread geographic connectivity to consumers through public cellular networks across the UK's landmass, 5G can offer significantly better performance and support a far greater range of use cases. 5G enables data transfer speeds of more than 10 times faster than 4G, has the potential to offer lower latency and greater reliability and the ability to connect more devices. The implications of these improvements reach far beyond the potential to develop the capabilities of smartphones, enabling an array of innovative use cases and providing for transformative economic, and social benefits that were perhaps unimaginable a decade ago.

The government's ambition for the majority of the population to have access to a 5G signal by 2027 has been met early through the deployment of basic, or non-stand alone, 5G which is built on a 4G core network. While this has helped MNOs increase the capacity of their networks in more densely populated areas, it does not reflect the full functionality 5G can deliver.

Without clear action, the market for advanced 5G services will remain nascent as many business and public services do not yet fully understand the benefits or how to navigate the supplier ecosystem for 5G enabled digital products, applications and services.

We want high quality coverage to extend well beyond cities and larger towns to all populated areas of the UK, including villages and rural communities. ***We are therefore setting a stretching new ambition of nationwide coverage of standalone 5G to all populated areas of the UK by 2030*** *(emphasis added)*.

Chapter 4: Strengthening the investment environment.

Our 2030 ambition requires commercial investment, and this chapter focuses on creating the environment to support it.

The deployment of standalone 5G and ultimately advanced will require operators to deploy additional infrastructure, including:

- 5G core networks in addition to the 5G equipment in the radio access network
- upgrades to the existing grid of approximately 18,000 macro cell sites per MNO
- additional cell sites to provide 'infill' to cover gaps in coverage

Addressing barriers to deployment

Since the publication of the Future Telecoms Infrastructure Review, the government have taken significant strides to make it quicker and easier for operators to roll out new digital infrastructure including making reforms to the planning system to support the deployment of 5G and extend mobile coverage in England.

Chapter 5 – Realising the full benefits of 5G and advanced wireless connectivity.

5G and other forms of advanced wireless connectivity pave the way for new services and applications that can have a transformative effect on our public services, businesses and our local economies, delivering this government's priority of growing the economy and creating better paid jobs. Wireless connectivity can support mobile healthcare workers and connected vehicles, improve traffic flow through our cities and enable our factories to be more productive, supporting the fourth industrial revolution. Our evidence is clear that the most significant economic benefits from 5G will come from widespread adoption of advanced 5G by industrial sectors, including manufacturing and logistics, and by public services.

The government is determined that the UK should take full advantage of these opportunities, but this will only be possible if places across the country can attract commercial investment in 5G and other forms of advanced wireless connectivity and for that to be adopted at scale by businesses and public services.

Connected places.

Improving digital connectivity is one of the government's Levelling Up Missions. We want places and communities across the UK to share in the benefits of good connectivity, enriching lives and driving local growth.

We want to support connected places with their digital connectivity ambitions. **We will do this by helping regions and local authorities to build the case for adopting new technology, attracting investment and removing practical barriers to the deployment of advanced wireless networks** (*emphasis added*). Local and regional authorities play a pivotal role in facilitating the rollout of wireless connectivity and their role will become more critical than ever as investment in 5G continues, due to its technological complexity and the vast number of new applications and services it can support.

Local leadership and coordination

Local leadership can help to identify and break down barriers to deployment at a local level by bringing together stakeholders across the public sector and building strong relationships with industry. The installation of telecoms infrastructure involves a number of different local government departments (such as ***planning***, estates, ***highways***) and their activities can be siloed and uncoordinated.

It is essential that, at a leadership level, local and regional authorities recognise the importance of wireless connectivity and identify decision-makers within the organisation who are empowered to facilitate private sector investment.

Chapter 6: Driving adoption in key economic sectors.

Adoption of 5G-enabled use cases in sectors such as healthcare, transport & logistics, manufacturing and agriculture will drive economic growth and productivity across the UK, delivering our priority of economic growth.

Key features of 5G for industry Dedicated 5G networks can enable:

- data analytics: Utilising operational and environmental sensor data to make real time decisions about equipment and operational performance.
- video surveillance and geolocation: Providing the location of workers and assets for security and safety purposes.
- tracking moving assets: Working with self-driving vehicle technology and software guidance systems to provide situational awareness of mobile assets.
- automation: Enabling independently operating robots to perform operational tasks.

Planning Assessment

The main issues arising from this prior approval notification are whether the proposed mast and antennas due to their scale and siting would be a visually obtrusive feature which would be detrimental to the character and appearance of the area. Whether any perceived harm

would outweigh the significant social and economic benefits associated with the increased service provision attributed to the proposal and other valid material considerations as outlined NPPF, which fully supports the roll out of 5G and the next generation connectivity to accelerate business opportunities and growth to ensure the economy is resilient and competitive, the relevant policies from the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint.

The monopole and associated antennas fully comply with the Policy DC 17.1 of the Manchester UDP, and the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint it will increase overall connectivity for the area of Levenshulme. Access to a high quality, reliable superfast mobile network is not just 'a nice to have' but an essential part of everyday life. Indeed many, including the former Minister for Digital Infrastructure Matt Warman, consider it to be the fourth utility service as important as gas, water and electricity, a lifeline for many especially during the COVID-19 pandemic where people were able to see their loved ones, speak to friends and family and arrange virtual meetings allowing some form of normality in a very abnormal situation.

The principle of development has been established by the Government when the new permitted development rights came into force in November 2016, which enabled sites such as this one to be built under the operators permitted development rights, with prior approval for siting and appearance being the only matters that the local planning authority can take into consideration.

Planning Practice Guidance explains how a prior approval application differs from a planning application at paragraph 28. It states that:

> *'The statutory requirements relating to prior approval are much less prescriptive than those relating to planning applications. This is deliberate, as prior approval is a light-touch process which applies where the principle of the development has already been established* (emphasis added). *Where no specific procedure is provided in the General Permitted Development Order, local planning authorities have discretion on what processes they put in place. It is important that a local planning authority does not impose unnecessarily onerous requirements on developers and does not seek to replicate the planning application system'* (emphasis added).

The Planning Portal also provides Application Type Guidance. This guidance states that:

'Certain forms of telecommunication development, for example, mobile telephone masts, are known as 'permitted development' and subject to prior approval from the local planning authority. The prior approval procedure means that the principle of development is not an issue. The LPA can only consider the siting and appearance of the proposal'.

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Siting

The siting of the proposed radio base station has been carefully considered. Furthermore, there are a plethora of existing vertical elements of street furniture in the immediate vicinity, including lighting columns, fence netting, floodlights and another operator's radio base station, as well as semi-mature and mature trees. Consequently, the visual impact of the proposed radio base station will be minimised within the street scene as the proposed monopole will assimilate well with the existing vertical structures already in situ in the immediate locale. The site will be located on a footway of Manor Road located in a distance from any residential properties, when looking from various vantage points it will be seen in a context of other vertical street furniture elements, as well as semi-mature and mature trees. Additionally, there is plethora of other vertical elements of street furniture which will help the proposed radio base station to assimilate in the surrounding area. This is in full accordance with the aspirations of the Manchester UDP, the NPPF, and the Code of Practice.

The NPPF was updated in December 2023, in order to strengthen sections including requirements on improved design quality, a new requirement for Councils to produce local design codes or guides, an emphasis on using trees in new developments, revised policies on plan-making, removing statues and opting out of PD rights relating to residential conversions. Furthermore, the revised Code of Practice (March 2022) at Para 29 states that placing a mast within or adjacent to an existing group of trees, vegetation and other natural features can reduce visual impact. Care should be taken to minimise the unnecessary loss of existing trees, though antennas will need to be sufficiently elevated to clear the treeline and the trees may need to be maintained to prevent growth above a certain level. Both the NPPF and Code of Practice recognise the importance of improved connectivity whilst utilising existing trees to provide a screen and backdrop for the proposed monopole. Therefore, this proposal is in accordance with the updated NPPF and revised Code of Practice.

If the monopole were to be reduced in height, then the antennas would not be able to clear the surrounding buildings and urban clutter as such would not be able to operate effectively. A lower height would lead to a poor user experience for a large part of the target coverage area. As such, this would fail the operators design brief, and an additional installation would have to be found leading to the proliferation of masts contrary to national planning guidance contained in the NPPF.

The proposed equipment cabinets do not require planning permission, as they can be installed under the operators permitted development rights once the radio base station is built. In order to remain fully transparent, they have been included on the plans and in the description. The operator's equipment cabinets are similar to those of other statutory undertakers which are commonplace in urban areas. Their limited height and scale will ensure that these cabinets will not be detrimental to the visual amenity of the area.

In line with the requirements of NPPF, there are no existing suitable telecommunications installations for the operator to share, that would provide the necessary coverage to the target coverage area. Similarly, there are no buildings which are suitable and available that the operator could utilise to operate their equipment. Thus, an additional installation is

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required in order to provide improved coverage and capacity to this area of Levenshulme. Therefore, a new ground-based installation is required.

Capacity refers to the maximum amount of data a network can handle and the number of devices it can support simultaneously. When too many devices try to connect to the network, it can become overloaded, leading to issues like slow internet speeds and dropped calls. This is similar to a highway getting congested when there are too many cars. Even if there is coverage in the area, the network will not operate properly if there are issues with capacity. This means that while your device may show a strong signal, the network can still struggle to deliver fast and reliable service if it is unable to manage the high demand.

4G signals by their very nature (as they carry high data rates) do not penetrate over long distances, (5G even less so), just a few hundred metres, depending on the topography of the land, building clutter and vegetation including trees in the area which can reduce their effectiveness. Therefore, 4G and 5G radio base stations need to be close to their customer demand. Therefore, they require a new site to provide improved 2G, 4G and 5G coverage and capacity service provision to this cell area. As this site needs to fill a gap in the operator's network, whose network configuration is well established in the area, the operator's search area is naturally smaller, than would otherwise be the case if the operator wasn't already providing service provision from this location. This severely limits the options for siting a new installation in the area.

As Section 5 above demonstrates there are no more suitable sites that are located within less sensitive locations than the current proposed site, and, as this is a site to fill a gap in the operator's network, therefore, the operator is even more restricted in locating a more suitable site in which to provide new coverage to the target coverage area in this part of Levenshulme. A streetworks installation is the most viable option in this area due to the low-lying rooftops, varying topography and residential nature of the area to the west of the site which would not suit either a rooftop or greenfield installation.

As radio base stations must provide coverage on the operator's network, their siting options are limited by technical constraints. Therefore, even if there are sites within the search area that could potentially have a smaller visual impact on public amenity, they might not be suitable from an operational perspective. This was recognised by the Inspector in a recent appeal (Ref: APP/C5690/W/23/3334595). In paragraph 13, the Inspector stated: "…*Whilst there may be sites which are better sited in respect of character and appearance as well as amenity considerations, there is little point in assessing those sites if they do not meet operational requirements to support high quality communications*…".

Without this site, customers would experience buffering and dropped calls, and they would not be able to utilise their handheld devices in the way for which they were purchased.

In line with NPPF, the proposed installation is an item of essential infrastructure and therefore will not cause any loss of privacy nor will any occupants of nearby properties be overlooked. The column and antennas do not emit any noise, odour, vibration, artificial light or disturbance from air. The only noise emitted is from a cooling fan within the equipment

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cabinets, which only operate during hot weather conditions. However, within a few metres the noise is inaudible, particularly when taking into account the ambient noise levels of the area which include passing traffic. The proposed installation will not cause any traffic generation as it is not a visitor destination. Maintenance of the equipment cabinets is usually once a year, where the engineer can walk to site with handheld tools.

Appearance

The design of the monopole has been carefully considered. To this end, it is a simple, functional slim-line monopole, with the main column being split into two sections. This column width is essential in order to safely support the antennas at the top of the column and the feeders for all technologies which are hidden within the main column. The column is proposed to be painted goose grey, in order to match other elements of street furniture, as well as to blend with the often-grey British sky. However, the monopole can be painted any colour should the Local Planning Authority consider that an alternative colour would be more appropriate.

In order to reduce the visual impact on the surrounding area the antennas have been positioned at the top of the monopole. The antennas are positioned as tight as possible and will only be marginally wider than the main column width, rather than being a bulky headframe, as such will not appear dissimilar to a shrouded design. This is in full accordance with NPPF, and the Manchester UDP.

Government guidance states that in order to limit visual intrusion, the number of radio and telecommunication masts and the sites should be kept to a minimum consistent with the needs of consumers, the efficient operation of the network and providing reasonable capacity for future expansion. Use of existing masts, buildings and other structures for new electronic communications capability should be encouraged. Where new sites are required, equipment should be sympathetically designed and camouflaged where appropriate. The proposed installation complies with this policy requirement.

As Section 5 above demonstrates there are no more suitable sites that are located within less sensitive locations than the current proposed site, and, as this site need to fill a gap in the operator's network, the operator is even more restricted in locating a more suitable site in which to provide coverage and improved capacity to the target area in this part of Levenshulme.

It is essential that the 5G antennas are unshrouded. As the radio frequencies get higher, required for data carrying, the antennas are less able to propagate through immediate blockages including Glass Reinforced Plastic, which is what the shroud is made from. This affects the 5G antennas more so than any other technology. The result being they cannot operate effectively close to Glass Reinforced Plastic or any other blocking material. Therefore, there is a technical reason why the 5G antennas need to be unshrouded. The latest 4G technology are also affected more so than older technologies by propagation and are therefore less efficient if they are shrouded. As such, the antennas also are proposed to be

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unshrouded to ensure that the latest technologies are provided to the surrounding area, helping Levenshulme, and Greater Manchester to become the smart city-region.

The presence of the linear structures including lighting columns, fence netting, floodlights and another operator's radio base station, as well as semi-mature and mature trees will ensure that the proposed column will not appear incongruous within the street scene. Thus, there will be no detrimental loss of visual amenity to the area or environmental intrusion in line with the Manchester UDP.

The installation of this 20m slim-line column is designed to be as similar as possible to the other linear structures found in the immediate area will be no more at odds with the street scene and character of the area than the other vertical structures within the immediate locale.

It is accepted that the height of the proposed installation is taller than other pieces of surrounding linear items of street furniture. Being taller than more traditional urban items of street furniture in itself is not a valid reason to conclude that it is not appropriate at a specific location. Indeed, Inspectors at appeal have noted that by their very nature to be effective masts are required to be taller than surrounding structures and that telecommunications masts are now common urban items of street furniture.

Telecommunications apparatus by their very nature must be taller than surrounding built and natural form to ensure its efficient operation. To suggest that it is inappropriate development because it is taller than adjacent lighting columns or road signage is no more relevant than suggesting that street lighting columns are inappropriate because they are taller than road signage or traffic lights. They are all essential pieces of infrastructure within a street scene that carry out differing functions and therefore cannot be considered on the same merits. Should a street lighting column be capable of the provision of high quality 2G, 4G and 5G telecommunication services for the operator then this would be a reasonable consideration, but this is clearly not the case. As such, the proposal should not be considered negatively due to it being taller per se than other vertical structures. Reasonable consideration of the proposal in the context of nearby street furniture can only conclude that the presence of other vertical structures in the immediate area only seeks to provide a setting wherein a base station may appear more congruous from which to provide an important service to a wider area.

This is a prior approval application where the principle of this type of development is already established by the Government under the Town and Country Planning (GPD) Order 2015 (as amended) which states that this type of development is permitted subject to the prior approval of the siting and appearance of the installation. This is therefore akin to an outline planning permission. There is nothing in the legislation which limits the number of installations that can be erected in a certain locality, nor that they cannot be located on transport corridors. Given the nature of the area which contains numerous vertical structures and semi-mature and mature trees in a wider area, the proposed radio base station would not appear prominent nor out of place.

It is also noted that under the operators permitted development rights existing columns can be replaced with new structures up to 20m in height with the submission of a license notification to the Council. This demonstrates that the Government considers that 20m streetworks columns are acceptable without the need to obtain further permission from the Council for their installation. Furthermore, on non-designated sites not on the highway, but which could be located next to the highway, existing sites can be replaced with installations up to 25m in height without the need for further planning permission from the Council, under the operators permitted development rights. Further emphasising the point that the Government is not concerned with column heights up to 25m on highway locations per se.

NPPF states at paragraph 120 the number of radio and electronic communications masts, and the sites for such installations, should be kept to a minimum consistent with the needs of consumers, the efficient operation of the network and providing reasonable capacity for future expansion. In order to provide improved latest 4G technology and 5G service in this locality, a new site is required in order to provide improved latest technologies to the surrounding area. The operator has already explained above, it is unable to shroud the antennas, but the design is as slim as possible and will represent a simple, functional, vertical structure in the street scene similar to the existing lighting columns and other elements of the street furniture.

If the column were to be any slimmer, then the multi technologies would not be able to fit in the same installation and an additional radio base station would be required which would be contrary to national planning guidance. It would also not be structurally capable of supporting all the technologies including the latest 4G coverage as well as 5G service provision for VMO2. If the column were to be the same width throughout, then it would have to be as wide as the antennas at the top of the column. This would appear more visually prominent in the street scene than the current proposals.

The design of the radio base station is one of the most sensitive designs available to the operators, designed to resemble typical existing urban linear street furniture. This is in line with the requirements of NPPF which supports equipment which is sympathetically designed and camouflaged where appropriate [paragraph 120], and the Code of Practice.

The proposed new site accords with NPPF because the equipment will resemble other linear structures within the area and will expand the network, ensure high quality communications infrastructure is maintained whilst minimising the number of radio base stations in the area. Placing masts near similar structures such as lighting columns, utilising simple and unfussy designs is acknowledged in the Code of Practice for Mobile Network Development in England to be less likely to dominate and be in discord with the street scene and as a result less likely to have a detrimental impact on the visual amenity of the surrounding area.

Lack of Coverage – Material Consideration

In accordance with the NPPF, the proposed installation is significant to enable continuous coverage of the telecommunication network, ensuring that this area of Levenshulme continues to get the mobile coverage it needs for VMO2 customers as well as new 5G

coverage. It will also maintain and improve coverage for the Mobile Virtual Network Operator's (MVNOs) which use the VMO2 network which includes Giffgaff, Sky Mobile and Tesco Mobile. So, the proposal will not only provide a service for one operator but those who buy network space off them, which is at least 3 with VMO". This will provide a choice for those customers who consider the level of coverage in their area when selecting which operator, they agree future contracts with.

The current proposals will facilitate the development of an advanced broadband telecommunications infrastructure in line with National Government guidance contained within the NPPF which supports infrastructure especially where growth takes place. By providing the latest 4G technology and new 5G service provision the proposals will also help meet the aspiration of the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint. The proposed installation will help to meet the aspiration of the Greater Manchester Local Industrial Strategy is for Greater Manchester to create 21st century city-region with extreme digital connectivity, clean and inclusive growth.

Trials have already begun across the UK to demonstrate the potential of 5G and how it can improve and drive productivity and efficiency. In June 2019, West Midlands 5G partnered with BT and University Hospitals Birmingham to trial the UK's first 5G Connected Ambulance. Real-Time communications between the paramedics and the hospital doctors enabled the effective diagnosis of the patient at an early stage of care. The trial showed how a paramedic performed a remote-controlled ultra-sound scan on a patient in an ambulance over a public 5G network. These trials show how digital connectivity, and technology can reduce patient waiting times and save lives (Source: WM5G).

In line with the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint, which fully supports the development of 5G, the proposals will provide world-class connections and access to opportunity for all in this cell area, as well as providing world-class digital infrastructure which provides the platform for Levenshulme to embrace emerging technologies and societal changes. 5G infrastructure is fundamental to enable digital technologies to function. The proposals will ensure that any VMO2 customer in this cell area will be able to access resilient, seamless connectivity at a speed they need anywhere at any time. Without the more basic technology solutions such as 5G, smart city-region solutions and value-added outcomes will struggle to be brought to fruition.

Mobiles can only work with a network of base stations in place where people want to use their mobile phones or other wireless devices. Without base stations, the mobile phones and other devices we rely on simply won't work.

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Without this new radio base station, the operator's customers would experience increasing numbers of dropped calls and buffering unable to access the internet on their handheld devices. They would also not be able to access the 5G network, a demand which is increasing rapidly as customers update their handheld devices to ones that are 5G compatible. If the improved 5G network is not available, then the customers' would not be able to utilise these handheld devices for the purposes in which they were purchased. This would be contrary to the aspirations of Central Government which aspires to everyone having access to the superfast highway network wherever they are.

In accordance with the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint, the proposed installation will help improve the area's economic prosperity, strengthen the urban economy's by supporting local businesses to start, grow, adapt and diversify. It will support a better environment for today and tomorrow by reducing the need to travel and in turn minimise carbon emissions. The radio base station will support the delivery of healthcare provision and accessibility by enabling people greater access to online services, NHS appointment reminders, reminders to take medicines, make appointments etc. As well as assisting hospital outpatient appointments and emergency consultations carried out remotely via video link, connected ambulances, live streaming of CCTV footage etc.

By enhancing the 2G, 4G and 5G service provision to the surrounding area, this would fully support the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint.

The way 5G works, it is closely connected with the Smart City agenda and will enable centralised control of lots of different street infrastructure owned or managed by councils, such as streetlights, water meters and bus stops. As such it needs the 21st century infrastructure to enable this objective to become a reality. A new installation in this location enabling enhanced 4G and 5G service provision to the Levenshulme area will ensure that this aspiration is fully met.

The Councillor's Guide to Digital Connectivity notes that a survey conducted by the Confederation of British Industry found that 81% of firms said that they see more reliable mobile connectivity as essential. Studies have also shown that mobile broadband is associated with positive impacts nationally, such as higher GDP and increased employment.

Therefore, the Government fully supports high quality communications infrastructure, even more so with the advent of 5G. The NPPF continues to strongly support telecommunications connectivity and states at paragraph 119 that local planning authorities should support the expansion of electronic communications networks. It acknowledges that advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being.

The demand for mobile data in the UK is increasing rapidly, and as households and businesses become increasingly reliant on mobile connectivity, the infrastructure must be in place to ensure supply does not become a constraint on future demand.

An installation in this location will help to fix current issues with capacity in the area and enable VMO2 and MVNOs who buy network space off VMO2 to maintain access to their handheld devices wherever they are for the purposes in which they were purchased. This is fully in line with the Government's aspirations that everyone has access to the superfast communications network, the NPPF.

Access to the internet in whatever medium now impacts every facet of our lives but only benefits those who can access and use it. The benefits of internet connectivity are key for both residents and businesses alike and a new radio base station in this location providing the enhanced 2G, 4G and 5G technologies will support the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint.

In line with guidance contained within the NPPF, a new radio base station in this location will enable fast, reliable, secure internet accessibility wherever the user is located. An installation in this location would fully meet the latest operators' coverage and capacity requirements for 4G and 5G. This would be wholly in line with the Government's latest aspirations to strongly support advanced, high quality and reliable communications infrastructure, essential for economic growth and social well-being. Where the NPPF notes that decisions should support the expansion of electronic communications networks. An installation outside this search area, regardless of whether there are existing sites, would not allow the operator to provide improved capacity and therefore would not adequately maintain and provide coverage and capacity.

As part of the operators 5G licence obligations, many customers will benefit significantly from a vastly improved service provision in this locality. They will be able to gain access to the very latest technologies and connectivity, including 5G, to high-speed data services, the importance of which is highlighted in the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint. An installation in this location will help Levenshulme and Greater Manchester to meet its ambition of being digitally inclusive.

The Code of Practice acknowledges that upgrading and improving mobile networks will not be possible without the necessary infrastructure on which we rely. With increasing consumer demand and the Government's aspirations for high quality communications infrastructure it is ever more important to improve connectivity and capacity.

The Code of Practice acknowledges that there will be times when there is a need for a new radio base station, where sites have been lost, where areas have limited or no coverage and where coverage and capacity need to be enhanced. This application is one such example where there is a need to provide new and improved 4G and 5G provision within the area.

In the Code of Practice, it acknowledges '*the pressure on networks to upgrade and improve networks through changes to existing sites and the development of new sites is constant. With the increasing consumer demand and the Government's ambitious aspirations it is becoming more important to improve connectivity and capacity. This is due to the ever-increasing demand for data hungry applications to be available to a range of connected devices, such as smartphones and tablet computers. However, The Code notes that upgrading and improving mobile networks will not be possible without the necessary infrastructure on which they rely*'. Therefore, there is a significant need to locate the equipment in this area.

It is therefore imperative that the operator continues to invest in ensuring that the latest technologies are available on its network, so that customers are able to continue to use their handheld devices wherever they are, for whatever reason, for the purposes in which they were purchased.

Economic and Social Benefits

The NPPF strongly supports sustainable development, as does the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint. Mobile communication plays a significant role in sustainable development, being able to access the internet via a mobile device allows people to access a wide range of central and local government services buy groceries, manage finances, apply for jobs/university, and carry out school projects, send emails, download applications, send and receive instant messages, participate in social media, streaming and downloading data to name just a few of the benefits of being able to use an internet enabled handheld device. It also allows people to work from home or on the move without needing to return to the office. Residents and businesses will enjoy better accessibility, assisting home-base working by improving the electronic means of communication and the roll-out of high-speed broadband helping to promote live-work development. This reduces travel time, carbon emissions and increases the speed in which information is processed/shared. The proposals therefore fully comply with NPPF, to minimise the effects of climate change reducing the need to travel and therefore the carbon footprint.

In such instances, as described above, the NPPF supports development that improves the economic, social and environmental conditions in the area. Enhancing the 2G, 4G and 5G coverage and capacity in this area will fully meet this national policy objective. Continuing to transform the digital connectivity of the region to drive economic growth and innovation, working to meet national targets of full roll-out of 5G technology for all populated areas are connected to the 5G network by 2030 will comply with the ambitions of the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester

Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint.

Mobile connectivity is essential to the future success of the economy. The combined value of 4G and 5G mobile connectivity is estimated to add £18.5bn to the economy by 2026 (Councils and Connectivity Sept 2018). Mobile connectivity is essential to creating a better society. Digital inclusion can help people gain employment, become more financially secure and improve health and well-being. Mobile connectivity is essential to fulfilling the potential of new technologies. Innovations such as artificial intelligence and connected cars will change how we work, spend our leisure time and run our public services. There is a demand for mobile connectivity in areas where geography, logistics or economics – or a combination of all 3, make it difficult. Mobile network capacity needs to grow to meet the demand of mobile users, who are consuming ever increasing amounts of data.

Providing the latest digital infrastructure to enable improvements in digital technology empowers and enables residents to have the highest quality of life, supports the creation of high-quality jobs and achieves the maximum productivity levels.

The enclosed Cornerstone Local Authority Engagement Brochure September 2020, emphasises further the benefits of high quality mobile connectivity including: promoting economic growth by attracting investment from business, which creates jobs and regional prosperity in line with national and local economic strategies; helps local businesses to offer a broader range of services, boosting the local economy; helps local Councils to offer online services such as school admissions and local information for residents supports local companies by facilitating working from home, offers social benefits such as being able to connect with vulnerable family and friends (a life line during COVID 19 lockdown) or contact the emergency services 24/7, and helps local councils to offer online services such as paying council tax bills which provides a more efficient service to name but a few benefits.

Practical Applications of 5G Connectivity as Example of Material Socio-Economic Benefit:-

Education

The relationship between 5G and education is evolving at a massive rate with educators exploring the relevance of Virtual Reality (VR) technologies for education and training. Crucially, VR can support remote learning, allowing students a presence in the classroom even when working elsewhere.

5G's ability to deliver real-time information (low latency), ultra-fast speeds (critical for high-definition images and video), increased capacity and heightened security will also allow learning on the job, thanks to technologies such as Augmented Reality (AR) goggles, which can give engineers real-time instructions on how to fix a machine on a production line, for example.

Health

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Patients across the country are now becoming accustomed to relying on remote healthcare services such as NHS 111, virtual GP appointments, and ordering online deliveries of essential medical supplies.

5G will prove critical in providing the infrastructure required to deliver remote health services over the next decade. By design, 5G's ability to deliver real-time information (low latency), ultra-fast speeds (critical for high-definition images and video), increased capacity and heightened security are going to be fundamental in scaling the patient benefits of remote healthcare and keeping medical records secure and private. For instance, trials have shown that connecting ambulance crews to expert resources using 5G allows paramedics to work with doctors and conduct specialist procedures in real time whilst on the road.

There is a demand for mobile connectivity in areas where geography, logistics or economics – or a combination of all 3, make it difficult. Mobile network capacity needs to grow to meet the demand of mobile users, who are consuming ever increasing amounts of data.

Paragraph 38 of the revised NPPF states that:

*'Local planning authorities should approach decisions on proposed development in a positive and creative way. They should use the full range of planning tools available, including…*permission in principle*, and work proactively with applicants to secure developments that will improve the economic, social and environmental conditions of the area. Decision-makers at every level should seek to approve applications for sustainable development where possible'*.

Providing improved 4G and 5G coverage and capacity in this area will fully meet paragraph 38 of the NPPF, as well as the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint.

The social and economic benefits are a significant material consideration which should be weighed against the visual impact associated with a radio base station in this location. HM Treasury outlined such benefits in its report '*Fixing the Foundations: Creating a More Prosperous Nation*' – July 2015. Paragraph 7.1 of the plan stated that reliable and high quality fixed and mobile broadband connections support growth in productivity, efficiency and labour force participation across the whole economy. They enable new and more efficient business processes, access to new markets and support flexible working and working from home.

Paragraph 7.2 goes on to highlight strong support for high quality communications infrastructure. It states

> *'By reducing red tape and barriers to investment, the Government will support the market to deliver the internationally competitive fixed and mobile digital*

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communications infrastructure the UK's businesses need to thrive and grow, and which will enable the UK to remain at the forefront of the digital economy. The Government is working with business so that the market can play the lead role in delivering against the ambitions set out in the Digital Communications Infrastructure Strategy, published March, of near universal 4G and ultrafast broadband coverage.'

Indeed, MPs have noted in parliament that the UKs Superfast Broadband connectivity was 'relatively poor', and businesses were losing out from patchy coverage.

The Government recognises that widespread coverage of mobile connectivity is essential for people and businesses. People expect to be connected where they live, work, visit and travel. That is why the Government is committed to extending mobile geographical coverage further across the UK, with continuous mobile connectivity provided to all major roads and to being a world leader in 5G.

This will allow everyone in the country to benefit from the economic advantages of widespread mobile coverage. As well as improved mobile signal, 5G networks are also crucial to drive productivity and growth across the sectors that local areas are focusing on through their emerging Local Industrial Strategies which is also acknowledged in the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint. Enabling and planning for 5G implementation is central to achieving the Government's objective to deliver property at the local level and enable all places to share in the proceeds of growth.

The Government is determined to ensure the UK receives the coverage and connectivity it needs. To this end, the Government wants to be a world leader in 5G, the next generation of wireless connectivity, and for communities to benefit from the investments in the new technology. The Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint align with the Government objectives of being a world leader in 5G. The proposed installation will fully support these national and local aspirations.

The case for 5G is compelling as it will bring faster, more responsive and reliable connections than ever before. More than any previous generation of mobile networks, 5G has the potential to improve the way people live, work and travel, and to deliver significant benefits to the economy and industry through the ability to connect more devices to the Internet at the same time, creating the so-called "Internet of Things". This will enable communities to manage traffic flow and control energy usage, monitor patient health remotely, and increase productivity for business and farmers, all through the real-time management of data.

The Local Government Association (LGA) has produced a Councillor's Guide to Digital Connectivity and sets out some of the benefits of 5G technology:

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- Faster mobile broadband and a more consistent experience in congested areas with a very high number of devices.
- Industrial applications, enabling businesses to improve their productivity, for example through predictive maintenance and real-time analytics.
- Internet of Things (IoT) services, many of which will help council's and businesses deliver services more efficiently including:

    - Transport and logistics: connected parcels and fleet tracking.
    - Health and social care.
    - Environmental monitoring: sensors monitoring air quality and water pollution in real-time.
    - Smart agriculture and smart animal farming, smart retailing.
    - Connected and autonomous cars: allowing cars to communicate with each other, other road users and even the road infrastructure.

Further to the Government's commitment to improve connectivity, on 24th November 2016 the new permitted development rights for telecommunication operators came into force, designed to lift the restrictions on mobile operators such is the significance and weight the Government place upon the benefits attached to modern connectivity.

A National Needs Assessment – A Vision for UK Infrastructure was also published in October 2016 (https://www.ice.org.uk/getattachment/media-and-policy/policy/national-needs-assessment-a-vision-for-uk-infrastr/National-Needs-Assessment-PDF-(1).pdf.aspx). It sets out the infrastructure needs for the UK which includes the importance of digital technology. An extract of this assessment can be found below:

> *'A lack of digital connectivity has a detrimental effect on business operations, productivity and output and hence competitiveness in the global market place. Securing digital connectivity is thus critical to the UK's long term prosperity. A key challenge for the digital sector is a persistent digital divide between those who have access to the latest technologies and those who do not, with resulting social and economic exclusion, particularly as dependence on e-services and digital communications increases.'*

The Assessment goes on to note that '*Universal digital connectivity would serve as an equaliser of economic opportunity in that it enables participation in a modern digital economy*'. Therefore, this Needs Assessment further explains the consequences of a lack of coverage and the effects this has on social and economic prosperity. This clearly highlights the importance of maintaining and enhancing high quality 2G, 4G and 5G coverage and capacity in Levenshulme, where the social and economic benefits will outweigh the environmental considerations.

The Government's continued strong support for connectivity is further evidenced by the DCMS who launched their UK wide Digital Connectivity Portal on 20 December 2018. The Digital connectivity portal provides guidance for local authorities and network providers on

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improving connectivity in local areas. The Government wants everyone in the UK to benefit from world-class connectivity no matter where they live, work or travel. The Future Telecommunications Infrastructure Review outlines a package of measures to create the right market and policy conditions to deliver world-class connectivity for citizens and businesses. As a result, the pressure to provide a new radio base station in Levenshulme to provide improved 2G, 4G and 5G capacity is significant.

The proposed installation in this location will allow the operator to provide improved high quality 2G, 4G and 5G coverage and capacity supporting the Government's aim of '*focusing on ensuring that everyone is connected to the information superhighway*'. This fully meets the aspirations of the NPPF, and the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint.

An installation in this location will ensure that the expansion of the electronic communications network is facilitated, and that high quality communications infrastructure is provided to the immediate area. This is in full accordance with the operator's 5G license obligations and the Council's aims and aspirations to be a smart city-region and have high quality 5G infrastructure, promoting and growing the digital sector and increasing digital inclusion.

Summary

The proposed site has been carefully sited on the footway of Manor Road to the north of Greenbank Playing Fields, and south of Greenbank Park. An installation at this location will be located in a distance from any residential properties, with the nearest one being approx. 95m to the west from the site. When looking towards the site from various vantage points it will be seen aligned and in the context of semi-mature and mature trees which will minimise its visual impact.Additionally, there are numerous other vertical structures in the vicinity of the proposed installation including lighting columns, fence netting, floodlights and another operator's radio base station, as well as semi-mature and mature trees. As this is a prior approval application, the Government confirms that this is permitted development, akin to outline planning permission, with just the finer details of siting and appearance to be considered by the local planning authority. The vertical structures help the proposed installation assimilate with the street scene and not appear alien in the immediate area.

The proposed height at 20m is essential in order for the antennas to clear the surrounding urban clutter, trees and ensure the antennas are able to reach the target coverage area, to maintain and provide improved capacity for 2G, 4G and 5G service provision to Levenshulme. This will fully meet the national Governments aim of '*ensuring that everyone is connected to the information superhighway*' and the national policies set out in the NPPF. If the height of the column were to be reduced then the antennas would not be able to operate effectively, leading to a degraded service for the operator's customers especially for the higher frequency technologies including the latest 4G technology and new 5G service.

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The new installation is required to improve capacity of the operator's network in this area. Capacity refers to the maximum amount of data a network can handle and the number of devices it can support simultaneously. When too many devices try to connect to the network, it can become overloaded, leading to issues like slow internet speeds and dropped calls. This is similar to a highway getting congested when there are too many cars. Even if there is coverage in the area, the network will not operate properly if there are issues with capacity. This means that while your device may show a strong signal, the network can still struggle to deliver fast and reliable service if it is unable to manage the high demand.

3G (and eventually 2G) is being switched off by the operators in order to repurpose these radio frequencies for faster more energy-efficient 4G and 5G services. 3G is primarily used for mobile data services. It is being switched off first because it has already largely been superseded by 4G. Hence the importance of providing the latest 4G and new 5G service provision is areas where there is no such coverage. 3G has already been switched off by Vodafone and EE in early 2024, VMO2 is planning to do the same starting from April 2025 and continuing throughout the year. As a result, it is imperative that the operator builds resilience into the network.

Site selection was progressed in accordance with the applicant's licence obligations, advice in the NPPF and the Code of Practice and represents the least environmentally intrusive, technically suitable, available option.

As radio base stations must provide coverage on the operator's network, their siting options are limited by technical constraints. Therefore, even if there are sites within the search area that could potentially have a smaller visual impact on public amenity, they might not be suitable from an operational perspective. This was recognised by the Inspector in a recent appeal (Ref: APP/C5690/W/23/3334595). In paragraph 13, the Inspector stated: "…*Whilst there may be sites which are better sited in respect of character and appearance as well as amenity considerations, there is little point in assessing those sites if they do not meet operational requirements to support high quality communications*…".

The social and economic benefits of providing reliable and high quality mobile broadband connections including 5G support growth in productivity, efficiency and labour force participation across the whole economy. This is fully supported by the NPPF, the Manchester UDP, the Manchester Core Strategy, the Manchester Digital Strategy, the Our Manchester Strategy, the Places for Everyone Joint Development Plan, the Greater Manchester Local Industrial Strategy, the Greater Manchester Infrastructure Framework, and the Greater Manchester Digital Blueprint. These benefits are strong material considerations which outweigh any perceived loss of visual amenity to the surrounding area.

Confirmation that submitted drawings have been checked for accuracy

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