

SUPPLEMENTARY INFORMATION

1. Site Details

Site Name:	Acacia Avenue Shops SW's	Site Address:	Acacia Avenue, Huyton-With-Roby, Knowsley, Liverpool, L36 5TN
National Grid Reference:	E: 343899 & N: 390016		
Site Ref Number:	CS30812900	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?	Yes	No
If no explain why:		
Were industry site databases checked for suitable sites by the operator:	Yes	No
If no explain why:		

Site Specific Pre-application consultation with local planning authority

Was there pre-application contact:	No
Date of pre-application contact:	10/10/2024
Name of contact:	N/A

¹ Macro or Micro

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Summary of outcome/Main issues raised:

Prior to the submission of a formal application, the agent initiates pre-consultation discussions with the local planning authority. This provides an opportunity for the LPA to discuss the proposed siting and design.

A pre-application consultation letter, planning drawings, and copy of consultation plan were sent via email to the LPA on the 10th of October 2024. The LPA replied stating they have a pre-application advice service.

Following a review of the site and the benefit that a written response would provide, it was decided to proceed with the application based on the pre-existing knowledge of the site.

Any pre-application comments received from the assigned Case Officer will be passed on in full to the Applicant for consideration during the determination of the application.

Annual area wide information to planning authority

Has annual area wide information been provided?	No
If no explain why:	
Summary issues raised: Cornerstones commercial relationship with Vodafone has changed, effectively increasing our independence to work with other companies in the deployment of mobile infrastructure. It means we no longer have visibility of Vodafone's full update plan. However, Cornerstone is fully committed to working closely with Local Planning Authorities and following best practice guidance. We aim to engage and work with the planning department at the earliest opportunity from when we are instructed to deliver new infrastructure within your Local Authority area and often conduct strategic pre-rollout engagement meetings to discuss our 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 long term partnerships and will always work with you to deliver improved mobile connectivity.	

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Community Consultation

Rating of Site under Traffic Light Model:	Red	Amber	Green
Outline of consultation carried out: Prior to the submission of the planning application, the agent initiated pre-consultation discussions with the LPA, local ward councillors and the Local MP. This provides an opportunity to discuss the siting and design of the proposed site. Pre-application consultation letters and planning drawings were sent to these parties on the 10th of October 2024 via email. Ward: Roby Councillor Kevin Bannon Councillor Megan Dever Councillor Paul Woodruff Emails: kevin.bannon@knowsley.gov.uk megan.dever@knowsley.gov.uk Paul.Woodruff@knowsley.gov.uk MP for Knowsley Annalise Midgely: anneliese.midgley.mp@parliament.uk			
Summary of outcome/main issues raised (include copies of relevant correspondence): To date, no correspondence has been received			

School/College

Location of site in relation to school/college (include name of school/college): N/A
Outline of consultation carried out with school/college (include evidence of consultation):

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N/A
Summary of outcome/main issues raised (include copies of main correspondence):
N/A

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?	Yes	No
Has the Civil Aviation Authority/Secretary of State for Defence/operator of the civil safeguarding area or defence safeguarding area been notified?	Yes	No
Details of response:		

Developer's Notice

Copy of Developer's Notice enclosed?	Yes	No
Date served:	22 nd October 2024	

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3. Proposed Development

The proposed site:

This proposal is part of an urban densification project to address gaps in high-quality service provision. At present, it is paramount that digital connectivity is supported and maintained throughout the country. In particular, the current massive shift in user demand from city centres and places of work to residential areas and suburbs requires an improvement in coverage and capacity throughout the whole network. In urban areas, where you have a high demand on the network, a greater number of base stations are required to meet the data traffic demand. Furthermore, 4G and 5G signals do not travel as far. Consequently, the spacing of installations will reduce, especially in the urban areas. The existing sites in this area are struggling to cope with demand and an increase in capacity is required; therefore, a new site is required to provide reliable high-quality 4G and 5G technology.

A number of options have been assessed with respect to the site search process and the proposed solution is to erect a new 20 metre pole upon Acacia Avenue, Roby Huyton, Knowsley Liverpool, L36 5TN (E: 343899 & N: 390016) to improve the existing mobile signal offering in the area to provide a '5G' network. The proposed site is a 'streetworks' site on adopted highways land. The site location is indicated in the Site Location Plan attached and in Figure 1 below.

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Figure 1: Site Location Plan

The proposed site is located on the pavement of Acacia Avenue, adjacent to the existing row of shops. The site is situated directly in front of a row of bollards that act as a boundary to a section of land which currently serves as a private car park. The road is subject to a low level of vehicular traffic and for the majority, the land use is residential, excluding the row of commercial properties adjacent to the site. While there is not an abundance of existing street furniture, the siting of the structure helps minimise the overall visual impact of the development.

The site is situated near the junction of Acacia Avenue and Cypress Road, where there is an undulation in the road. This helps to obscure the structure from medium-to-longer range views as the row of shops to the west and the grouping of trees to the east offer some screening from views along Acacia Avenue.

Effect of Siting and Appearance

Technical and operational requirements have dictated the sitting of the proposed equipment. The search area is extremely small due to the nature of the reasoning for the site address a gap in high-quality 4G and 5G service provision. In urban areas, where you have a high demand on the network, a greater number of base stations are required to meet the data traffic demand. The existing sites in this area are

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struggling to cope with demand and an increase in capacity is required; therefore, a new site is required to provide reliable high-quality 4G and 5G technology.

Additionally, the layout of the surrounding built environment presents significant challenges for the location of the site due to the concentration of residential properties, underground services, large trees, unsuitable rooftops, and narrow pavements as well as topography. As a result, there is limited space available that is suitable to accommodate a telecommunications installation both underground (due to services) and above ground.

The siting of the proposed radio base station installation has been carefully considered to minimise visual impact so far as practicable in balance with the technical and operational requirements of the Operator.

Street views of the Application site are provided below to illustrate the proposed site location and visibility.



Figure 2: Streetview of Proposed Site location from north approach at the junction of Acacia Avenue and Cypress Road (Source: Google Street View, 2024).

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Figure 3: Streetview of Proposed Site from south approach on backroad connecting Chestnut Avenue & Cypress Road (Source: Google Streetview 2024).

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Figure 4: Streetview of Proposed Site from east approach along Acacia Avenue (Source: Google Streetview 2024).

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Figure 4: Streetview of Proposed Site from west approach along Acacia Avenue (Source: Google Streetview 2024).

Siting

The site is situated on a wide stretch of pavement near the junction of Acacia Avenue and Cypress Road. The proposed infrastructure is adjacent to a row of commercial properties, a deliberate choice in order to try and keep as far away from residential properties whilst also providing the required amount of coverage to the specific target area. The proposal will have minimal effect on pedestrian access routes. This is achieved through the positioning of the proposed equipment on a comparatively wide stretch of pavement to that of the surrounding area.

The proposed site is the only option within the search area that minimises the impact of development on the nearby residential properties. The site is situated at a junction, adjacent to a row of shops and a vacant portion of land currently being used as a rudimentary car park. The siting of the equipment has been deliberately chosen to ensure the number of residential properties with a clear, front-facing view of the proposed site is kept to an absolute minimum as far as practicable. There are existing vertical structures in close proximity to the site in the form of a couple of tall trees

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reaching approx. 12 metres in height. Whilst it is recognised that the number of trees found at the site is minimal, they do in fact still offer a certain amount of screening. Evidence of this can be seen in **Figure 3** that displays a street view of the proposed site from the southern approach.

The proposed site is situated on Acacia Avenue at a point where the road bends. This helps to conceal the site, making it less visible from medium to-long range distances. This means when entering either end of Acacia Avenue, the telecommunications equipment will not be visible until pedestrians come within a short-range distance of the site.

Design

In bringing forward the proposal, the choice of design has been heavily influenced by structural and technical constraints, the technologies it intends to host, as well as the specific environmental characteristics that influence the proposal's siting and appearance. The proposal has been designed with the core aim of achieving a balance between minimising visual impact and achieving the technical requirements required by the operators and the government.

The proposed height of 20m is necessary to enable the antenna to surmount the clutter of the surrounding environment. Furthermore, new 5G technologies also require a higher minimum mast height, as they operate at higher frequencies, where attenuation of the radio signal is naturally higher, and the effects of clutter are greater. The street pole proposed is the most streamlined and visually sensitive design available to the Operator which can support all the technologies. The pole and cabinets are proposed to be painted grey to assimilate with the skyline and street light columns in the vicinity unless otherwise indicated by the LPA. The cabinets will be joined together so they are as close together as possible, presenting a compact design. The cabinets are proposed to be painted grey (unless otherwise indicated by the LPA). Thus, visual impact will be minimised as far as practicable. The reasoning for choice of design is further described in the subsequent section. The site will bring significant connectivity improvements, which is a material consideration in the judgement of the site suitability. The target area was assessed at the survey stage from the perspective of planning and residential amenity, with a detailed site evaluation, in line with the Local Plan which has helped shape this application.

It is critical to understand that the UK's four Mobile Network Operators (MNOs), including Vodafone all utilise different technology spectrums to provide their mobile service. The spectrums the Operators utilise are allocated by Ofcom, as industry regulators on behalf of UK Government, through licence agreements with each of the individual MNOs. As such, each MNO must utilise the spectrum licenced to them. Each part of the RF spectrum has variations in terms of RF propagation. Therefore, the

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four individual MNO networks, and their sharing arrangements, cannot be compared directly and there will be variations in how all four networks are deployed and developed. For this reason, all MNOs, including Vodafone, have a completely different network configuration they need to fit within and build 5G service around. Therefore, the network has to be built differently, with different antennas and equipment, to take account of those spectrum and licence variations and this will lead to necessary infrastructure variations cell to cell, depending on site specific demand, local constraints and requirements. As such, the various networks will have variations in how their infrastructure is deployed and developed. The height is not considered to outweigh the benefits of the proposal to provide high-quality 4G and 5G coverage to this area of Huyton.

Residential Amenity

The number of properties with a clear, front-facing view of the proposed site has been minimised as far as practicable. The closest residential property to the site is approximately 22 metres north. This particular property does have a front-facing view of the proposed infrastructure however, the existing trees are within the immediate backdrop of the site. The presence of other vertical structures allows a proposal to assimilate more easily with the surrounding context of the area and ultimately appear less incongruous.

When considering the density of residential properties within the surrounding context of the site, the proposed site is the only option that can successfully minimise the number of properties that have a clear front-facing view of the site whilst still providing the required amount of coverage to the target area.

The potential for the proposal to be provided at an alternative site which could minimise impact on residential amenity and meet the network requirement is limited due to the largely residential nature of the search area and as the as the scheme would improve connectivity for the immediate area. Alternative locations considered and discounted are detailed in Section 5 of this report, including considering existing masts and structures. The evidence indicates that there is no other more appropriate location for the proposal that would be away from residences or meets the operational requirements of the operator.

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

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Mobile network operator Vodafone has identified the need to build a new base station installation in the Huyton area. This site will ensure that the latest high-quality 4G and 5G service provision can be provided and that the coverage and capacity requirements are maintained.

The proposed new base station has been sited and designed to provide 4G and 5G coverage, and additional capacity to the network in this area as demand increases. At present, it is paramount that digital connectivity is supported and maintained throughout the country. In particular, the current massive shift in user demand from city centres and place of work to residential areas and suburbs requires an improvement in coverage and capacity throughout the whole network.

Cellular networks are made up of several individual cell areas, each of which has a base station within it. A good analogy for describing a cellular network is that of a patchwork quilt with each cell area being one of the many patches that are sewn together making up the network 'quilt'. The search area for this cell is small and specific. The infrastructure must fit within the overall existing network plan and be located to meet the network requirement.

Figure 6 below shows an overview of the wider context of the site. Highlighted below is the search area for the proposed site within which, indicated by the purple icon, is the radio planner's nominal point. Figure 6 also shows the locations of existing Vodafone cells within the area of Huyton and beyond. This highlights the need for a site at this specific location to properly address the gap in coverage.

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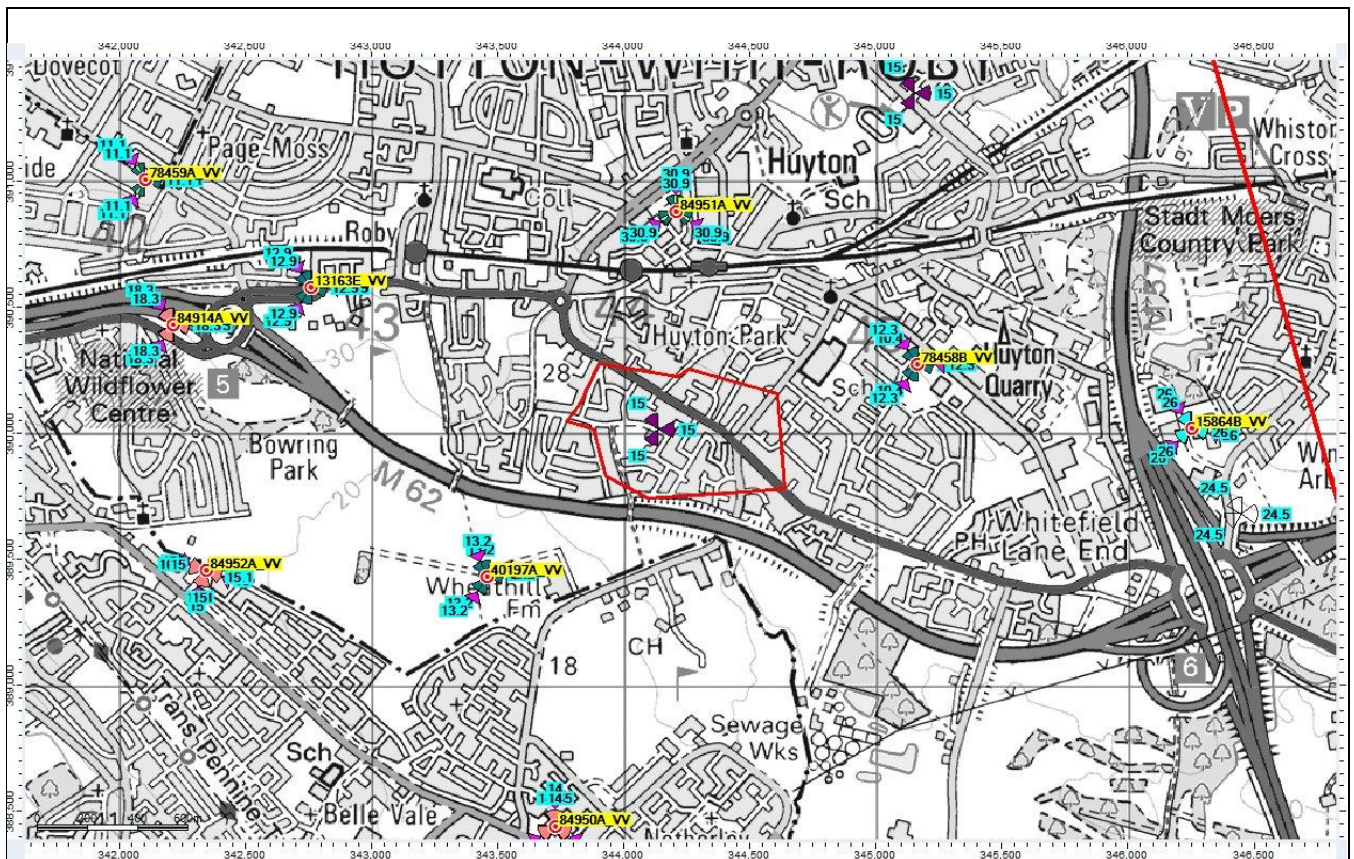


Figure 6: Map showing the locations of existing Vodafone cells in the wider context of the SITE Search Area.

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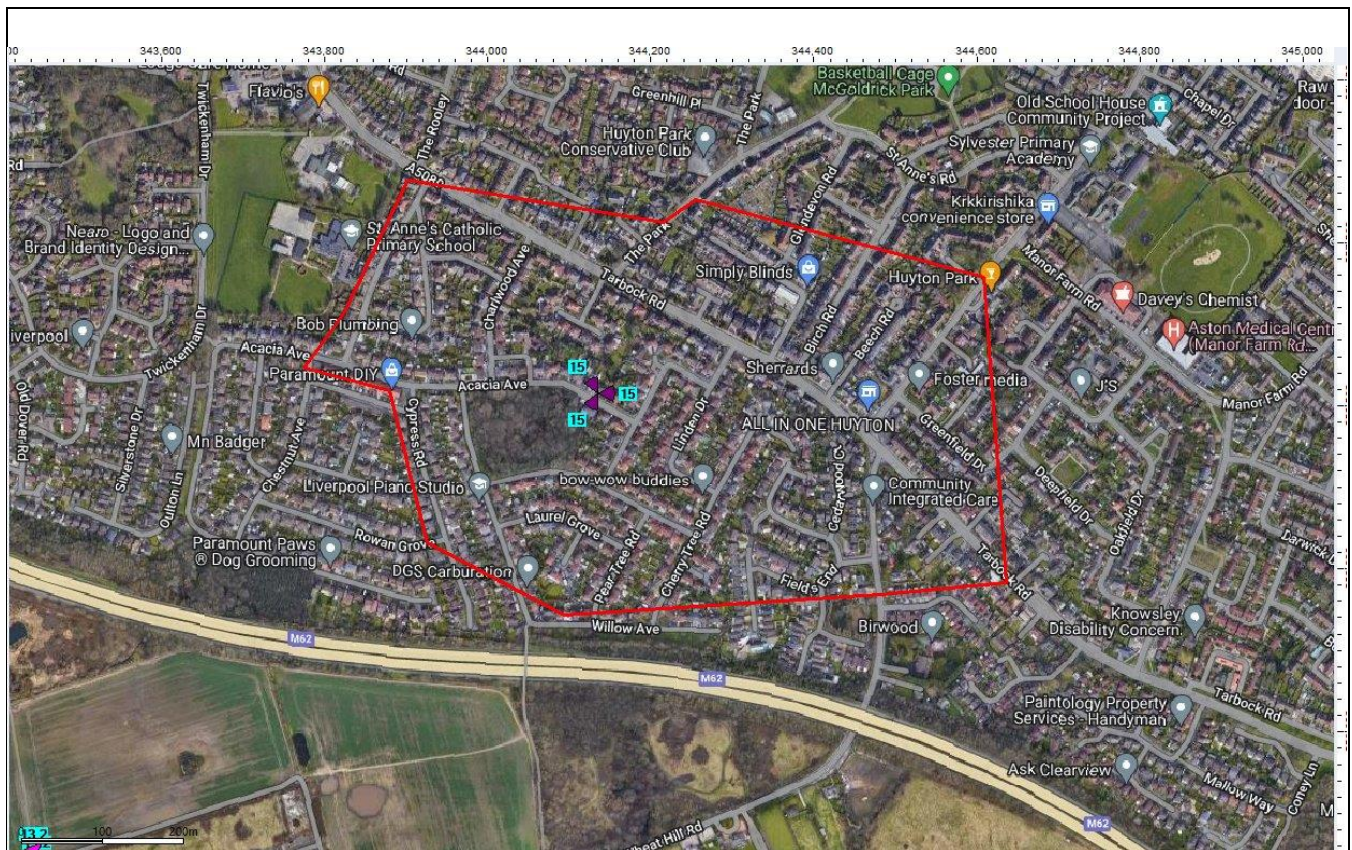


Figure 7: Map showing a close up of the site search area, the nominal point and the location of existing Vodafone cells.

Figure 7 demonstrates the extent of the gap in coverage. Within the surrounding context of the search area, no Vodafone cells exist. The closest, existing Vodafone cell to the search area can just be made out in the bottom left corner of Figure 8. This further highlights the need for a radio base station to be installed at this site.

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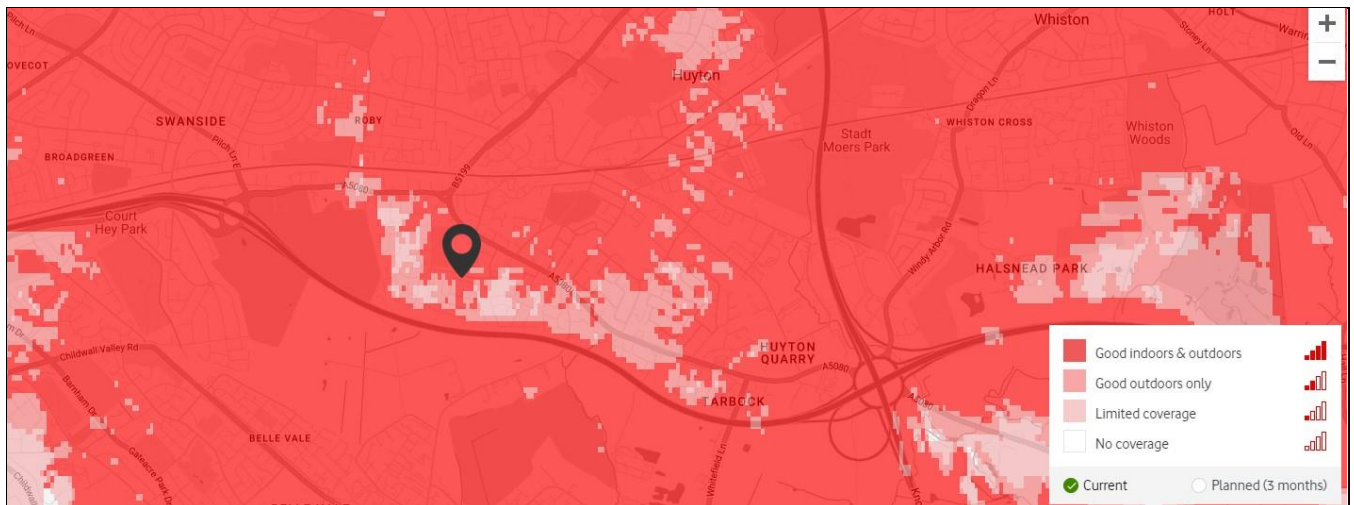


Figure 8: Additional Map showing the existing level of 5G coverage in the area surrounding the proposed site. (Source: [Network Status checker | Check your signal | Vodafone UK](#)).

Figure 8 demonstrates that this specific area of Huyton currently experiences lower levels of coverage than other surrounding areas. This emphasises the need for a radio base station at this location in order to address the current coverage gap.

Type of Structure (e.g. tower, mast, etc):	
Description:	
INSTALLATION OF PROPOSED 20.0M STREETPOLE, SUPPORTING 6NO. ANTENNAS IN TOTAL AND 1NO. 0.3M DISHES TO BE INSTALLED ON DISH SUPPORT POLE, INSTALLATION OF 4NO. EQUIPMENT CABINETS AND ANCILLARY DEVELOPMENT THERETO.	
Overall Height: 20.0m	
Equipment Housing (WxDxH):	
Equipment Cabinet One	2.7.2x0.6x1.72m
Equipment Cabinet Two	0.82x0.66x1.72m
Equipment Cabinet Three	0.60x0.82x1.72m
Meter Cabinet	0.66x0.26x1.22m
Tower/mast etc – type of material and external colour:	Galvanised Steel – Grey (RAL 7035) (Unless otherwise indicated by the LPA during determination discussions)
Equipment housing – type of material and external colour:	Galvanised Steel – Grey (RAL 7035)

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	(Unless otherwise indicated by the LPA during determination discussions)
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Reasons for choice of design, making reference to pre-application responses:

The proposed installation is a Vodafone 20.0 metre streamline street works pole supporting 6No. antennas. The Operator has carefully considered the design of the new proposed column. The Operator is proposing the most sensitive design currently available to the operator to provide necessary network requirement and most up-to-date technologies.

Technical and Operational Constraints

The physics of RF creates technical constraints that must be overcome - this directly dictates siting and design of infrastructure. Higher RF means significantly more data can be transmitted, but it cannot propagate as far or through material as well. It is a necessity that sites are sited directly within or as close to practicably possible to the target service area (search area will be smaller) and are sufficiently tall to see over trees/buildings/topography that will impact propagation. The technical requirements of mobile communication operators such as Vodafone are acknowledged in the National Planning Policy Framework (NPPF) which states that local planning authorities should support electronic communications networks and their provision.

Height

The height of the proposal is 20 metres in order to fulfil technical and operational requirements. These requirements are as follows:

- 1.) **Coverage:** Essential to execute desired coverage area and fit in with the established network pattern, as determined by the network radio planners.
- 2.) **Clutter:** Enable the antennas to surmount the surrounding 'clutter' to avoid interference and impact on mobile signal quality: Features of the surrounding area such as existing buildings, topography and trees referred to as 'clutter' must be cleared so the antenna can 'see over' any obstructions so they do not block the signals from the antennas. Six antennas need to be installed at the top of the monopole to provide 4G and 5G technologies at this location. 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. The 3 upper antennas will provide new 5G service provision. The 3 lower antennas will provide 4G technology for the Operator to the surrounding area. The lower antennas are

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located at 16.75 metres above ground level, thus, if the column were to be any lower, the antennas would not as effectively be able to clear the clutter. The bottom of an antenna should be a) above the top level of the trees, b) allow greater height due to the antenna down tilt at build or for future requirements and c) allow some room for future growth of the trees. This requirement is recognised in the Code of Best Practice:

“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.”

- 3.) **ICNIRP COMPLIANCE:** Ensures compliance with site-and-technology-specific ICNIRP public exposure certifications; and
- 4.) **5G technologies:** New 5G 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. Furthermore, to increase capacity and data speed for users, 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.

Therefore, it is considered that the proposed height and the associated viability of the scheme does not outweigh the overall public benefits of the scheme. The applicant would like to stress that the proposal is seen in the context of the Operator's license requirement and customer obligation to provide and maintain a continued network service.

Pole Design

The proposed pole is the most visually sensitive, slim, and streamline pole currently available to the Operator which can support all the required technologies. It is much easier to assimilate into a streetscape than lattice towers or more traditional monopoles with bulky headframe. The column width is essential to safely support the antennas at the top of the column and the feeders for all four technologies which are hidden within the main column. If the columns width were to be any slimmer the technology would not fit in the one column and another radio base station would be required. This 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

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increase which would appear more visually prominent in the streetscape than the proposed design. The pole is proposed to be painted grey, in order to assimilate with the surrounding context and match the colour of nearby existing equipment cabins. The column can be coloured any other colour the LPA considers appropriate. In comparison to earlier pole designs, antennas are no longer shielded within Glass Reinforced Plastic. This is because the higher frequency 5G antennas are unable to operate effectively through the Glass Reinforced Plastic and as such if these antennas were to be shielded, they would not be able to provide the necessary coverage to the target coverage area.

Site Sharing

The pole is designed for a single operator (Vodafone). The 5G antennas are some 3 times as heavy as previous antennas, while the associated Remote Radio Units (RRUs) also now need to be placed at the top of the pole, thus many streets work designs are no longer structurally capable of hosting all the equipment of 2 operators. It should be noted that the alternative option that could accommodate two operators would be a more traditional 'greenfield' mast, with an open headframe and more bulky design, which would be inappropriate in a street scene location. There is no

Radio Housing Equipment Cabinets

Three equipment cabinets are required to house the equipment used to generate radio signals for 4G and 5G technologies, as well as power and data cables. The equipment cabinets are located as close together, and to the proposed pole, as possible presenting a compact design. The cabinets are proposed to be painted grey (RAL 7035). Again, the cabinets can be coloured any other colour the LPA considers appropriate. Thus, visual impact has been minimised as far as reasonably practicable.

It is therefore considered that the proposed design strikes a good balance between the visual impact of the proposal on the surrounding area and meeting the operator's technical and operational requirements for the site to provide high-quality and highspeed communication infrastructure. Taking all matters into account it is considered that this proposal, would not appear out of place within the streetscape or result in an adverse impact on visual and local residential amenity. It is considered the proposed design, and the associated viability of the scheme does not outweigh the overall public benefits of the scheme. The applicant would like to stress that the proposal is seen in the context of the Operator's license requirement and customer obligation to provide and maintain a continued network service.

Health and Safety - including ICNIRP compliance

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The proposed installation conforms to current government planning guidelines regarding potential health effects arising from telecommunications development. The operator has attached a declaration that the site conforms to ICNIRP guidance. This is in full accordance with NPPF.

Recent court cases have confirmed that the public perception of health risks can be a material consideration within the land-use planning system. The weight to be attached to this issue must be determined accordingly in each case by the decision maker. It has been generally held, and widely established at planning appeal, that health concerns are not a sufficient basis along for withholding planning permission providing it has been demonstrated that the proposed installation will comply with the ICNIRP guidelines.

The publication of the NPPF continues to highlight the Government view that the planning system is not the appropriate mechanism for determining health safeguards. It sends a clear message to local planning authorities in Para. 122 stating they must “determine applications on planning grounds. They should not seek to prevent competition between different operators, question the need for the telecommunications system, or determine health safeguards if the proposal meets International Commission guidelines for public exposure”. This is reiterated in the Code.

Notably, Ofcom have now undertaken 5G audits in the major cities and the results indicate that the exposure levels are a small fraction of the limits. This further reinforces the PHE guidance in respect of 5G which states: “It is possible that there may be an insignificant increase in overall exposure to radio waves when 5G is added to an existing network or in a new area. However, the overall exposure is expected to remain low relative to guidelines and, as such, there should be no consequences for public health.” (<https://www.gov.uk/government/publications/5g-technologiesradio-waves-and-health>).

4. Technical Justification

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

Digital connectivity is vital to enable people to stay connected and businesses to grow. Almost every aspect of everyday life is now increasingly reliant on easy and ubiquitous access to mobile networks. People have an increasing expectation that mobiles will connect them anytime and anywhere, and both private and public sector organisations are increasingly reliant on mobile communications to increase

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efficiency and reduce costs. People want to make voice calls and send text messages, and there is a rapidly burgeoning demand for high-speed data to enable social networking, video streaming, web browsing and many other applications supporting today's social and business needs. Supporting advanced, high quality, and reliable communication infrastructure forms an important pillar to delivering sustainable development and communities.

The Government is committed to supporting investment in advanced, high-quality, and reliable digital connectivity so that it can deliver sustainable economic growth and social wellbeing benefits for the whole of the UK. As the demand for mobile data in the United Kingdom is increasing rapidly, and people and businesses have become increasingly reliant on mobile connectivity, it is essential the infrastructure is in place to keep pace with growing demand, so present and future generations have access to dependable and consistent mobile coverage where they live, work and travel. This increasing demand for mobile connectivity inevitably drives demand for more radio base station sites in all areas. The government's objective is to deliver high quality, reliable wireless infrastructure whilst ensuring the impact of new network development is kept to a minimum.

The licence granted to Vodafone demands that strict coverage qualities are met. It is essential that the benefits of mobile communications are available for all communities. The dynamic nature of technological advances in the telecommunication industry coupled with ever increasing demand from subscribers dictates a continual reinvestment programme on the part of the operators. As a result, and in line with their license requirements, mobile operators are constantly developing their networks.

As part of Vodafone's continued network improvement program, there is a specific requirement for a new radio base station at this location to ensure that the latest high-quality 4G and 5G service provision can be provided at this location and ensure that coverage and capacity requirements are maintained and enhanced

Urban Densification

Operators have committed to use existing structures for network deployment wherever viable to reduce the need for new development and minimise visual impact. However, new ground-based masts will sometimes be required to accommodate the ever-increasing coverage and capacity needs of the country. 4G and 5G require further network densification as they use higher frequencies where signals do not travel as far and need to be located close to customer demand.

4G and 5G are data driven technologies where high volumes of data are transferred between the base station and mobile phone or another device. Each

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base station can only handle a particular amount of data traffic before it becomes saturated, and the service fails. This means where you have high and growing demand on the network, a greater number of base stations are required to meet the data traffic demand. As a consequence, the spacing of installations will reduce, especially in the urban and populated areas, and the operator needs to put an additional base station within an area.

Good connectivity allows people to access a wide range of essential services including emailing; downloading apps; social media; helping with homework; and researching local events. Businesses or transport timetables; managing personal finances; shopping contacting local authorities; arranging medical appointments; general business function; and much, much more.

Further information is contained in the General Background Information for Telecommunications Development document.

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5. Site Selection Process

Mobile Network Operator's use sophisticated planning tools to predict levels of signal strength and coverage from sites for 2G, 3G, 4G and now 5G. Once the Operator has identified a requirement for a new installation, the search process involved an initial 'desktop' survey to ascertain and identify major constraints and impediments, followed by a physical search of the area. The operator's acquisition and survey agents endeavoured to identify a site location which would minimise any potential visual impact. However, the site must be located to provide an acceptable level of coverage both outdoor and indoor, over the intended geographical area, as stipulated by the Radio Planner's nominal point and designated search area (Figure 8). A site outside this search area would not provide the required level of coverage, leading to overlap with other sites nearby and the proliferation of more sites to fill gaps. Furthermore, the site must be buildable - having existing or ready access to a power supply, access to fibre optic cables, an existing vehicular access, and other buildings and development which may provide a level of existing screening.

In accordance with the sequential approach outlined in the National Planning Policy Framework (NPPF) and Code of Practice the following search criteria have been utilised. Firstly, consideration is always given to sharing any existing telecommunication structures in the area, secondly consideration is then given to utilising any suitable existing structures or buildings and thirdly sites for freestanding ground-based installations are investigated.

This sequential approach is outlined below:

- a) Mast and Site Sharing
- b) Existing Buildings Structures
- c) Ground Bases Installations

In compliance with its licence and the sequential approach outlined in the NPPF all attempts to utilise any existing telecommunication structures where they represent the optimum environmental solution have been employed.

a) Mast and Site Sharing

Existing Alternative sites were considered during the primary stages however, no viable alternatives were identified.

This installation is required to provide optimal network coverage and services to a specific target area where there is currently a gap in high-quality service provision. Upgrading existing Vodafone sites would simply result in an overlap of coverage

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and have no effect on the desired target area. Additionally, there are no existing masts or sites in the surrounding area with the capacity to be shared by multiple operators. The extent of technologies required and the nature of the 5G antennas, and the separation required from other items of associated equipment, is such that it cannot utilise some existing structures that provide an installation for another operator. Regardless, even if site sharing was a viable option, there are no existing masts within the search area available to utilise for such development.

b) Building Structures

For a rooftop installation the roof must be flat, of sufficient height with clear lines of sight to neighbouring base stations, be structurally able to accommodate the heavy equipment, have the space to house the equipment, and ideally have existing rooftop access. There are no existing roof tops which are suitable for hosting telecommunications equipment. Therefore, a new ground-based site within the area is required.

c) Ground-Based Installations

A ground-based mast is required.

The following sites were investigated for their potential to accommodate a telecommunications base station installation, however for the reasons detailed below, the locations sought were subsequently discounted in favour of the proposed site.

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Figure 9: Map of Proposed Site, Nominal Point, Search Area and Discounted Options
(Source: [Grid Reference Finder](#)).

Site Type	Site name and address	NGR	Reason for not choosing the site
D1 Streetworks	St John's Intersection Option St John's Road, Huyton Quarry, Huyton, Knowsley, Liverpool, L36 5YY	E: 344479 & N: 389961	Discounted due to the site location as statutory searches failed. STATS suggested the existence of LV/HV, Streetlight, LP/MP Gas and BT. There would not be enough room for the necessary underground equipment at this site and for this reason the option has been discounted.
D2 Greenfield	Grass Verge off Wheat Hill Road Wheat Hill Road/ St John, Huyton Quarry,	E: 344488 & N: 389697	Discounted from a planning perspective due to being situated near to mature trees. While these trees provide natural screening, the trees may be required to be lopped to reduce interference with

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	Huyton, Knowsley, L36 5UR		the antennas. Furthermore, the structure required to surmount the height of the trees, would be visible from the residency east of the site. As such, the impact on visual amenity and trees was considered to be greater than the proposed site.
D3 Streetworks	Flavio Street Option Flavio's Restaurant, 34 Tarbock Road, Huyton, Knowsley, L36 5XW	E: 343806 & N: 390368	This option has been discounted in due to very limited pavement width and the narrowness of the grass verge causing potential accessibility issues as well as being situated beyond the designated search area. Installing a structure here would have a considerable visual impact on the residential amenity of the area. The site is considered to be too exposed with limited screening/backdrop from the parallel properties. The proposed option is more appropriate to deliver the required amount of coverage to the target area.
D4 Greenfield	Acacia Avenue Greenfield Option Acacia Avenue, Huyton, Knowsley, Liverpool, L36 5TN,	E:344073 & N: 390021	Discounted from a planning perspective due to being situated next to mature trees. While these trees provide natural screening a tall lattice tower will be required to surmount these trees, and the trees may be required to be lopped to reduce interference with the antennas. Furthermore, a lattice structure is considered to have a significant visual impact on the nearby residential properties and amenity of the residents. The site would also encroach on the boundary of a designated Local Wildlife Site (Ten Acre Pits) which could lead to a loss of biodiversity. As such, the impact on visual amenity and the surrounding environment was considered greater than the proposed site.

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D5 Greenfield	Laburnum Greenfield Option Laburnum Avenue, Huyton, Knowsley, Liverpool, L36 5UE	E:344084 & N: 389928	Discounted from a planning perspective due to being situated next to mature trees. While these trees provide natural screening a tall lattice tower will be required to surmount these trees, and the trees may be required to be lopped to reduce interference with the antennas. Furthermore, a lattice structure is considered to have a significant visual impact on the nearby residential properties and amenity of the residents. The site would also encroach on the boundary of a designated Local Wildlife Site (Ten Acre Pits) which could lead to a loss of biodiversity. As such, the impact on visual amenity and the surrounding environment was considered greater than the proposed site.
D6 Greenfield	Greenlands Intersection SW Tarbock Road, Huyton, Knowsley, Liverpool, L36 5TD	E:344259 & N:390097	Discounted from a planning perspective due to very limited pavement width and the narrowness of the grass verge causing potential accessibility issues. Installing a structure here would have a considerable visual impact on the residential amenity of the area. The site is considered to be too exposed with limited screening/backdrop. The mast would be a prominent structure visible from both north and south approaches along Tarbock Road. The proposed option is more appropriate to deliver the required amount of coverage to the target area.
D7 Streetworks	Tarbock Road SW Tarbock Road, Huyton Quarry, Huyton, Knowsley,	E:344575 & N:389848	Discounted from a planning perspective due to very limited pavement width and the narrowness of the grass verge causing potential accessibility issues. Installing a structure here would have a

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	Liverpool, L36 0SH		considerable visual impact on the residential amenity of the area. The site is considered to be too exposed with limited screening/backdrop. The mast would be a prominent structure visible from both north and south approaches along Tarbock Road. The proposed option is more appropriate to deliver the required amount of coverage to the target area.
D8 Greenfield	Grass Verge Tarbock Road Tarbock Road, Huyton Quarry, Huyton, Knowsley, Liverpool, L36 0SD	E:345004 & N:389594	Discounted from a radio perspective due to being situated beyond the designated search area. Therefore, the site would not meet the network requirement to provide high-quality 4G & 5G coverage and capacity to the target audience and area. Therefore, there would be no justifiable need for the development from a social, economic, and environmental perspective.
D9 Streetworks	Tarbock Road Roundabout Tarbock Road, Huyton Quarry, Huyton, Knowsley, Liverpool, L36 5XN	E:343776 & N:390474	Discounted from a radio perspective due to being situated beyond the designated search area. Therefore, the site would not meet the network requirement to provide high-quality 4G & 5G coverage and capacity to the target audience and area. Therefore, there would be no justifiable need for the development from a social, economic, and environmental perspective.
D10 Greenfield	Twickenham Drive Greenfield Twickenham Drive, Huyton, Knowsley, Liverpool,	E:343641 & N:390390	Discounted from a radio perspective due to being situated beyond the designated search area. Therefore, the site would not meet the network requirement to provide high-quality 4G & 5G coverage and capacity to the

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	L36 4QE		target audience and area. Therefore, there would be no justifiable need for the development from a social, economic, and environmental perspective. STATS line search suggests the location would not be viable for the installation of a telecoms mast and would not support the underground works required for the development.
Discounted Zone	Sycamore Drive Linden Drive Laburnum Drive Cherry Tree Road		Discounted from a planning perspective due to the area being exclusively residential. Very limited pavement width across the entire zone. Any development would cause considerable accessibility issues and have a substantial impact on residential amenity in this area. Any development within the zone is considered to be too exposed with limited screening/backdrop from the parallel properties.

If no alternative site options have been investigated, please explain why:

N/A

Land use planning designations:

N/A

Additional relevant information (include planning policy and material considerations):

From the outset, it should be appreciated that irrespective of the proposed installation's use as a telecommunications apparatus, any change in form in the street scene will always be, to some degree, a noticeable alteration to those residents and regular passers-by found closest. However, it should be recognised

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that visibility or a development's siting and appearance, does not automatically result in an overwhelming adverse harm.

When considering the appropriateness of telecommunications development proposals, it is imperative that Decision Makers give precedence to telecommunications specific policy where it exists. If it does not exist at a local level, or if the policy is out of date, then National Policy must prevail. One must also appreciate that it is extremely unreasonable to expect niche infrastructural development to strictly adhere to more general policy criteria.

The following information outlines the various planning guidance and policy that has been considered relevant to the subject application. It is not necessary to quote extensively from these documents, but the following points are highlighted.

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. The following points are highlighted and commented against.

National Planning Policy Framework (December 2023)

The Government's latest thinking continues to strongly support communications infrastructure. The NPPF remains very supportive of high-quality communications. Indeed, a whole chapter (10) is dedicated to high-quality communications, emphasising the importance that the Government attaches to digital connectivity to contribute to a well-functioning society.

118. Advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. Planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology (such as 5G)(...). 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 proposed development will provide 5G. 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 handled devices can continue to be used for the purposes in which they were purchased. Furthermore, it will provide the appropriate network for smart applications. This will bring even greater economic and social benefits to the area.

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119. 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. Use of existing masts, buildings and other structures for new electronic communications capability (including wireless) should be encouraged. Where new sites are required (such as for new 5G networks (...)), equipment should be sympathetically designed and camouflaged where appropriate.

Albeit existing sites were considered during the initial stages, no suitable alternatives were identified. This installation is required to provide optimal network coverage, capacity and the latest technologies to a specific target area. Upgrading existing sites would simply result in an overlap of coverage and not the desired target area. There are no large commercial buildings or tall built structures of sufficient height and size which could host the required communications apparatus. Thus, the use of existing masts, buildings and other structures are not possible, and a new site is required. The NPPF recognises that new sites are often required with the provision of new 5G networks, as is the case with the Proposed Site.

120. (...) They should ensure that: a) they have evidence to demonstrate that electronic communications infrastructure is not expected to cause significant and irremediable interference with other electrical equipment, air traffic services or instrumentation operated in the national interest; and b) (...).

There are no airfields in proximity to the site.

121. Applications for electronic communications development (including applications for prior approval under the General Permitted Development Order) should be supported by the necessary evidence to justify the proposed development. This should include: a) the outcome of consultations with organisations with an interest in the proposed development, in particular with the relevant body where a mast is to be installed near a school or college, or within a statutory safeguarding zone surrounding an aerodrome, technical site or military explosives storage area; and b) for an addition to an existing mast or base station (...) c) for a new mast or base station, evidence that the applicant has explored the possibility of erecting antennas on an existing building, mast or other structure and a statement that self-certifies that, when operational, International Commission guidelines will be met.

Consultation letter and drawings were sent to the LPA, Ward Councillors, and Local MP prior to the submission of the application. The outcome of these consultations is detailed in **Section 2** of this report.

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Para. 122 relates to determining planning 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-making, 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 protected 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 **Para. 38** it states that:

38. 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. **Para. 81** states:

81. 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, considering 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 innovation⁴²...

Footnote 42 of the NPPF states the following which supports the development of advances, high quality and reliable communications infrastructure:

"The Government's Industrial Strategy sets out a vision to drive productivity improvements across the UK, identifies a number of Grand Challenges facing all

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nations, and sets out a delivery programme to make the UK a leader in four of these: artificial intelligence and big data; clean growth; future mobility and catering for an ageing society. HM Government (2017) Industrial Strategy: Building a Britain fit for the future."

Code of Practice for Wireless Network Development in England (March 2022)

The Code of Practice ('the Code') The Code of Practice ('the Code') provides guidance to Code Operators (referred to as 'operators' throughout the Code of Practice), including the Mobile Network Operators and wireless infrastructure providers, their agents and contractors, local planning authorities, and all other relevant stakeholders in England on how to carry out their roles and responsibilities when installing wireless network infrastructure. It is also a useful tool for other interested stakeholders such as community groups, amenity bodies and individuals with an interest in mobile connectivity.

The aim of the Code is to support the government's objective of delivering high-quality wireless infrastructure whilst balancing these needs with environmental considerations. It also has an important role in making sure that appropriate engagement takes place with the local communities and interested parties.

The Code covers all forms of wireless infrastructure development, including mobile masts and cabinets. It is recommended that other wireless communications operators follow the principles of this Code of Practice, where appropriate.

Unlike previous iterations, this code of practice has been led by the Department of Digital, Culture, Media, and Sports (DCMS) and developed in collaboration with representatives of the mobile network industry, other government departments and public bodies, local planning authorities, and protected landscapes. This document supersedes the previous Code of Best Practice on Mobile Network Development, which was published in 2016 and was not published by DMCS.

The Code sets out the legal and policy framework for the delivery of wireless infrastructure development.

Importance of Connectivity

Para. 8-12 of the Code sets out the importance of connectivity:

8. Digital connectivity is vital to enable people to stay connected and businesses to grow. Fast, reliable digital connectivity can deliver economic, social and well-being benefits for the whole of the UK.

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9. As the demand for mobile data in the United Kingdom is increasing rapidly, it is important that everyone has access to dependable and consistent mobile coverage where they live, work and travel.

10. The **Future Telecoms Infrastructure Review (FTIR)** and the **National Infrastructure Strategy** set out the government's long-term strategy for meeting its digital connectivity targets and delivering high-quality, the reliable digital infrastructure that works across the UK².

11. The government has committed to extending mobile coverage across the UK. It's Levelling Up White Paper has set a mission that the UK will have nationwide 4G coverage, with 5G coverage for most of the population by 2030. In support of this, the government and the UK's mobile network operators agreed to a **£1 billion Shared Rural Network deal** to extend 4G mobile geographical coverage to 95% of the UK by the end of the programme.

12. **Next Generation Mobile Technologies: A 5G Strategy for the UK**, and the **update** to this, set out the government's ambition for the UK to be a global leader in 5G to take early advantage of its potential and help to create a world-leading digital economy that works for everyone. The government also wants businesses and communities to benefit from investments in 5G as soon as possible. Through the government's 5G Testbeds and Trials programme we have seen its value to manufacturing, farming, transport networks and healthcare.

The Government recognises the key role that the Planning System plays 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. These improvements will contribute to the social and economic wellbeing of the designated community of Huyton, providing dependable and consistent coverage to keep up with the rest of the world.

How Wireless Networks Function

Para. 16-17 of the Code sets out 'How wireless networks function' and how the technologies have evolved over time to provide us with a better service:

16. "Cellular wireless networks use base stations to provide an area of radio coverage. Wireless technology uses the radio spectrum to broadcast radio waves between base stations and devices. Different radio frequencies have

² The [Statement of Strategic Priorities for Telecommunications, The Management of the Radio Spectrum, and Postal Services](#) followed the publication of the FTIR and reflects its conclusions

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different characteristics which, along with the density of cell site locations, affect the extent of coverage and how much data can be carried over the network. Depending on the radio frequencies used, base stations can deliver coverage over a wide area or provide extra network capacity in areas where there is a high demand for network bandwidth.”

17. Wireless technology continues to evolve rapidly, and mobile devices are now capable of much more. Second-generation (2G) technology gave us voice calls and text messages, 3G led to the launch of smartphones, and 4G, which enabled faster browsing, allowed us to do things like watching videos on the move. 5G, the latest generation of wireless technology, is much faster than previous generations of wireless technology and can offer greater capacity and lower latency, allowing thousands of devices in a small area to be connected at the same time. 5G networks, and future mobile generations, will be vital for a range of Internet of Things uses (IoT) and Smart City applications.

The Code establishes ‘Principles and commitments’ by which operators should develop their networks and that Local Planning Authorities should demonstrate their support.

Principles and Commitments

Para. 18 of the Code sets out the principles and commitments that operators should follow when developing their networks inter alia:

- Site sharing and use of existing structures: make use of existing structures, sites, and masts wherever possible to reduce the need for new development.
- Consultation with local planning authorities, local communities, and other stakeholders.
- Standardised and high-quality approach to planning applications, and the notification procedure: provide standardised supporting documentation for planning applications (where appropriate) within the context of national and local requirements.
- Compliance with guidance laid out in the International Commission on Non-Ionizing Radiation (ICNIRP) public exposure levels guidance.

The Code also sets out the requirements of the LPA in relation to the deployment of digital infrastructure:

- **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.

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- **Facilitating sites:** engage with the operators when new sites have been proposed and discuss site requirements.
- **Engagement with operators:** respond positively to requests for engagement and make decision in line with national policy and Local Plans. For planning applications, find solution to issues and ensure timely decisions are made.

The added emphasis on support from the local Planning Authorities in the deployment of digital infrastructure is even more evident in the revised Code of Practice. 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

The government’s objective is to deliver high-quality, reliable wireless infrastructure whilst ensuring the impact of new network development is kept to a minimum. The siting and design of wireless network infrastructure is central to achieving this. The Code acknowledges that *“good siting and design principles should apply to all wireless network development and consider any site – specific considerations and context. Both can create better places in which to live and work and help make the development acceptable to communities.”*

The Code provides guidance on siting and appearance principles in respect to telecommunications development. The guidance includes:

22. The choice over the site selection and design of equipment is primarily dependent upon the coverage and capacity requirements and technical constraints of a specific location, although operators should make efforts to reduce visual impacts where possible.

Para. 23 confirms that there should be a **“presumption in favour of facilitating sustainable network development”** and, as such, operators, and local planning authorities, as well as all other bodies involved in the deployment process, should work together to ensure connectivity needs are met and find viable solution to deployment issues.

Para. 24-27 set out general siting and site selection principles that Operators should consider.

The Code acknowledges at **Para. 24** that:

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24. Operators use a range of sophisticated, computer-based planning tools to predict levels of signal strength and coverage from sites for 2G, 3G, 4G and now 5G. Once an operator has identified a requirement for a new cell site, a suitable site needs to be found. Elements that make a site favourable include having existing or ready access to a power supply, access to fibre optic cables, vehicular access, and other buildings and development which may provide a level of existing screening. Operators will typically look to upgrade existing infrastructure prior to considering a new development, for initial 5G deployment.

Para. 25 notes that “when selecting sites for mobile infrastructure, operators should examine local plans and designation for the area, as well as carrying out an in – person site search to identify potential options which meet their requirements. Operators should follow these general sitting and site selection principles:

- 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);
- Mast and / or site sharing (including the redevelopment of a site to enable upgrade or sharing with another operator).

Para. 26 highlights that the installation of all wireless infrastructure requires a balanced approach between the technical needs and constraints of proposed site and the potential impact of the development. 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.
- **Capacity:** where existing network infrastructure can no longer meet the demand for network capacity in a particular area, additional sites may 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.

Para. 27 requires that Local Planning Authorities consider these issues and consider the need for a site within a limited search area alongside the public benefits of improved connectivity. Para. 27 further considers that in general, it should not,

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therefore, be appropriate for planning authorities to seek wider evidence of alternative sites (*beyond that required by the NPPF*) unless they consider the proposed development is unacceptable having regard to the relevant material planning considerations.

In respect of 'Design', the Code at **Para. 28** acknowledges that the siting of wireless infrastructure will influence which design options are most appropriate for reducing the visual impact including:

- **Protecting visual amenity**
- **Mitigating visual impacts**

Para. 29 acknowledges that these factors along with location and the coverage and capacity requirements can influence the type of infrastructure structure that is deployed and requires that "*planning authorities should be aware of these constraints when considering proposals. In particular:*

- ***In urban areas**, where there is a high level of demand for mobile data, mobile base stations are likely to need to be deployed more densely. In these settings you can expect to see more use of street works monopoles and rooftop installations and, in the future, we are likely to see a larger number of smaller units (so-called "small cells") deployed on buildings and on street furniture.*

The Code establishes radio equipment housing (cabinets) principles. It states at **Para. 30** that:

30. cabinets protect radio transmitters and receivers, provide the power sources for mobile equipment, and are connected to antennas via cables. Equipment cabinets are likely to be needed at most sites. The cabinets must be of sufficient size to facilitate hosting various operating equipment whilst also allowing air circulation to reduce the potential for overheating.

The Code establishes the planning and visual considerations for siting radio housing. These include:

- **Colouring**
- **Sitting on highways and footways**
- **Highway safety**
- **Listed buildings/scheduled monuments and Conservation Areas**
- **Access**
- **Trees**

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The Code notes that new ground-based masts will sometimes be required to accommodate the ever-increasing coverage and capacity needs of the country. 4G and 5G are likely to require further network densification to meet the growing customer demand for data. Where higher frequencies are used, with lower signal propagation characteristics, the apparatus will need to be in closer proximity to user devices. The type of mast deployed will depend upon the location and setting, as well as the coverage requirements of the site. The Code acknowledges that there are many ways by which the potential for the environmental and visual impact of a ground-based mast can be reduced.

Para. 39 (Mast Positioning) advises that all new masts should be sited, as far as practicable, to minimise their impact on their setting, including the landscape and any buildings. This includes sitting next to similar structures – e.g. street works masts should ideally be sited in line and in harmony, with existing vertical structures such as lighting columns, to minimise their visual impact. Placing a mast within or adjacent to an existing group of trees, vegetation and other natural features can reduce visual impact. Antennas will, however, need to be sufficiently elevated to clear the tree line.

Para. 40 relates to colouring, camouflage, and states that where appropriate masts should be coloured to match their backdrop to minimise contrast in an urban setting. Street works monopoles can utilise design features such as banding to protect visual amenity, though, for some 5G infrastructure, camouflage design solutions may not be practicable. Simple designs should be encouraged. Masts which have a complex design are more likely to dominate and be in discord with the landscape and have adverse visual impacts.

The Code states again in **Para. 64** that there are three primary technical and operational considerations for the installation of radio base stations which are: ensuring that wireless infrastructure provides an appropriate level of coverage over the intended geographical area; ensuring that sites have sufficient capacity to meet user demand; and requiring a connection to the wider network 'backhaul.' Para. 65 notes that planning authorities should take account of these constraints on network deployment, siting, and design when considering proposals.

5G Network Deployment

Para 66-67 of the Code set out the 5G network deployment considerations:

66. With the introduction of 5G, more equipment will be required to provide coverage and capacity. 5G, as well as 4G, are data-driven technologies, and high volumes of data will be transmitted between base stations and wireless devices. 5G will require a denser network of base stations than previous

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generations, including more fixed-line fibre optic cable for dependable and high-capacity backhaul. The siting of 5G installations will be more constrained and guided by these special technical and operational considerations.

67. Due to the scale and technological constraints of 5G equipment, in some cases 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.

Local Guidance

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”.

The Development Plan as defined by the Planning and Compulsory Purchase Act 2004 for Sheffield currently comprises the following documents:

- The Knowsley Local Plan Core Strategy (2016)
- Knowsley Unitary Development Plan Saved Policies (2006)

In respect of the Core Strategy, the most relevant policies are as follows:

Policy CS4: Economy & Development

A key requirement of the Core Strategy is to facilitate employment development of the right type and in the right location to support the Council's employment priorities. This is particularly important given the high levels of socio-economic deprivation which exist in the borough. These and other requirements are addressed by Policy CS4.

Overall Employment Development Strategy

- 1) Planning, site assembly and other available interventions will be used to:
- a) Support sustainable economic growth and meet the development needs of established and emerging employment sectors, including the Liverpool City Region key economic sectors;
 - b) Provide sufficient land to meet employment development needs to 2028; c)
 - Enhance the quality and efficiency of land use within existing employment areas;

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- d) Improve accessibility to an appropriate range of jobs, for example by encouraging mixed use employment/residential schemes where appropriate and improving transport linkages between housing and employment areas;
- e) Address skills and educational barriers to employment;
- f) Encourage recruitment targeted towards communities living in and around the development site;
- g) Support new start up businesses including social enterprise;
- h) Encourage homeworking through improvements to digital communications and telecommunications infrastructure;
- i) Support the diversification of the rural economy; and
- j) Support the appropriate development of tourism facilities.

In relation to the saved policies of the Knowsley UDP, the following policies are the most applicable:

Policy ENV8: Telecommunications Development

1. Proposals for new telecommunications masts and associated antennae and buildings will not be permitted unless the applicant has demonstrated that the following criteria would be satisfied:

a) Where the proposal is for a free standing mast, the need for the development could not, for technical reasons, be met in a more environmentally acceptable manner by:

- *Sharing an existing mast or site,*
- *Erecting antennae on an existing building or other structure;*

b) The development would not, by reason of its scale, siting or design, have an unacceptable impact on the character or appearance of the surrounding area, or the amenity of nearby residents.

2. New telecommunications development will not be permitted within environmentally sensitive areas, such as Conservation Areas, residential areas or the Green Belt, unless the applicant has demonstrated that there are no other suitable alternative sites outside such areas and that appropriate steps have been taken to minimize any visual impact through careful siting, design and screening.

3. Applications for development by telecommunications code system operators must be accompanied by:

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- a) Evidence that the proposal would comply with all relevant ICNIRP14 Standards (or future guidance which may supersede the current guidelines), taking into account any cumulative emissions from other nearby telecommunications equipment;*
- b) Evidence of how the proposal fits into the wider network, regionally and nationally.*
- c) Where the telecommunication development would be on or near a school or college site, evidence that the governing body of the relevant school or college has been consulted.*

Planning Assessment

In light of the provisions of Schedule 2, Part 16, Class A of the GPDO, the development is assessed on the basis of its siting and appearance. The provision of the development plan are material considerations as far as they relate to siting and design. The main issues arising from this prior approval notification are whether the proposed monopole and cabinets, would be a visually obtrusive feature which would be detrimental to the character and appearance of the area, and whether any perceived harm would outweigh the significant social and economic benefits associated with the roll-out of 5G and the next generation connectivity.

The proposed development complies with both local and national planning policy in that:

- a.) Detail has been provided explaining the need for a new mast and the reasons why existing structures or buildings cannot be utilized
- b.) The design and location of the mast is such that impact on the surrounding area has been minimised as far as practicable
- c.) The site is not located within any designated land use
- d.) The required information is included with this application.

The site has been designed to minimise its screening within the local streetscape. The pole and cabinets are proposed to be painted grey to assimilate with the skyline and street light columns in the vicinity unless otherwise indicated by the LPA. The cabinets will be joined together so they are as close together as possible, presenting a compact design. The cabinets are proposed to be painted grey (unless otherwise indicated by the LPA). Thus, visual impact will be minimised as far as practicable.

The proposed site is the only option that minimises the impact of the development on the nearby residential areas. The number of front-facing houses that have a direct view of the site has been kept to an absolute minimum and therefore the residential visual amenity is maintained.

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The proposed height of 20m is necessary to enable the antenna to surmount the clutter of the surrounding environment. Furthermore, new 5G technologies also require a higher minimum mast height, as they operate at higher frequencies, where attenuation of the radio signal is naturally higher, and the effects of clutter are greater. The street pole proposed is the most streamlined and visually sensitive design available to the Operator which can support all the technologies. It is considered the proposed design, and the associated viability of the scheme does not outweigh the overall public benefits of the scheme.

Due regard should be given to the continued encouragement by the Government for improved quality communications, supported by the Code of Practice published the recent relaxation of permitted development rights for telecommunications development an indicator that development such as this proposed is increasing common and considered as acceptable.

To conclude, while it is acknowledged there will be a degree of visual impact, the siting and nearby trees assist in limiting impact on the area and upon the outlook of the occupiers of the nearest houses. With the reduction in height compared to the original design, adopting pre-consultation recommendations, the balance of the public benefit of improved communications is now considered to outweigh the visual impact of the proposal on the area and should now be accepted and supported.

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:

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

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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.

Confirmation that submitted drawings have been checked for accuracy

Name: (Agent)	_____	Telephone:	_____
Company:	_____		_____
Company Address:	_____	Email Address:	_____
Signed:	_____	Date:	_____
Position:	_____	(on behalf of Cornerstone)	_____

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